GENERAL SERVICES ADMINISTRATION
FEDERAL SUPPLY SERVICE
AUTHORIZED FEDERAL SUPPLY SCHEDULE CATALOG/PRICE LIST

MULTIPLE AWARD SCHEDULE

Information Technology - IT Training

SIN 611420
Training Courses for Information Technology Equipment and Software

Duns Number: 080690173

Contract Number: 47QTCA20D004U

Contract Period: January 22, 2020 through January 21, 2025
Price List through SF1449 Awarded: January 22, 2020
Contract price list thru PS Mod #004 April 15, 2020

Contractor:
Cyber World Institute
2245 Fire Mesa St. Suite 200A
Las Vegas, NV 89128
1-888-CWI-4YOU (888-294-4968)
www.cyberworldinstitute.com
# TABLE OF CONTENTS

Contract Information .................................................................................................................. 3
Contractor Contact Information .................................................................................................. 3
Information for Ordering Activities Applicable To Special Item Numbers.. 4
Terms and Conditions .................................................................................................................. 13
Instructor Led Course List by Certification Vendor ................................................................. 16
Instructor Led Course Descriptions ............................................................................................ 18
Instructor Led Course Price List .................................................................................................. 44
Certification Exam Test Voucher Price List .............................................................................. 46
Online Learning Overview ......................................................................................................... 47
Online Learning Course Index and Prices ................................................................................. 48
Online Course Descriptions ...................................................................................................... 53
Lab Overview ............................................................................................................................... 118
Lab Index and Prices ................................................................................................................... 120
Lab Descriptions ....................................................................................................................... 123
GENERAL SERVICES ADMINISTRATION
FEDERAL SUPPLY SERVICE
AUTHORIZED FEDERAL SUPPLY SCHEDULE CATALOG/PRICE LIST

On-line access to contract ordering information, terms and conditions, up-to-date pricing, and the option to create an electronic delivery order is available through GSA Advantage!, a menu-driven database system. The INTERNET address for GSA Advantage! is [http://www.gsaadvantage.gov](http://www.gsaadvantage.gov)

**SCHEDULE TITLE:** Federal Supply Schedule 70 – General Purpose Commercial Information Technology Equipment, Software, and Services

**CONTRACT NUMBER:** GS-35F-47QTCA20D004U

**CONTRACT PERIOD:** January 22, 2020 through January 21, 2025

For more information on ordering from Federal Supply go to this website: [www.gsa.gov/schedules](http://www.gsa.gov/schedules)

**CONTRACTOR:** Cyber World Institute
2445 Fire Mesa St. Suite 200A
Las Vegas, NV 89128
Phone number: 1-888-294-4968 (888-CWI-4YOU)
Mobile: 702-521-7543
Fax number: (702) 212-4040
E-Mail: nield@cyberworldinstitute.com

**CONTRACTOR’S ADMINISTRATION SOURCE:**

<table>
<thead>
<tr>
<th>Primary Contact:</th>
<th>Alternate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linda Montgomery, President</td>
<td>Nield Montgomery</td>
</tr>
<tr>
<td>2445 Fire Mesa St, Suite 200A</td>
<td>2445 Fire Mesa St, Suite 200A</td>
</tr>
<tr>
<td>Las Vegas, NV 89128</td>
<td>Las Vegas, NV 89128</td>
</tr>
<tr>
<td>Phone number: 888-294-4968</td>
<td>Phone number: 888-294-4968</td>
</tr>
<tr>
<td>Fax number: 702-212-4040</td>
<td>Mobile: 702-521-7543</td>
</tr>
<tr>
<td>E-Mail: <a href="mailto:lmontgomery@cyberworldinstitute.com">lmontgomery@cyberworldinstitute.com</a></td>
<td>Fax number: 702-212-4040</td>
</tr>
<tr>
<td></td>
<td>E-Mail: <a href="mailto:nield@cyberworldinstitute.com">nield@cyberworldinstitute.com</a></td>
</tr>
</tbody>
</table>

**BUSINESS SIZE:** Small Business

**BUSINESS TYPE:** Small Disadvantaged Business, Women Owned Business
Information for Ordering Activities Applicable To All Special Item Numbers

Special Notice to Agencies: Small Business Participation

SBA strongly supports the participation of small business concerns in the Federal Acquisition Service. To enhance Small Business Participation SBA policy allows agencies to include in their procurement base and goals, the dollar value of orders expected to be placed against the Federal Supply Schedules, and to report accomplishments against these goals.

For orders exceeding the micro purchase threshold, FAR 8.404 requires agencies to consider the catalogs/pricelists of at least three schedule contractors or consider reasonably available information by using the GSA Advantage!™ on-line shopping service (www.gsaadvantage.gov). The catalogs/pricelists, GSA Advantage!™ and the Federal Acquisition Service Home Page (www.fss.gsa.gov) contain information on a broad array of products and services offered by small business concerns.

This information should be used as a tool to assist ordering activities in meeting or exceeding established small business goals. It should also be used as a tool to assist in including small, small disadvantaged, and women-owned small businesses among those considered when selecting pricelists for a best value determination. For orders exceeding the micro purchase threshold, customers are to give preference to small business concerns when two or more items at the same delivered price will satisfy their requirement.

1. Geographic Scope of Contract:

*Domestic delivery* is delivery within the 48 contiguous states, Alaska, Hawaii, Puerto Rico, Washington, DC, and U.S. Territories. Domestic delivery also includes a port or consolidation point, within the aforementioned areas, for orders received from overseas activities.

*Overseas delivery* is delivery to points outside of the 48 contiguous states, Washington, DC, Alaska, Hawaii, Puerto Rico, and U.S. Territories.

Offerors are requested to check one of the following boxes:

[X] The Geographic Scope of Contract will be domestic and overseas delivery.

[ ] The Geographic Scope of Contract will be overseas delivery only.

[ ] The Geographic Scope of Contract will be domestic delivery only.

2. Contractor's Ordering Address And Payment Information:

Cyber World Institute  
2445 Fire Mesa St. Suite 200A  
Las Vegas, NV 89128

Contractors are required to accept credit cards for payments equal to or less than the micro-purchase threshold for oral or written delivery orders. Credit cards will be acceptable for payment above the micro-purchase threshold. In addition, bank account information for wire transfer payments will be shown on the invoice.
The following telephone number(s) can be used by ordering activities to obtain technical and/or ordering assistance: 702-521-7543

3. Liability for Injury or Damage:

The Contractor shall not be liable for any injury to ordering activity personnel or damage to ordering activity property arising from the use of equipment maintained by the Contractor, unless such injury or damage is due to the fault or negligence of the Contractor.

4. Statistical Data for Government Ordering Office Completion of Standard Form 279:

Block 9: G. Order/Modification Under Federal Schedule

Block 16: Data Universal Numbering System (DUNS) Number: 080690173

Block 30: Type of Contractor – Small Business, Economically Disadvantage Women-Owned Small Business

Block 31: Woman-Owned Small Business - Yes

Block 36: Contractor's Taxpayer Identification Number (TIN): 81-4766219

4a. CAGE Code: 7X0R4

4b. Contractor has registered with System Award Management (SAM)

5. FOB Destination

6. Delivery Schedule

a. TIME OF DELIVERY: The Contractor shall deliver to destination within the number of calendar days after receipt of order (ARO), as set forth below:

SPECIAL ITEM NUMBER DELIVERY TIME (Days ARO) - As negotiated with ordering activity

b. URGENT REQUIREMENTS: When the Federal Supply Schedule contract delivery period does not meet the bona fide urgent delivery requirements of an ordering activity, ordering activities are encouraged, if time permits, to contact the Contractor for the purpose of obtaining accelerated delivery. The Contractor shall reply to the inquiry within 3 workdays after receipt. (Telephonic replies shall be confirmed by the Contractor in writing.) If the Contractor offers an accelerated delivery time acceptable to the ordering activity, any order(s) placed pursuant to the agreed upon accelerated delivery time frame shall be delivered within this shorter delivery time and in accordance with all other terms and conditions of the contract.

7. Discounts:

Prices shown are NET Prices; Basic Discounts have been deducted.

a. Prompt Payment: 1% - 20 days from receipt of invoice or date of acceptance, whichever is later
b. Quantity: 10% student cohort 10+

c. Dollar Volume: Additional 1% discount on task order of $200k or greater amount

d. Government Educational Institutions: None

e. Other

8. Trade Agreements Act of 1979, As Amended:

All items are U.S. made end products, designated country end products, Caribbean Basin country end products, Canadian end products, or Mexican end products as defined in the Trade Agreements Act of 1979, as amended.

9. Statement Concerning Availability Of Export Packing:

N/A

10. Small Requirements:

The minimum dollar value of orders to be issued is $100.00.

11. Maximum Order (All dollar amounts are exclusive of any discount for prompt payment.)

The Maximum Order value for the following Special Item Numbers (SINs) is $500,000

Special Item Number 611420 - Training Courses

12. Ordering Procedures for Federal Supply Schedule Contracts

Ordering activities shall use the ordering procedures of Federal Acquisition Regulation (FAR) 8.405 when placing an order or establishing a BPA for supplies or services. These procedures apply to all schedules.

a. FAR 8.405-1 Ordering procedures for supplies, and services not requiring a statement of work.

b. FAR 8.405-2 Ordering procedures for services requiring a statement of work.

13. Federal Information Technology/Telecommunication Standards Requirements:

Ordering activities acquiring products from this Schedule must comply with the provisions of the Federal Standards Program, as appropriate (reference: NIST Federal Standards Index). Inquiries to determine whether or not specific products listed herein comply with Federal Information Processing Standards (FIPS) or Federal Telecommunication Standards (FED-STDs), which are cited by ordering activities, shall be responded to promptly by the Contractor.

13.1 Federal Information Processing Standards Publications (Fips Pubs):

Information Technology products under this Schedule that do not conform to Federal Information Processing Standards (FIPS) should not be acquired unless a waiver has been granted in accordance with the applicable "FIPS Publication." Federal Information Processing
Standards Publications (FIPS PUBS) are issued by the U.S. Department of Commerce, National Institute of Standards and Technology (NIST), pursuant to National Security Act. Information concerning their availability and applicability should be obtained from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, Virginia 22161. FIPS PUBS include voluntary standards when these are adopted for Federal use. Individual orders for FIPS PUBS should be referred to the NTIS Sales Office, and orders for subscription service should be referred to the NTIS Subscription Officer, both at the above address, or telephone number (703) 487-4650.

13.2 Federal Telecommunication Standards (Fed-Stds):

Telecommunication products under this Schedule that do not conform to Federal Telecommunication Standards (FED-STDS) should not be acquired unless a waiver has been granted in accordance with the applicable "FED-STD." Federal Telecommunication Standards are issued by the U.S. Department of Commerce, National Institute of Standards and Technology (NIST), pursuant to National Security Act. Ordering information and information concerning the availability of FED-STDS should be obtained from the GSA, Federal Supply Service, Specification Section, 470 East L’Enfant Plaza, Suite 8100, SW, Washington, DC 20407, telephone number (202)619-8925. Please include a self-addressed mailing label when requesting information by mail. Information concerning their applicability can be obtained by writing or calling the U.S. Department of Commerce, National Institute of Standards and Technology, Gaithersburg, MD 20899, telephone number (301)975-2833.

14. Contractor Tasks / Special Requirements (C-Fss-370) (Nov 2001)

(a) Security Clearances: The Contractor may be required to obtain/possess varying levels of security clearances in the performance of orders issued under this contract. All costs associated with obtaining/possessing such security clearances should be factored into the price offered under the Multiple Award Schedule.

(b) Travel: The Contractor may be required to travel in performance of orders issued under this contract. Allowable travel and per diem charges are governed by Pub. L. 99-234 and FAR Part 31, and are reimbursable by the ordering agency or can be priced as a fixed price item on orders placed under the Multiple Award Schedule. The Industrial Funding Fee does NOT apply to travel and per diem charges.

NOTE: Refer to FAR Part 31.205-46 Travel Costs, for allowable costs that pertain to official company business travel in regards to this contract.

(c) Certifications, Licenses and Accreditations: As a commercial practice, the Contractor may be required to obtain/possess any variety of certifications, licenses and accreditations for specific FSC/service code classifications offered. All costs associated with obtaining/possessing such certifications, licenses and accreditations should be factored into the price offered under the Multiple Award Schedule program.

(d) Insurance: As a commercial practice, the Contractor may be required to obtain/possess insurance coverage for specific FSC/service code classifications offered.
All costs associated with obtaining/possessing such insurance should be factored into the price offered under the Multiple Award Schedule program.

(e) Personnel: The Contractor may be required to provide key personnel, resumes or skill category descriptions in the performance of orders issued under this contract. Ordering activities may require agency approval of additions or replacements to key personnel.

(f) Organizational Conflicts of Interest: Where there may be an organizational conflict of interest as determined by the ordering agency, the Contractor’s participation in such order may be restricted in accordance with FAR Part 9.5.

(g) Documentation/Standards: The Contractor may be requested to provide products or services in accordance with rules, regulations, OMB orders, standards and documentation as specified by the agency’s order.

(h) Data/Deliverable Requirements: Any required data/deliverables at the ordering level will be as specified or negotiated in the agency’s order.

(i) Government-Furnished Property: As specified by the agency’s order, the Government may provide property, equipment, materials or resources as necessary.

(j) Availability of Funds: Many Government agencies’ operating funds are appropriated for a specific fiscal year. Funds may not be presently available for any orders placed under the contract or any option year. The Government’s obligation on orders placed under this contract is contingent upon the availability of appropriated funds from which payment for ordering purposes can be made. No legal liability on the part of the Government for any payment may arise until funds are available to the ordering Contracting Officer.

15. Contract Administration for Ordering Activities:

Any ordering activity, with respect to any one or more delivery orders placed by it under this contract, may exercise the same rights of termination as might the GSA Contracting Officer under provisions of FAR 52.212-4, paragraphs (l) Termination for the ordering activity’s convenience, and (m) Termination for Cause (See C.1.)

16. GSA Advantage!

GSA Advantage! is an on-line, interactive electronic information and ordering system that provides on-line access to vendors’ schedule prices with ordering information. GSA Advantage! will allow the user to perform various searches across all contracts including, but not limited to:

(1) Manufacturer

(2) Manufacturer's Part Number

(3) Product categories.

Agencies can browse GSA Advantage! At https://www.gsaadvantage.gov

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
17. Purchase of Open Market Items

NOTE: Open Market Items are also known as incidental items, noncontract items, non-Schedule items, and items not on a Federal Supply Schedule contract. ODCs (Other Direct Costs) are not part of this contract and should be treated as open market purchases. Ordering Activities procuring open market items must follow FAR 8.402(f).

For administrative convenience, an ordering activity contracting officer may add items not on the Federal Supply Multiple Award Schedule (MAS) -- referred to as open market items -- to a Federal Supply Schedule blanket purchase agreement (BPA) or an individual task or delivery order, only if-

(1) All applicable acquisition regulations pertaining to the purchase of the items not on the Federal Supply Schedule have been followed (e.g., publicizing (Part 5), competition requirements (Part 6), acquisition of commercial items (Part 12), contracting methods (Parts 13, 14, and 15), and small business programs (Part 19));

(2) The ordering activity contracting officer has determined the price for the items not on the Federal Supply Schedule is fair and reasonable;

(3) The items are clearly labeled on the order as items not on the Federal Supply Schedule; and

(4) All clauses applicable to items not on the Federal Supply Schedule are included in the order.

18. Contractor Commitments, Warranties and Representations

a. For the purpose of this contract, commitments, warranties and representations include, in addition to those agreed to for the entire schedule contract:

(1) Time of delivery/installation quotations for individual orders;

(2) Technical representations and/or warranties of products concerning performance, total system performance and/or configuration, physical, design and/or functional characteristics and capabilities of a product/equipment/service/software package submitted in response to requirements which result in orders under this schedule contract.

(3) Any representations and/or warranties concerning the products made in any literature, description, drawings and/or specifications furnished by the Contractor.

b. The above is not intended to encompass items not currently covered by the GSA Schedule contract.

19. Overseas Activities

The terms and conditions of this contract shall apply to all orders for installation, maintenance and repair of equipment in areas listed in the pricelist outside the 48 contiguous states and the District of Columbia, except as indicated below:
Not Applicable

Upon request of the Contractor, the ordering activity may provide the Contractor with logistics support, as available, in accordance with all applicable ordering activity regulations. Such ordering activity support will be provided on a reimbursable basis, and will only be provided to the Contractor's technical personnel whose services are exclusively required for the fulfillment of the terms and conditions of this contract.

20. Blanket Purchase Agreements (BPAs)

The use of BPAs under any schedule contract to fill repetitive needs for supplies or services is allowable. BPAs may be established with one or more schedule contractors. The number of BPAs to be established is within the discretion of the ordering activity establishing the BPA and should be based on a strategy that is expected to maximize the effectiveness of the BPA(s). Ordering activities shall follow FAR 8.405-3 when creating and implementing BPA(s).

21. Contractor Team Arrangements

Contractors participating in contractor team arrangements must abide by all terms and conditions of their respective contracts. This includes compliance with Clauses 552.238-74, Industrial Funding Fee and Sales Reporting, i.e., each contractor (team member) must report sales and remit the IFF for all products and services provided under its individual contract.

22. Installation, Deinstallation, Reinstallation

The Davis-Bacon Act (40 U.S.C. 276a-276a-7) provides that contracts in excess of $2,000 to which the United States or the District of Columbia is a party for construction, alteration, or repair (including painting and decorating) of public buildings or public works with the United States, shall contain a clause that no laborer or mechanic employed directly upon the site of the work shall received less than the prevailing wage rates as determined by the Secretary of Labor. The requirements of the Davis-Bacon Act do not apply if the construction work is incidental to the furnishing of supplies, equipment, or services. For example, the requirements do not apply to simple installation or alteration of a public building or public work that is incidental to furnishing supplies or equipment under a supply contract. However, if the construction, alteration or repair is segregable and exceeds $2,000, then the requirements of the Davis-Bacon Act applies.

The ordering activity issuing the task order against this contract will be responsible for proper administration and enforcement of the Federal labor standards covered by the Davis-Bacon Act. The proper Davis-Bacon wage determination will be issued by the ordering activity at the time a request for quotations is made for applicable construction classified installation, deinstallation, and reinstallation services under SIN 132-8.

23. Section 508 Compliance

If applicable, Section 508 compliance information on the supplies and services in this contract are available in Electronic and Information Technology (EIT) at the following:

ACE is building its Section 508 compliance at this time. The EIT standard can be found at: www.Section508.gov/.

10

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
24. Prime Contractor Ordering From Federal Supply Schedules

Prime Contractors (on cost reimbursement contracts) placing orders under Federal Supply Schedules, on behalf of an ordering activity, shall follow the terms of the applicable schedule and authorization and include with each order

(a) A copy of the authorization from the ordering activity with whom the contractor has the prime contract (unless a copy was previously furnished to the Federal Supply Schedule contractor); and

(b) The following statement:

This order is placed under written authorization from _______ dated _______. In the event of any inconsistency between the terms and conditions of this order and those of your Federal Supply Schedule contract, the latter will govern.


(a) The Contractor shall, at its own expense, provide and maintain during the entire performance of this contract, at least the kinds and minimum amounts of insurance required in the Schedule or elsewhere in the contract.

(b) Before commencing work under this contract, the Contractor shall notify the Contracting Officer in writing that the required insurance has been obtained. The policies evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change adversely affecting the Government’s interest shall not be effective—

(1) For such period as the laws of the State in which this contract is to be performed prescribe; or

(2) Until 30 days after the insurer or the Contractor gives written notice to the Contracting Officer, whichever period is longer.

(c) The Contractor shall insert the substance of this clause, including this paragraph (c), in subcontracts under this contract that require work on a Government installation and shall require subcontractors to provide and maintain the insurance required in the Schedule or elsewhere in the contract. The Contractor shall maintain a copy of all subcontractors’ proofs of required insurance, and shall make copies available to the Contracting Officer upon request.

26. Software Interoperability

Offerors are encouraged to identify within their software items any component interfaces that support open standard interoperability. An item’s interface may be identified as interoperable on the basis of participation in a Government agency-sponsored program or in an independent organization program. Interfaces may be identified by reference to an interface registered in the component registry located at http://www.core.gov.
27. Advance Payments

A payment under this contract to provide a service or deliver an article for the United States Government may not be more than the value of the service already provided or the article already delivered. Advance or pre-payment is not authorized or allowed under this contract. (31 U.S.C. 3324)
TERMS AND CONDITIONS APPLICABLE TO PURCHASE OF TRAINING COURSES
FOR GENERAL PURPOSE COMMERCIAL INFORMATION TECHNOLOGY
EQUIPMENT AND SOFTWARE (SPECIAL ITEM NUMBER 611420)

1. SCOPE

   a. The Contractor shall provide training courses normally available to commercial
customers, which will permit ordering activity users to make full, efficient use of general-
purpose commercial IT products. Training is restricted to training courses for those
products within the scope of this solicitation.

   b. The Contractor shall provide training at the Contractor's facility and/or at the ordering
activity's location, as agreed to by the Contractor and the ordering activity.

2. ORDER

Written orders, EDI orders (GSA Advantage! and FACNET), credit card orders, and orders
placed under blanket purchase agreements (BPAs) shall be the basis for the purchase of training
courses in accordance with the terms of this contract. Orders shall include the student's name,
course title, course date and time, and contracted dollar amount of the course.

3. TIME OF DELIVERY

The Contractor shall conduct training on the date (time, day, month, and year) agreed to by the
Contractor and the ordering activity.

4. CANCELLATION AND RESCHEDULING

   a. The ordering activity will notify the Contractor at least seventy-two (72) hours before
the scheduled training date, if a student will be unable to attend. The Contractor will then
permit the ordering activity to either cancel the order or reschedule the training at no
additional charge. In the event the training class is rescheduled, the ordering activity will
modify its original training order to specify the time and date of the rescheduled training
class.

   b. In the event the ordering activity fails to cancel or reschedule a training course within
the time frame specified in paragraph a, above, the ordering activity will be liable for the
contracted dollar amount of the training course. The Contractor agrees to permit the
ordering activity to reschedule a student who fails to attend a training class within ninety
(90) days from the original course date, at no additional charge.

   c. The ordering activity reserves the right to substitute one student for another up to the
first day of class.

   d. In the event the Contractor is unable to conduct training on the date agreed to by the
Contractor and the ordering activity, the Contractor must notify the ordering activity at
least seventy-two (72) hours before the scheduled training date.
5. FOLLOW-UP SUPPORT

The Contractor agrees to provide each student with unlimited telephone support or online support for a period of one (1) year from the completion of the training course. During this period, the student may contact the Contractor's instructors for refresher assistance and answers to related course curriculum questions.

6. PRICE FOR TRAINING

The price that the ordering activity will be charged will be the ordering activity training price in effect at the time of order placement, or the ordering activity price in effect at the time the training course is conducted, whichever is less.

7. INVOICES AND PAYMENT

Invoices for training shall be submitted by the Contractor after ordering activity completion of the training course. Charges for training must be paid in arrears (31 U.S.C. § 3324). PROMPT PAYMENT DISCOUNT, IF APPLICABLE, SHALL BE SHOWN ON THE INVOICE.

8. FORMAT AND CONTENT OF TRAINING

a. The Contractor shall provide written materials (i.e., manuals, handbooks, texts, etc.) normally provided with course offerings, printed and copied two-sided on paper containing 30% postconsumer materials (fiber). Such documentation will become the property of the student upon completion of the training class.

b. **If applicable** For hands-on training courses, there must be a one-to-one assignment of IT equipment to students.

c. The Contractor shall provide each student with a Certificate of Training at the completion of each training course.

d. The Contractor shall provide the following information for each training course offered:

   (1) The course title and a brief description of the course content, to include the course format (e.g., lecture, discussion, hands-on training);
   (2) The length of the course;
   (3) Mandatory and desirable prerequisites for student enrollment;
   (4) The minimum and maximum number of students per class;
   (5) The locations where the course is offered;
   (6) Class schedules; and
   (7) Price (per student, per class (if applicable)).

e. For those courses conducted at the ordering activity’s location, instructor travel charges (if applicable), including mileage and daily living expenses (e.g., per diem charges) are governed by Pub. L. 99-234 and FAR Part 31.205-46, and are reimbursable by the
ordering activity on orders placed under the Multiple Award Schedule, as applicable, in effect on the date(s) the travel is performed. Contractors cannot use GSA city pair contracts. The Industrial Funding Fee does NOT apply to travel and per diem charges.

f. For Online Training Courses, a copy of all training material must be available for electronic download by the students.

9. “NO CHARGE” TRAINING
The Contractor shall describe any training provided with equipment and/or software provided under this contract, free of charge, in the space provided below:

None
## Course List by Certification Vendor:

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Instructor Led Course Title</th>
<th>Course Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amazon</td>
<td>AWS Solutions Architect -- Associate</td>
<td>A1001</td>
</tr>
<tr>
<td></td>
<td>AWS Developer -- Associate</td>
<td>A1002</td>
</tr>
<tr>
<td></td>
<td>AWS Certified SysOps Administrator - Associate</td>
<td>A1003</td>
</tr>
<tr>
<td></td>
<td>AWS Solutions Architect -- Professional</td>
<td>A1004</td>
</tr>
<tr>
<td></td>
<td>AWS DevOps Engineer -- Professional</td>
<td>A1005</td>
</tr>
<tr>
<td>CompTIA</td>
<td>CompTIA Advanced Security Practitioner (CASP) Certification</td>
<td>C1015</td>
</tr>
<tr>
<td></td>
<td>CompTIA PenTest+</td>
<td>C1028</td>
</tr>
<tr>
<td></td>
<td>CompTIA CYSA+</td>
<td>C1030</td>
</tr>
<tr>
<td></td>
<td>Certified Network Defender (CND)</td>
<td>C1031</td>
</tr>
<tr>
<td>CompTIA</td>
<td>CompTIA IT Fundamental (ITF+)</td>
<td>N1000</td>
</tr>
<tr>
<td></td>
<td>CompTIA A+</td>
<td>N1001</td>
</tr>
<tr>
<td></td>
<td>CompTIA Network+</td>
<td>N1002</td>
</tr>
<tr>
<td></td>
<td>CompTIA Security+</td>
<td>N1003</td>
</tr>
<tr>
<td></td>
<td>CompTIA Server+</td>
<td>N1004</td>
</tr>
<tr>
<td></td>
<td>CompTIA Linux+</td>
<td>N1005</td>
</tr>
<tr>
<td>CompTIA Cloud</td>
<td>CompTIA Cloud+ Certification</td>
<td>CL1001</td>
</tr>
<tr>
<td></td>
<td>CompTIA Cloud Essentials</td>
<td>CL1002</td>
</tr>
<tr>
<td>Cisco</td>
<td>Configuring CISCO Routers for Network Security</td>
<td>C1001</td>
</tr>
<tr>
<td></td>
<td>Security in an IPv6 Environment</td>
<td>C1004</td>
</tr>
<tr>
<td></td>
<td>Interconnecting Cisco Networking Devices1 (ICND 1)</td>
<td>N2001</td>
</tr>
<tr>
<td></td>
<td>Interconnecting Cisco Networking Devices 2 (ICND 2)</td>
<td>N2002</td>
</tr>
<tr>
<td></td>
<td>Cisco Certified Network Associate (CCNA)</td>
<td>N2003</td>
</tr>
<tr>
<td></td>
<td>CCNP: Implementing Cisco IP Routing (ROUTE)</td>
<td>N2004</td>
</tr>
<tr>
<td></td>
<td>CCNP: Implementing Cisco IP Switched Networks (SWITCH)</td>
<td>N2005</td>
</tr>
<tr>
<td></td>
<td>CCNP: Troubleshooting and Maintaining Cisco IP Networks (TSHOOT)</td>
<td>N2006</td>
</tr>
<tr>
<td></td>
<td>ICOMM - Introducing Cisco Voice and Unified Communications Admin v8.1</td>
<td>N2007</td>
</tr>
<tr>
<td></td>
<td>IUWNE - Implementing Cisco Unified Wireless Networking Essentials v2.0</td>
<td>N2008</td>
</tr>
<tr>
<td></td>
<td>IINS - Implementing Cisco IOS Network Security v2.0</td>
<td>N2009</td>
</tr>
<tr>
<td></td>
<td>DCUCI - Implementing Cisco Data Center Unified Computing v5.0</td>
<td>N2010</td>
</tr>
<tr>
<td></td>
<td>Securing Cisco Networks with Threat Detection and Analysis (SCYBER)</td>
<td>N2011</td>
</tr>
<tr>
<td>EC-Council</td>
<td>Certified Incident Handler (ECIH)</td>
<td>C1016</td>
</tr>
<tr>
<td></td>
<td>Disaster Recovery Professional (EDRP)</td>
<td>C1017</td>
</tr>
<tr>
<td></td>
<td>Certified Ethical Hacker (CEH)</td>
<td>C1021</td>
</tr>
<tr>
<td></td>
<td>Computer Hacking Forensic Investigator (CHFI)</td>
<td>C1022</td>
</tr>
<tr>
<td></td>
<td>ECSA/LPT</td>
<td>C1023</td>
</tr>
<tr>
<td>Executive</td>
<td>Certified Chief Information Security Officer Certification (CISO)</td>
<td>E2001</td>
</tr>
<tr>
<td>ISC2</td>
<td>Certified Authorization Professional (CAP®)</td>
<td>C1019</td>
</tr>
<tr>
<td></td>
<td>Risk Management Framework (RMF)</td>
<td>C1020</td>
</tr>
<tr>
<td></td>
<td>Certified Information Systems Security Professional (CISSP)</td>
<td>C1026</td>
</tr>
<tr>
<td></td>
<td>Certified Cloud Security Professional (CCSP)</td>
<td>C1027</td>
</tr>
<tr>
<td></td>
<td>Systems Security Certified Practitioner (SSCP)</td>
<td>C1029</td>
</tr>
<tr>
<td>ISACA</td>
<td>Certified in Risk and Information Systems Control (CRISC)</td>
<td>C1018</td>
</tr>
<tr>
<td>-------</td>
<td>---------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td></td>
<td>Certified Information Security Manager (CISM)</td>
<td>C1024</td>
</tr>
<tr>
<td></td>
<td>Certified Information Systems Auditor (CISA)</td>
<td>C1025</td>
</tr>
<tr>
<td></td>
<td>Securing SharePoint</td>
<td>C1003</td>
</tr>
<tr>
<td>Microsoft</td>
<td>Install, Deploy, Configure, Protect, Support and Maintain Windows 10</td>
<td>MD-100</td>
</tr>
<tr>
<td></td>
<td>Deploying, Managing, Protecting Modern Desktops and Devices</td>
<td>MD-101</td>
</tr>
<tr>
<td></td>
<td>Supporting and Troubleshooting Windows 10</td>
<td>M10982</td>
</tr>
<tr>
<td></td>
<td>Deploying Windows Desktops and Enterprise Applications</td>
<td>M20695</td>
</tr>
<tr>
<td></td>
<td>Installing and Configuring Windows 10</td>
<td>M20698</td>
</tr>
<tr>
<td></td>
<td>Installation, Storage, and Compute with Windows Server 2016</td>
<td>M20740</td>
</tr>
<tr>
<td></td>
<td>Networking with Windows Server 2016</td>
<td>M20741</td>
</tr>
<tr>
<td></td>
<td>Identity with Windows Server 2016</td>
<td>M20742</td>
</tr>
<tr>
<td></td>
<td>Upgrading Your Skills to Windows Server 2016 MCSA</td>
<td>M20743</td>
</tr>
<tr>
<td></td>
<td>Securing Windows Server 2016</td>
<td>M20744</td>
</tr>
<tr>
<td></td>
<td>Implementing a Software Defined Datacenter</td>
<td>M20745</td>
</tr>
<tr>
<td></td>
<td>Managing Windows Environments with Group Policy</td>
<td>M50258</td>
</tr>
<tr>
<td>Other Cybersecurity</td>
<td>Securing the Virtual Environment</td>
<td>C1002</td>
</tr>
<tr>
<td></td>
<td>Cyber Security: Threat Analysis and Response Solutions</td>
<td>C1005</td>
</tr>
<tr>
<td></td>
<td>Incident Response</td>
<td>C1006</td>
</tr>
<tr>
<td></td>
<td>Network Intrusion Detection</td>
<td>C1007</td>
</tr>
<tr>
<td></td>
<td>SCADA - Supervisory Control and Data Acquisition Security</td>
<td>C1008</td>
</tr>
<tr>
<td></td>
<td>Securing Web Applications, Services, and Servers</td>
<td>C1009</td>
</tr>
<tr>
<td></td>
<td>Penetration Testing: Procedures &amp; Methodologies</td>
<td>C1010</td>
</tr>
<tr>
<td></td>
<td>Cyber Threat Counter-Exploitation</td>
<td>C1011</td>
</tr>
<tr>
<td></td>
<td>Python Security for Practitioners</td>
<td>C1012</td>
</tr>
<tr>
<td></td>
<td>Securing VoIP Networks</td>
<td>C1013</td>
</tr>
<tr>
<td></td>
<td>Virtualization Essentials Professional (VEP)</td>
<td>C1014</td>
</tr>
<tr>
<td>Project Management</td>
<td>PMI Risk Management Professional (PMI-RMP)</td>
<td>P1001</td>
</tr>
<tr>
<td></td>
<td>Certified Associate in Project Management (CAPM)</td>
<td>P1002</td>
</tr>
<tr>
<td></td>
<td>PMI Agile Certified Practitioner</td>
<td>P1003</td>
</tr>
<tr>
<td></td>
<td>Project Management Professional (PMP)</td>
<td>P1004</td>
</tr>
<tr>
<td></td>
<td>Project Management for IT Professionals</td>
<td>P1005</td>
</tr>
<tr>
<td>Red Hat</td>
<td>Red Hat® Enterprise Performance Tuning (RH442)</td>
<td>RH1001</td>
</tr>
<tr>
<td></td>
<td>Red Hat® Enterprise Virtualization (RH318)</td>
<td>RH1002</td>
</tr>
<tr>
<td></td>
<td>Red Hat® JBoss A-MQ Development and Deployment (JB437)</td>
<td>RH1003</td>
</tr>
<tr>
<td></td>
<td>Red Hat® JBoss Application Administration I (JB248)</td>
<td>RH1004</td>
</tr>
<tr>
<td></td>
<td>Red Hat® JBoss Application Administration II (JB348)</td>
<td>RH1005</td>
</tr>
<tr>
<td></td>
<td>Red Hat® OpenStack Administration (CL210)</td>
<td>RH1006</td>
</tr>
<tr>
<td></td>
<td>Red Hat® Server Hardening (RH413)</td>
<td>RH1007</td>
</tr>
<tr>
<td></td>
<td>Red Hat® System Administration I (RH124)</td>
<td>RH1008</td>
</tr>
<tr>
<td></td>
<td>Red Hat® System Administration II (RH134)</td>
<td>RH1009</td>
</tr>
<tr>
<td></td>
<td>Red Hat® System Administration III (RH254)</td>
<td>RH1010</td>
</tr>
<tr>
<td></td>
<td>RHCE Rapid Track (RH299) Course</td>
<td>RH1011</td>
</tr>
<tr>
<td></td>
<td>RHCSA Rapid Track (RH199) Course</td>
<td>RH1012</td>
</tr>
<tr>
<td>Wireless</td>
<td>Certified Wireless Network Administrator (CWNA)</td>
<td>W1001</td>
</tr>
<tr>
<td></td>
<td>Certified Wireless Security Professional (CWSP)</td>
<td>W1002</td>
</tr>
<tr>
<td></td>
<td>Certified Wireless Technology Specialist (CWTS)</td>
<td>W1003</td>
</tr>
<tr>
<td></td>
<td>Certified Wireless Analysis Professional (CWAP)</td>
<td>W1004</td>
</tr>
</tbody>
</table>
Cyber World Institute SIN 611420 Instructor Led Course Descriptions

Course Name: AWS Solutions Architect -Associate  
Course Number: A1001  
Course Description: In this course, you will learn all the essential skills to architect your IT solutions on AWS. Gain in-depth knowledge of the AWS platform and how to leverage AWS services for your specific cloud-based application. This 3-day, hands-on training provides current AWS cloud best practices and AWS architecture principles covering the entire process of designing IT infrastructure from beginning to end. Since AWS introduces an average of 200 new features and services annually, it is critical that you study the most recent innovations. To reinforce this material, you will also explore case studies with a variety of AWS infrastructure designs and strategies. After the course, you will be fully equipped to build and scale a more efficient and reliable IT solution on the AWS cloud environment.  
Course Length: 3 Days  
Students/class-Min 6; Max 25  
Class Schedules: As agreed to between ordering agency and CWI  
Class Location: Client site or CWI provided site

Course Name: AWS Developer - Associate  
Course Number: A1002  
Course Description: In this course, you will learn how to use the AWS SDK for developing secure and scalable cloud applications. The course provides in-depth knowledge about how to interact with AWS using code and covers key concepts, best practices, and troubleshooting tips.  
Course Length: 3 Days  
Students/class-Min 6; Max 25  
Class Schedules: As agreed to between ordering agency and CWI  
Class Location: Client site or CWI provided site

Course Name: AWS Certified SysOps Administrator-Associate  
Course Number: A1003  
Course Description: In this 3-day System Operations on AWS course, you will learn how to configure, deploy, and manage operations on the AWS platform. Through live labs and hands-on exercises, you'll build upon your existing knowledge of systems administration, cloud computing, and networking protocols such as TCP/IP or HTTP. This course focuses on common industry techniques and best practices used by AWS system administrators to help you utilize standard AWS infrastructure features such as Amazon Virtual Private Cloud (Amazon VPC), Amazon Elastic Compute Cloud (Amazon EC2), Elastic Load Balancing (ELB), and AWS Auto Scaling from the command line.  
Course Length: 3 Days  
Students/class-Min 6; Max 25  
Class Schedules: As agreed to between ordering agency and CWI  
Class Location: Client site or CWI provided site

Course Name: AWS Solutions Architect - Professional  
Course Number: A1004  
Course Description: Building on concepts introduced in Architecting on AWS, Advanced Architecting on AWS is intended for individuals who are experienced with designing scalable and elastic applications on the AWS platform. In this course, you will cover how to build complex solutions that incorporate data services, governance, and security on AWS. You will get an introduction to specialized AWS services, including AWS Direct Connect and AWS Storage.
Gateway to support hybrid architecture. You will also cover designing best practices for building scalable, elastic, secure, and highly available applications on AWS.

Course Length: 3 Days

Students/class-Min 6; Max 25

Class Schedules: As agreed to between ordering agency and CWI

Class Location: Client site or CWI provided site

---

**Course Name:** AWS DevOps Engineer  
**Course Number:** A1005  
**Course Description:** In this course, you will learn how to use the most common DevOps patterns to develop, deploy, and maintain applications on AWS. You will learn about the core principles of the DevOps methodology and examine a number of use cases applicable to startup, small-medium business, and enterprise development scenarios.

Course Length: 3 Days

Students/class-Min 6; Max 25

Class Schedules: As agreed to between ordering agency and CWI

Class Location: Client site or CWI provided site

---

**Course Name:** Configuring CISCO Routers for Network Security  
**Course Number:** C1001  
**Course Description:** This training goes into the knowledge for securing Cisco networks and routers. Students learn about developing security infrastructures, identifying network threats and vulnerabilities, and mitigating security risks. The material concentrates Cisco IOS routers for network protection with a perimeter router, firewall, intrusion prevention system, and site-to-site VPN device. Other course topics include using Cisco Catalyst for network security, Cisco ACS, and Cisco ASA.

Course Length: 5 Days

Prerequisites: Computer Knowledge

Students/class-Min 6; Max 25

Class Schedules: As agreed to between ordering agency and CWI

Class Location: Client site or CWI provided site

---

**Course Name:** Securing the Virtual Environment  
**Course Number:** C1002  
**Course Description:** This instructor-led training experience covers and examines the difference in a virtual model versus traditional computing models and the appropriate technology and procedures to defend it from attack. This course also covers information security in virtual environments: building a virtual attack lab, finding leaks, getting a side-channel, and denying or compromising services.

Course Length: 5 Days

Prerequisites: Computer Knowledge

Students/class-Min 6; Max 25

Class Schedules: As agreed to between ordering agency and CWI

Class Location: Client site or CWI provided site

---

**Course Name:** Securing SharePoint  
**Course Number:** C1003  
**Course Description:** This training focuses on the implementation and management of all security features for Microsoft SharePoint 2013. The course dives into SharePoint administration and other topics such as SharePoint Server deployment, protecting SharePoint with advanced security solutions, implementing and
testing SharePoint security, configuring email-enabled content, site mailboxes, Exchange server integration, and protecting confidential data.

Course Length: 5 Days
Prerequisites: Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Security in an IPv6 Environment
Course Number: C1004
Course Description: This IPv6 training course is available both online and in-person. The four-day instructor-led course examines the types of vulnerabilities, considerations, mechanisms, and survey approaches for ensuring reliable and controlled IPv6 migration. Course topics include features, security issues, and potential exploitation of the IPv6 protocol.
Course Length: 4 Days
Prerequisites: Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Cyber Security: Threat Analysis and Response Solutions
Course Number: C1005
Course Description: This four-day instructor-led training experience covers the following topics in depth, threat identification, insider threat prevention, detection and mitigation, assessment of security assurance, information terrorism, information security management standards, public policy drivers, the role of information security professionals and much more. This course takes a holistic approach to cyber security and information assurance by treating both the technical as well as managerial sides of the field.
Course Length: 4 Days
Prerequisites: Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Incident Response
Course Number: C1006
Course Description: This four-day instructor-led training experience covers network intrusion detection completely by covering topics such as, detect evaluation, analysis, situation handling, theories involved in understanding hackers, intelligence gathering, coordinated attacks and preventive and aggressive security measures. This is an ideal course for the serious analyst, this course will put students in full control of their network’s security.
Course Length: 4 Days
Prerequisites: Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Network Intrusion Detection

Document Date: May 15, 2020: MAS Solicitation #47QSMR20R0001
**Course Number: C1007**

Course Description: Through lecture and hands-on exercises, the Network Intrusion Detection course covers the topic completely. Lessons address detection evaluation, analysis and situation handling. Theories involved in understanding hackers, intelligence gathering and coordinated attacks are also discussed. Finally, students look into an arsenal of preventative and aggressive security measures.

This training is most ideal for security analysts, as this course will put students in full control of their network’s security.

Course Length: 4 Days
Prerequisites: Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

---

**Course Name: SCADA - Supervisory Control and Data Acquisition Security**

**Course Number: C1008**

Course Description: The U.S. process control networks such as SCADA and DCS that control critical infrastructures are constantly under attack. This course dives into the critical knowledge and skills for IT security professionals to effectively protect SCADA systems from cyber-attacks.

Course Length: 5 Days
Prerequisites: Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

---

**Course Name: Securing Web Applications, Services, and Servers**

**Course Number: C1009**

Course Description: This comprehensive course delves into the world of web security and privacy. It offers in-depth coverage of security theory, technology, and practice as they relate to established web technologies as well as recent advances. Through lecture and interactive exercises, the course explores practical solutions to many security issues.

Course Length: 4 Days
Prerequisites: Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

---

**Course Name: Penetration Testing: Procedures & Methodologies**

**Course Number: C1010**

Course Description: This course is designed to expose students to groundbreaking methodologies in conducting thorough information security analysis, as well as advanced penetration testing techniques. Through expert lecture and interactive exercises, students will be able to perform the intensive assessments required to effectively identify and mitigate risks to the security of the organization’s infrastructure.

This course covers the following penetration testing topics in depth: methodologies, legal aspects, planning and scheduling, external and internal penetration testing, firewall and ids penetration testing as well as penetration
testing of laptops, PDA’s, cellphones, e-mail, and security patches.
Course Length: 4 Days
Prerequisites: Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Cyber Threat Counter–Exploitation
Course Number: C1011
Course Description: An expert instructor will use tested security techniques and real-world case studies to teach students how to expose, pursue, and prosecute the perpetrators of advanced persistent threats (APTs). Upon completion of this course students will know how to assess a network’s vulnerabilities, zero in on targets, and effectively block intruders. Students will discover how to set up digital traps, misdirect and divert attackers, configure honeypots, mitigate encrypted crimeware, and identify malicious software groups. The course also provides full coverage of legal and ethical issues, operational vetting, and security team management.
Course Length: 4 Days
Prerequisites: Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Python Security for Practitioners
Course Number: C1012
Course Description: This course teaches students how to move from a theoretical understanding of offensive computing concepts to a practical implementation. Instead of relying on another attacker’s tools, this course will teach students to create their own security defense using the Python programming language. This course demonstrates how to write code to intercept and analyze network traffic using Python, craft and spoof wireless frames to attack wireless and Bluetooth devices, and how-to data-mine popular social media websites and evade modern anti-virus.
Course Length: 4 Days
Prerequisites: Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Defending against Social Engineering Attacks
Course Number: C1013
Course Description: The three-day instructor-led training experience explores various aspects of social engineering including elicitation, pretexting, influence, and manipulation. The instructor applies real world examples to illustrate the effectiveness of social engineering and defending against those attacks.
Course Length: 3 Days
Prerequisites: Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Virtualization Essentials Professional

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
**Course Name:** CompTIA Advanced Security Practitioner (CASP)  
**Course Number:** C1015  
Course Description: This CompTIA training is available both online and in-person. The five-day instructor-led course provides stresses the importance of critical thinking and judgment across a wide array of security disciplines to propose and implement the best enterprise solutions. The course prepares individuals for the CASP certification exam.  
Course Length: 5 Days  
Prerequisites: Security+  
Students/class-Min 6; Max 25  
Class Schedules: As agreed to between ordering agency and CWI  
Class Location: Client site or CWI provided site

---

**Course Name:** Certified Incident Handler (ECIH)  
**Course Number:** C1016  
Course Description: The ECIH training course is available in both an online and in-person format. This 2-day training course is designed to provide the fundamental skills needed to handle and respond to computer security incidents. In addition, students will be led through all the ECIH exam objectives so that they are properly prepared to handle the ECIH certification exam.  
Course Length: 5 Days  
Prerequisites: Basic Computer Skills  
Students/class-Min 6; Max 25  
Class Schedules: As agreed to between ordering agency and CWI  
Class Location: Client site or CWI provided site

---

**Course Name:** Disaster Recovery Professional (EDRP)  
**Course Number:** C1017  
Course Description: Candidates for the EDRP training course can elect to take this course either in-person or through our live virtual classroom. The 5-day EDRP training experience provides students with the tools and techniques needed to effectively identify vulnerabilities and responds appropriately to prevent and mitigate an organization’s risk. Networking professionals will also walk away with a strong foundation of disaster recovery principles and will be able to craft an effective plan for recovery and business continuity in the event that their organization faces a natural or man- made disaster.  
Course Length: 5 Days  
Prerequisites: Basic Computer Skills  
Students/class-Min 6; Max 25  
Class Schedules: As agreed to between ordering agency and CWI  
Class Location: Client site or CWI provided site

---

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
Course Name: Certified in Risk and Information Systems Control (CRISC)
Course Number: C1018
Course Description: The CRISC training course is available in both an online and in-person format. This 3-day training course is designed to provide the necessary knowledge and skills to properly understand, mitigate and manage risk within an organization. In addition, students will be led through all the exam objectives so that they are properly prepared to handle the CRISC certification exam at the end of the 3-day course.
Course Length: 3 Days
Prerequisites: Basic Computer Skills
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Certified Authorization Professional (CAP®)
Course Number: C1019
Course Description: The CAP® (Certified Authorization Professional) certification from (ISC)²® is a very objective measure of the skills, abilities and knowledge required for all persons involved in the overall process of maintaining and authorizing information systems. This credential specifically applies to those who are responsible for formalizing processes that are used to establish security requirements and documentation as well to assess risk. The decisions made by these individuals will help to ensure that information systems possess proper security commensurate with the correct level of exposure to any potential risks, as well as damage to individuals or assets. Security authorization includes a risk management approach that is tiered in such a way as to evaluate both the strategic and tactical risk across an enterprise. Incorporated in the authorization process is the application of an RMF, or Risk Management Framework, a general review of the organizational structure, and the business mission/process as the basis for the assessment and implementation of specified security controls. This particular authorization management process helps to identify security controls and vulnerabilities as well as determines residual risks. These residual risks are then evaluated and deemed to be either acceptable or unacceptable. To reduce unacceptable risk, more controls must be implemented. This type of system may only be deployed when the residual risks are deemed acceptable to the enterprise as a whole and the associated security plan is satisfactory and complete.
Course Length: 3 Day(s)
Prerequisites: Basic Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Risk Management Framework (RMF)
Course Number: C1020
Course Description: Risk Management Framework (RMF) is the unified information security framework for the entire federal government that is replacing the legacy Certification and Accreditation (C&A) processes within federal government departments and agencies, the Department of Defense (DOD) and the Intelligence Community (IC). DoD officially began its transition from the legacy DIACAP process to the new “RMF for DoD IT” process.
Course Length: 4 Days
Prerequisites: No prerequisites
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Document Date: May 15, 2020: MAS Solicitation #47QSMR20R0001
**Course Name:** Certified Ethical Hacker (CEH)  
**Course Number:** C1021  
Course Description: During our 5-day EC-Council Certified Ethical Hacker Certification (CEHv7) course at CWI, students will learn to look for the vulnerabilities and weaknesses in different target systems using the same knowledge and tools as a hacker.  
Course Length: 5 Day(s)  
Prerequisites: Experience in the Computer Security field is strongly recommended  
Students/class-Min 6; Max 25  
Class Schedules: As agreed to between ordering agency and CWI  
Class Location: Client site or CWI provided site

**Course Name:** Computer Hacking Forensic Investigator (CHFI)  
**Course Number:** C1022  
Course Description: The Computer Hacking Forensic Investigator course gives students the skills that they need to locate the online footprints of computer perpetrators. Forensic investigators can benefit from this course by learning how to effectively gather evidence to prosecute offenders. You will learn the latest information about forensic software, hardware and how to apply specialized forensic techniques.  
Course Length: 5 Day(s)  
Prerequisites: CEH certification is recommended  
Students/class-Min 6; Max 25  
Class Schedules: As agreed to between ordering agency and CWI  
Class Location: Client site or CWI provided site

**Course Name:** ECSA/LPT  
**Course Number:** C1023  
Course Description: The course explores the analytical phase of ethical hacking. Through it, you will learn about the skills and tools needed to identify and correct security flaws in network infrastructure.  
Course Length: 5 Day(s)  
Prerequisites: CEH certification is recommended  
Students/class-Min 6; Max 25  
Class Schedules: As agreed to between ordering agency and CWI  
Class Location: Client site or CWI provided site

**Course Name:** Certified Information Security Manager (CISM)  
**Course Number:** C1024  
Course Description: CWI CISM course provides a common body of knowledge for information security management. The focus of this course is on information risk management as the basis of information security. Additionally, material on broader issues is included such as how to govern information security as well as information on practical issues such as developing and managing an information security program and how to respond when incidents arise.  
Course Length: 5 Day(s)  
Prerequisites: At least one year of IT Management experience  
Students/class-Min 6; Max 25  
Class Schedules: As agreed to between ordering agency and CWI  
Class Location: Client site or CWI provided site
Course Name: Certified Information Systems Auditor (CISA)
Course Number: C1025
Course Description: CISA course covers topics such as IS audit process, IT Governance, Systems and infrastructure life-cycle management, IT service delivery and support, protection of information assets, business continuity and disaster recovery.
Course Length: 5 Day(s)
Prerequisites: A minimum of one year of information systems experience OR one year of financial or operational auditing experience
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI Class
Class Location: Client site or CWI provided site

Course Name: Certified Information Systems Security Professional (CISSP)
Course Number: C1026
Course Description: CWI 5-day CISSP course prepares you to pass the premier security certification, the Certified Information Systems Security Professional (CISSP). This course focuses on ten areas of discipline determined by (ISC)². Professionals who complete this course will have a good working knowledge of the ten domains of knowledge of CISSP.
Course Length: 5 Day(s)
Prerequisites: Having in field of computer Security is recommended
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Certified Cloud Security Professional (CCSP)
Course Number: C1027
Course Description: This five-day instructor-led training highlights the security and policy requirements for cloud computing as well as the necessary skills for implementing cloud networks. With the growing popularity and migration to cloud computing environments, the demand for knowledgeable and experienced cloud IT professionals increases constantly.
Course Length: 5 Day(s)
Prerequisites: Having in field of computer Security is recommended
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: CompTIA PenTest+
Course Number: C1028
Course Description: CSSLP certification training is a five-day course for software pros that teaches how to incorporate the appropriate security measures into any software language.
Course Length: 5 Day(s)
Prerequisites: Having in field of computer Security is recommended
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Systems Security Certified Practitioner (SSCP)
**Course Number: C1029**
Course Description: In this three-day SSCP course prepares candidates for certification that ensures they have the skills to be successful in the roles of an IT security professional.
Course Length: 3 Day(s)
Prerequisites: Having in field of computer Security is recommended
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

**Course Name: CompTIA CySA+**
**Course Number: C1030**
Course Description: CySA+ is a five-day instructor-led course designed to equip cyber analysts with the knowledge and skills needed to secure an organization's applications & systems.
Course Length: 5 Day(s)
Prerequisites: Having in field of computer Security is recommended
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

**Course Name: EC Council Certified Secure Programmers (ECSP)**
**Course Number: C1042**
Course Description: Prevalent software bugs, flaws and defects require more aware and attentive software programmers who understand and adhere to secure coding practices. In this five-day course, the instructor addresses the best secure coding practices for .NET and Java professional programmers who are responsible for designing and developing applications and additional software. These best practices lend programmers an advantage building software programs with security in mind.
Course Length: 5 Day(s)
Prerequisites: Having in field of computer Security is recommended
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

**Course Name: Certified Network Defender (CND)**
**Course Number: C1042**
Course Description: This five-day CND - Certified Network Defender Certification course covers how to protect, detect and respond to the network attacks. You will learn network defense fundamentals, the application of network security controls, protocols, perimeter appliances, secure IDS, VPN and firewall configuration. You will then learn the intricacies of network traffic signature, analysis and vulnerability scanning which will help you when you design greater network security policies and successful incident response plans.
Course Length: 5 Day(s)
Prerequisites: Having in field of computer Security is recommended
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

**Course Name: CompTIA Cloud+ Certification**
**Course Number: CL1001**
Course Description: This CompTIA training is available both online and in-person. The five-day instructor-led course provides you with a complete Cloud certification exam preparation and real-world skill building

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
opportunities through hands-on exercises and lectures. This certification verifies an IT professional’s knowledge and skills in securely implementing and managing cloud infrastructures.

Course Length: 5 Days
Prerequisites: A+
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI Class
Location: Client site or CWI provided site

Course Name: CompTIA Cloud Essentials
Course Number: CL1002
Course Description: The CompTIA Cloud Essentials training is available online and in-person. The two-day instructor-led course focuses on the implementation and management of cloud environments. Once achieved the certification demonstrates an individual’s knowledge and skills from a business and technical perspective.

Course Length: 2 Days
Prerequisites: Basic Computer Skills
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Certified Chief Information Security Officer Certification (C|CISO)
Course Number: E2001
Background:
EC-Council’s C|CISO Program has certified leading information security professionals around the world. A core group of high-level information security executives, the C|CISO Advisory Board, contributed by forming the foundation of the program and outlining the content that would be covered by the exam, body of knowledge, and training. Some members of the Board contributed as authors, others as exam writers, others as quality assurance checks, and still others as trainers. Each segment of the program was developed with the aspiring CISO in mind and looks to transfer the knowledge of seasoned professionals to the next generation in the areas that are most critical in the development and maintenance of a successful information security program.

The C|CISO program is the first of its kind training and certification program aimed at producing top-level information security executives. The C|CISO does not focus solely on technical knowledge but on the application of information security management principles from an executive management point of view. The program was developed by sitting CISOs for current and aspiring CISOs.

Course description:
C|CISO is the first of its kind certification that recognizes an individual’s accumulated skills in developing and executing an information security management strategy in alignment with organizational goals. C|CISO equips information security leaders with the most effective toolset to defend organizations from cyber-attacks.

To rise to the role of the CISO, strong technical knowledge, and experience is more imperative now than ever before, but it must be accompanied by the ability to communicate in business value. C|CISOs understand that their information security decisions often have a direct impact on their organization’s operational cost, efficiency, and agility. As organizations introduce new technologies, C|CISOs will develop and communicate a strategy to avoid the potential risks stemming from their implementation to the organization’s operations.

C|CISOs are certified in the knowledge of and experience in the following C|CISO Domains:
1. Governance and Risk Management (Policy, Legal, and Compliance)
2. Information Security Controls, Compliance, and Audit Management

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
3. Security Program Management & Operations
4. Information Security Core Competencies
5. Strategic Planning, Finance, Procurement, and Vendor Management

**C|CISO application and exam:**

The application fee for the eligibility application is $100. Once approved, the voucher for the exam can be purchased for $999. Instructions on where and how to purchase the exam voucher will be sent to you once you are approved.

**Qualifications to sit for the CCISO exam:**

To be approved to take the C|CISO exam without first taking certified training, you will need to show evidence and present verifiers to show that you have 5 years of experience in each of the five C|CISO domains. Experience waivers are available for some industry-accepted certifications and C|CISO Exam Eligibility Application Form higher education. Experience Waivers are granted in certain domains in the case of industry accepted, professional certifications and higher degrees in information security. Between certification and training waivers, applicants can only waive 3 years of experience for each domain. If you have taken training, you must show 5 years of experience in 3 of the 5 domains in order to take the C|CISO exam.

Course Length: 5 days
Prerequisites: See above
Students/class: Min 6; Max 20
Class Schedule: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

---

**Course Name: Installing, Deploying, Configuring, Protecting, Supporting and Maintaining Windows 10**

**Course Number: MD-100**

Course Description: You will learn how to support the installation tasks associated with Windows 10. Students will develop skills that include learning how to install and customize Windows 10 operating systems and new Windows servicing model and methods for keeping Windows up to date. Discover how to support the configuration tasks associated with Windows 10. You'll also develop skills that include managing storage, files, drivers, and printers as well as how to configure network connectivity for Windows 10. This course will also cover managing and deploying applications. Learn to secure the Windows 10 OS and protect the data on the device. Students will be introduced to common methods used for authentication and access control. This course will teach how to configure file and folder permissions and creating security policies. Students will also be introduced to the different types of external threats and how to leverage features like encryption and firewalls, as well as tools like Windows Defender. You'll also learn how to manage and troubleshoot Windows 10. This course will deep-dive into the architecture and tools used for managing, monitoring, and troubleshooting the OS, Apps, and hardware. Students will learn about proactive and troubleshooting methodology, and how to identify and mitigate common issues.

Course Length: 5 Days
Prerequisites: A basic understanding of networking fundamentals
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

---

**Course Name: Deploying, Managing, Protecting Modern Desktops and Devices**

**Course Number: MD-101**

Course Description: In this course, you'll learn to plan and implement an operating system deployment strategy. This course will help you understand the various methods available, the scenarios they're suited for, as well as how to deploy Windows using modern methods. This course will also cover planning and implementing an update strategy for Windows. You will be introduced to key components of modern management and co-management strategies. You'll examine what it takes to incorporate Microsoft Intune into your organization and how to use it to manage...
modern desktops and devices. You’ll also learn about methods for deployment and management of apps and browser-based applications. You will also be introduced to the key concepts of security in modern management. This course covers authentication, identities, and access, as well as about how to protect these categories. The student will be introduced to Azure Active Directory and learn how to use Microsoft Intune to protect devices and data with compliance policies. Finally, this course will cover key capabilities of Azure Information Protection and Windows Defender Advanced Threat Protection and how to implement these capabilities.

Course Length: 5 Days
Prerequisites: A basic understanding of networking fundamentals
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Supporting and Troubleshooting Windows 10
Course Number: M10982
Course Description: This course is designed to provide students with the knowledge and skills required to support and troubleshoot Windows 10 PCs and devices in a Windows Server domain environment. These skills include understanding of Windows 10 features, how they can be used in an Active Directory environment and how to troubleshoot them..
Course Length: 5 Days
Prerequisites: A basic understanding of networking fundamentals
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Deploying Windows Desktops and Enterprise Applications
Course Number: M20695
Course Description: This course is intended for IT professionals who deploy, manage, and maintain PCs, devices, and applications across medium-sized, large, or enterprise organizations. Typically, this audience comes from a desktop support background and progresses to the role of Enterprise Desktop Administrator. A significant portion of this audience uses or intends to use Microsoft System Center Configuration Manager (Configuration Manager) to manage and deploy PCs, devices, and enterprise applications. The Enterprise Desktop Administrator might also use toolsets such as the Windows Assessment and Deployment Kit (Windows ADK), and the Microsoft Deployment Toolkit (MDT) to support assessment, operating system, and application deployment tasks.
Course Length: 5 Days
Prerequisites: You must have system administrator-level working knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Installing and Configuring Windows 10
Course Number: M20698
Course Description: In this course, you will learn how to install and configure Windows 10 desktops in a Windows Server small to medium-sized AD DS domain environment. These skills include learning how to install and customize apps, configure local and remote network connectivity, and configure local and online storage. You also will learn how to configure security in addition to how to maintain, update, and recover Windows 10..
Course Length: 5 Days
Prerequisites: Experience deploying and configuring Windows Server 2012 or Windows Server 2016 Active Directory Domain Services (AD DS).
Students/class-Min 6; Max 25  
Class Schedules: As agreed to between ordering agency and CWI  
Class Location: Client site or CWI provided site

**Course Name:** Installation, Storage, and Compute with Windows Server 2016  
**Course Number:** M20740  
Course Description: This course is designed primarily for IT professionals who have some experience with Windows Server. It is designed for professionals who will be responsible for managing storage and compute by using Windows Server 2016, and who need to understand the scenarios, requirements, and storage and compute options that are available and applicable to Windows Server 2016.  
Course Length: 5 Days  
Prerequisites: A basic understanding of networking fundamentals  
Students/class-Min 6; Max 25  
Class Schedules: As agreed to between ordering agency and CWI  
Class Location: Client site or CWI provided site

**Course Name:** Networking with Windows Server 2016  
**Course Number:** M20741  
Course Description: In this course, you will learn the fundamental networking skills required to deploy and support Windows Server 2016 in most organizations. You will review IP fundamentals, remote access technologies, and more advanced content including software-defined networking (SDN).  
Course Length: 5 Days  
Prerequisites: Experience working with Windows Server 2008 or Windows Server 2012  
Students/class-Min 6; Max 25  
Class Schedules: As agreed to between ordering agency and CWI  
Class Location: Client site or CWI provided site

**Course Name:** Identity with Windows Server 2016  
**Course Number:** M20742  
Course Description: In this course, you will learn how to deploy and configure Active Directory Domain Services (AD DS) in a distributed environment. Additionally, you will learn how to implement Group Policy, perform backup and restore, as well as monitor and troubleshoot AD-related issues with Windows Server 2016. This course teaches you how to deploy other AD server roles such as Active Directory Federation Services (AD FS) and Active Directory Certificate Services (AD CS).  
Course Length: 5 Days  
Prerequisites: Experience working with and configuring Windows Server 2012 or Windows Server 2016  
Students/class-Min 6; Max 25  
Class Schedules: As agreed to between ordering agency and CWI  
Class Location: Client site or CWI provided site

**Course Name:** Upgrading Your Skills to Windows Server 2016 MCSA  
**Course Number:** M20743  
Course Description: In this course, you will learn how to implement and configure new features and functionality in Windows Server 2016. This course is designed for IT professionals who want to upgrade their technical skills from Windows Server 2008 or Windows Server 2012 to Windows Server 2016.  
Course Length: 5 Days  
Prerequisites: At least two years of experience in deploying and managing Windows Server 2012 or Windows 2008 environments

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
Course Name: Securing Windows Server 2016
Course Number: M20744
Course Description: In this course, you will learn how to enhance the security of the IT infrastructure that you administer. This course begins by emphasizing the importance of assuming that network breaches have occurred already and then teaches you how to protect administrative credentials and rights to ensure that administrators can perform the precise tasks they need at any time, when they need to.

You will learn how to mitigate malware threats, identify security issues by using auditing and the Advanced Threat Analysis feature in Windows Server 2016, secure your virtualization platform, and use new deployment options (such as Nano server and containers) to enhance security.

Course Length: 5 Days
Prerequisites: Completed courses 740, 741, and 742, or the equivalent.

Course Name: Implementing a Software Defined Datacenter
Course Number: M20745
Course Description: In this course, you will discover how to implement and manage virtualization infrastructure in a software-defined datacenter by using System Center 2016 Virtual Machine Manager. The course also describes how to monitor the infrastructure by using System Center Operations Manager and protect it by using Data Protection Manager. Course Length: 5 Days
Prerequisites: Familiarity with different types of virtualizations

Course Name: Managing Windows Environments with Group Policy
Course Number: M502585
Course Description: In this course you will learn how to reduce costs and increase efficiencies in your network. You will discover how to consolidate the administration of an enterprise IT infrastructure with Group Policy, and you will learn to control and manage computer systems and domain users running Windows Server and Windows clients. Create Group Policies, implement administrative and security templates, and determine best practices when deploying software packages. Walk away with the experience and tools needed to optimize your enterprise systems and networks.

Course Length: 5 Days
Prerequisites: Familiarity with different types of virtualizations

Course Name: CompTIA IT Fundamental (ITF+)
Course Number: N1000
Course Description: In this course, students will identify PC components, work with files and folders, and conduct basic software installations. This course will provide students with the fundamental skills and concepts required to maintain, support, and work efficiently with personal computers.

In addition, it covers the essential skills and information needed to set up, configure, maintain, troubleshoot, and perform preventative maintenance of the hardware and software components of a basic personal computer workstation and basic wireless devices. Students will also implement basic security measures and implement basic computer and user support practices.

Course Length: 5 Days
Prerequisites: None
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: CompTIA A+
Course Number: N1001
Course Description: CWI five-day CompTIA A+ course provides students with the best possible knowledge base for taking the A+ certification exam. The CWI A+ course involves hands on training, which expands the student’s perspective and knowledge on a computer’s hardware and their operating systems (DOS / Windows 9x, 2000 and XP). Upon completing this course, students will have the background they need to comprehend the basic fundamentals of PC technology, PC networking, and PC security. They will also possess the aptitude that is required to identify computer hardware, as well as peripheral, networking, and lastly, security components.

Course Length: 5 Day(s)
Prerequisites: Basic Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: CompTIA Network+
Course Number: N1002
Course Description: CWI 5-day CompTIA Network+ Boot Camp provides students the most complete preparation for the Network+ certification exam. This is an accelerated approach to learning which meets the demands of IT professionals who seek effective skill-building as it applies to the real world. Students graduate with the skills and knowledge required to handle installation, management and troubleshooting on various of networks living on platforms of any type. At the end of the training students will be ready to take their CompTIA Network+ Certification exam.

Course Length: 5 Day(s)
Prerequisites: Basic Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: CompTIA Security+
Course Number: N1003
Course Description: CWI 5-day CompTIA Security+ Boot Camp provides students the most complete preparation for the Security+ certification exam. This effective accelerated learning arrangement is designed for the IT professional who demands real-world skill-building while gaining their certification.

Our Security+ training teaches students knowledge and skills needed to protect computers and networks from the theft or destruction of information or disruption of communication.

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
Course Length: 5 Day(s)
Prerequisites: Basic Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: CompTIA Server+
Course Number: N1004
Course Description: CompTIA Server+ awarded by CompTIA organization is a widely recognized certification in the area of server technologies. It certifies the technical knowledge and skills required to build, maintain, troubleshoot and support server hardware and software technologies.
Course Length: 5 Day(s)
Prerequisites: Basic Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI Class Location: Client site or CWI provided site

Course Name: CompTIA Linux+
Course Number: N1005
Course Description: CompTIA Linux+ Powered by LPI is a high-stakes, vendor-neutral certification that validates the fundamental knowledge and skills required of junior Linux administrators.
Course Length: 5 Day(s)
Prerequisites: Basic Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Interconnecting Cisco Networking Devices1 (ICND 1)
Course Number: N2001
Course Description: This course focuses on developing skills that will allow you to implement small switched and routed networks that consist of 1 to 20 hosts connected to a single switch. From being able to describe how networks work to being able to use command-line interfaces to discover neighbors and manage configurations, you will learn everything you need from the ground up.
Course Length: 3 Day(s)
Prerequisites: Basic Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Interconnecting Cisco Networking Devices 2 (ICND 2)
Course Number: N2002
Course Description: The purpose of this five-day course is to teach you the skills necessary to use Cisco Catalyst switches and routers that are connected to LANs and WANs in medium sized networks.
Course Length: 5 Day(s)
Prerequisites: Basic Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

**Course Name: Cisco Certified Network Associate (CCNA)**
**Course Number: N2003**
Course Description: This Cisco Certified Network Associate course gives students the skills and knowledge that they need to manage an entire network environment. Each course participant will learn how to properly install and operate a small to medium-size branch office. Students will be able to troubleshoot network problems and configure all of the parts of a network including switches and routers. These courses will also focus on implementing WAN connections and maintaining network security.
Course Length: 5 Day(s)
Prerequisites: Basic Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

**Course Name: CCNP: Implementing Cisco IP Routing (ROUTE)**
**Course Number: N2004**
Course Description: The ROUTE course is fit for network engineers who possess at least one year of work experience professionally and are prepared to advance their IT skills and work on complex network solutions independently. Students will learn how to plan, configure and verify the implementation of secure enterprise routing solutions (LAN and WAN) using a range of routing protocols. This course also features configurations which best support branch offices as well as mobile workers.
Course Length: 5 Day(s)
Prerequisites: At least one year of networking experience
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

**Course Name: CCNP: Implementing Cisco IP Switched Networks (SWITCH)**
**Course Number: N2005**
Course Description: SWITCH is also best for the network engineer with one year of work experience minimum who is ready to take the next step in terms of working independently on network solutions of a complex nature. Students will learn about planning, configuring and verifying the implementation of complicated enterprise switching set ups using Cisco’s Campus Enterprise Architecture. The course also includes secure integration of VLANs, WLANs, voice and video traffic into campus networks.
Course Length: 5 Day(s)
Prerequisites: At least one year of networking experience
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

**Course Name: CCNP: Troubleshooting and Maintaining Cisco IP Networks (TSHOOT)**
**Course Number: N2006**
Course Description: TSHOOT is again with the network engineer who has a year of work experience in mind. It advances IT professionals to a point where they will ultimately be able to work on high-end network solutions independently. Students will acquire knowledge which enables them to (1) perform standard maintenance on complicated enterprise routed as well as switched networks and (2) utilize technology-based practices in combination with a systematic ITIL-compliant approach to execute network troubleshooting. Hands-
on learning and reinforcement of troubleshooting skills is provided in extensive labs.
Course Length: 5 Day(s)
Prerequisites: At least one year of networking experience
Students/class: Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site.

Course Name: ICOMM - Introducing Cisco Voice and Unified Communications Administration v8.1
Course Number: N2007
Course Description: The ICOMM training course is available in both an online and in-person format. This 5-day training course is part of the CCNA Voice and CCNA Video certification tracks. It is designed to provide the necessary knowledge and skills to maintain and operate a Cisco Unified Communications solution that is based on Cisco Unified Communications Manager, Cisco Unified Communications Manager Express, Cisco Unified Presence and Cisco Unity Connection.
Course Length: 5 Days
Prerequisites: Networking experience
Students/class: Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site.

Course Name: IUWNE - Implementing Cisco Unified Wireless Networking Essentials v2.0
Course Number: N2008
Course Description: The IUWNE training course is available in both an online and in-person format. This 5-day training course is designed to provide the necessary knowledge and skills to design, install, configure, monitor and troubleshoot the Cisco WLAN.
In addition, students will be led through all the exam objectives so that they are properly prepared to handle the CCNA Wireless certification exam at the end of the 5-day course.
Course Length: 5 Days
Prerequisites: Networking experience
Students/class: Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site.

Course Name: IINS - Implementing Cisco IOS Network Security v2.0
Course Number: N2009
Course Description: Formerly known as CCNA Security, the IINS training course is available in both an online and in-person format. This 5-day training course is designed to provide the necessary knowledge and skills to properly implement and monitor a comprehensive security policy.
In addition, students will be led through all the exam objectives so that they are properly prepared to handle the CCNA Security certification exam at the end of the 5-day course.
Course Length: 5 Days
Prerequisites: Networking experience
Students/class: Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site.

Course Name: DCUCI - Implementing Cisco Data Center Unified Computing v5.0
Course Number: N2010
Course Description: The DCUCI training course is available in both an online and in-person format. This 5-day training course is part of the CCNP Data Center certification and is designed to provide the fundamental knowledge and skills necessary to manage, maintain, troubleshoot and execute an effective virtualization implementation strategy.

In addition, students will be led through all the exam objectives so that they are properly prepared to handle the DCUCI exam at the end of the 5-day course.
Course Length: 5 Days
Prerequisites: CCNA
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Securing Cisco Networks with Threat Detection and Analysis (SCYBER)
Course Number: N2011
Course Description: This course is designed for IT professionals pursuing their Cyber Security Specialist Certification and can empower them with the knowledge that can translate into the skills to operate on a security analysis team. The training focuses on fundamental cyber security concepts and terminology, the functionality of network security operations centers (SOC), and the skills/tools for monitoring, analyzing and responding to network security threats.
Course Length: 5 Days Prerequisites: CCNA
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Introduction to Project Management
Course Number: P1000
Course Description: This course is designed for anybody interested in project management. Every competent project manager needs to know the various phases and project management software and tools available do the job properly. IT project management is process oriented, and tools such as the Gantt Chart help track project progress
Course Length: 3 Day(s)
Prerequisites: Basic Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: PMI Risk Management Professional (PMI-RMP)
Course Number: P1001
Course Description: Through expert lecture and class exercises, this course prepares the student to take on or improve the risk management specialist role on his or her organization’s project teams. In addition to preparing the student for the PMI-RMP certification exam, this course teaches basic project management skills and improves the student’s expertise in minimizing risk to employers.
Course Length: 3 Days Prerequisites: Project Management Experience
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
Course Name: Certified Associate in Project Management (CAPM)  
Course Number: P1002  
Course Description: The PMI training is the first step for professionals pursuing a career in project management. The introductory Project Management Institute (PMI) course supplies professionals with the recognized project management best practices to establish entry-level experience. Course topics include:  
- Providing subject matter expertise (finance, marketing, customer care, fulfillment, processing)  
- Serving as project team sponsors, liaisons, facilitators or coordinators  
Course Length: 5 Days  
Prerequisites: Project Management Experience  
Students/class: Min 6; Max 25  
Class Schedules: As agreed to between ordering agency and CWI  
Class Location: Client site or CWI provided site

Course Name: PMI Agile Certified Practitioner Course  
Course Number: P1003  
Course Description: The PMI-ACP certification verifies a practitioner’s ability to understand and apply Agile principles and practices. The instructor explains the best practices of Agile which is an iterative and incremental software development methodology that helps organizations to become more flexible and deliver workable software in a shorter span of time.  
Course Length: 3 Days  
Prerequisites: Project Management Experience  
Students/class: Min 6; Max 25  
Class Schedules: As agreed to between ordering agency and CWI  
Class Location: Client site or CWI provided site

Course Name: Project Management Professional (PMP)  
Course Number: P1004  
Course Description: The PMP certification solidifies current project management professional’s knowledge and skills. This is the most widely recognized and important certification for Project Managers who lead projects for small to enterprise-level businesses and organizations. PMP professionals benefit with more attractive resumes, higher salaries and other advantages.  
Course Length: 5 Days  
Prerequisites: Project Management Experience  
Students/class: Min 6; Max 25  
Class Schedules: As agreed to between ordering agency and CWI  
Class Location: Client site or CWI provided site

Course Name: Project Management for IT Professionals  
Course Number: P1005  
Course Description: This course is a guide to the best practices for managing large IT projects. The class starts with basic principles and develops guidelines for dealing with the increasing complexity of hardware and software. It includes coverage of why projects go wrong and the critical people and process issues that must be addressed by IT managers. Other topics covered include crises management, rapid application development, quality management, risk management, and the emerging role of the Internet.  
Course Length: 4 Day(s)  
Prerequisites: Basic Computer Knowledge
Students/class—Min 6; Max 25
Class Schedules: As agreed to between ordering agency and Phoenix TS Class
Location: Client site or Phoenix TS provided site

Course Name: Red Hat® Enterprise Performance Tuning (RH442)
Course Number: RH1001
Course Description: In this course, you will learn about system architecture with an emphasis on understanding the implications on system performance, methods for testing the effects of performance adjustments, open source benchmarking utilities, methods for analyzing system and networking performance, and tuning configurations for specific application loads.
This training prepares students for the Red Hat Certificate of Expertise in Performance Tuning exam (EX442).
Course Length: 4 Days
Prerequisites: Computer Knowledge
Students/class—Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Red Hat® Enterprise Virtualization (RH318)
Course Number: RH1002
Course Description: In Red Hat Enterprise Virtualization (RH318) experienced, RHCSA-level system administrators will receive extensive hands-on training in how to use the virtualization features of Red Hat Enterprise Linux as managed through the Red Hat Enterprise Virtualization (RHEV) suite. You will use RHEV to create and centrally manage highly available virtual systems in the enterprise in a massively scalable manner.
The course prepares students for the Red Hat Enterprise Virtualization Administrator (RHCVA) certification exam (EX318).
Course Length: 4 Days
Prerequisites: Computer Knowledge
Students/class—Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Red Hat® JBoss A-MQ Development and Deployment (JB437)
Course Number: RH1003
Course Description: This Red Hat course unearths the fundamental concepts associated with Java Message Service (JMS) and Apache ActiveMQ (A-MQ) for Java developers and architects.
Course Length: 2 Days
Prerequisites: Computer Knowledge
Students/class—Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Course Name: Red Hat® JBoss Application Administration I (JB248)
Course Number: RH1004
Course Description: In this course, you will learn the best practices for installing and configuring JBoss
Enterprise Application Platform (JBoss EAP 7). Through hands-on labs, you will learn the essential, real-world tasks that a system administrator needs to know to effectively deploy and manage applications on JBoss Enterprise Application Platform. The course prepares students for the Red Hat Certified JBoss Administration (RHCJA) exam (EX248).

Course Length: 5 Days
Prerequisites: Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

**Course Name: Red Hat® JBoss Application Administration II (JB348)**
**Course Number: RH1005**
Course Description: Red Hat JBoss Application Administration II (JB348) prepares students to provision and manage Red Hat® JBoss® Enterprise Application Platform (JBoss EAP) in large-scale production environments. Intended for experienced administrators, this course provides a deeper understanding of how to work with JBoss EAP by taking a closer look at installation, clustering, deployments, scripting, management, messaging, and security with a view towards building on the skills established in Red Hat JBoss Application Administration I (JB248).

Course Length: 5 Days
Prerequisites: Computer knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

**Course Name: Red Hat® OpenStack Administration (CL210)**
**Course Number: RH1006**
Course Description: Install, configure, and maintain Red Hat OpenStack Platform Red Hat® OpenStack® Administration II (CL210) teaches system administrators how to implement a cloud-computing environment using Red Hat OpenStack Platform, including installation, configuration, and maintenance. This course can also help you prepare for the Red Hat Certified System Administrator in Red Hat OpenStack exam (EX210).

Course Length: 5 Days
Prerequisites: Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

**Course Name: Red Hat® Server Hardening (RH413)**
**Course Number: RH1007**
Course Description: The Red Hat Server Hardening course supplies methods and approaches for security policy and configuration requirements and options for user authentication, applying updates, system auditing and logging, file system integrity and other factors.

The training prepares students for the Red Hat Certificate of Expertise in Server Hardening exam (EX413).

Course Length: 4 Days
Prerequisites: Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
**Course Name: Red Hat® System Administration I (RH124)**
**Course Number: RH1008**
Course Description: This five-day instructor-led training experience is geared towards IT professionals without previous Linux administration experience to introduce and prepare them for working with Red Hat Enterprise Linux 7 (RHEL7).

The course zones in on fundamental and “survival skills” essentials for professionals to perform Linux Sysadmin tasks and responsibilities. This training is the first of two courses that prepares students for the Red Hat Certified System Administrator (RHCSA) certification exam (EX200).

Course Length: 5 Days  
Prerequisites: Computer Knowledge  
Students/class-Min 6; Max 25  
Class Schedules: As agreed to between ordering agency and CWI  
Class Location: Client site or CWI provided site

---

**Course Name: Red Hat® System Administration II (RH134)**
**Course Number: RH1009**
Course Description: This course is for individuals who have completed Red Hat® System Administration I (RH124). It focuses on the key tasks needed to become a full-time administrator of Red Hat Enterprise Linux 8. Attending both Red Hat® System Administration I (RH124) and Red Hat® System Administration II (RH134) can help you in your preparation for the Red Hat Certified System Administrator Exam (EX200).

Course Length: 4 Days  
Prerequisites: Computer Knowledge  
Students/class-Min 6; Max 25  
Class Schedules: As agreed to between ordering agency and CWI  
Class Location: Client site or CWI provided site

---

**Course Name: Red Hat® System Administration III (RH254)**
**Course Number: RH1010**
Course Description: Red Hat System Administration III (RH254), related to Red Hat Enterprise Linux 7, is designed for experienced Linux system administrators who hold a Red Hat Certified System Administrator (RHCSA) certification or equivalent skills and who want to broaden their ability to administer Linux systems at an enterprise level.

The course is focused on deploying and managing network servers running caching Domain Name Service (DNS), MariaDB, Apache HTTPD, Postfix SMTP nullclients, network file sharing with Network File System (NFS) and Server Message Block (SMB), iSCSI initiators and targets, advanced networking and firewall configurations, and using Bash shell scripting to help automate, configure, and troubleshoot the system.

Course Length: 5 Days  
Prerequisites: Computer Knowledge  
Students/class-Min 6; Max 25  
Class Schedules: As agreed to between ordering agency and CWI  
Class Location: Client site or CWI provided site

---

**Course Name: RHCE Rapid Track (RH299)**
**Course Number: RH1010**
This course is for individuals seeking a hands-on, lab-based review prior to taking the Red Hat Certified Engineer (RHCE) exam. Individuals taking this course should have already completed their classroom training and simply be

---

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
preparing to take or retake the exam. During this course, you will work at your own pace through the complete set of labs from both the RHCSA [Red Hat Certified System Administrator] Rapid Track course (RH199) and Red Hat System Administration III (RH254).

This course includes a few instructor lectures designed to review key technologies such as systemd, firewalld, and IPv6. For the classroom and virtual classroom versions of this course, an instructor will be available throughout the week to assist you as you work through the labs. This version of the course does not include the Red Hat® Certified System Administrator (RHCSA) EX200 or the Red Hat® Certified Engineer (RHCE) EX300 exam.

Course Length: 5 Days
Prerequisites: Computer Knowledge
Students/class: Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

**Course Name: RHCSA Rapid Track (RH199)**
**Course Number: RH1012**
Course Description: The RHCSA Rapid Track course (RH199) combines the Red Hat System Administration I (RH124) and II (RH134) into one training accelerated training by addressing Linux system administration skills applicable to a Red Hat Enterprise Linux 8 environment.

Students have the option to purchase the RHCSA Rapid Track course (RH200) with the RHCSA exam (EX200).
Course Length: 4 Days
Prerequisites: Computer Knowledge
Students/class: Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI Class
Location: Client site or CWI provided site

**Course Name: Certified Wireless Network Administrator (CWNA)**
**Course Number: W1001**
Course Description: The CWNA certification is the foundation level enterprise Wi-Fi certification for the CWNP Program, and CWNA is required for your CWSP and CWNE certifications. Your CWNA certification will get you started in your wireless career by ensuring you have the skills to successfully survey, install, and administer enterprise Wi-Fi networks.
Course Length: 5 Day(s)
Prerequisites: Familiar with Wireless LAN Hardware and Software
Students/class: Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

**Course Name: Certified Wireless Security Professional (CWSP)**
**Course Number: W1002**
Course Description: The Certified Wireless Security Professional certification is the professional level wireless LAN certification for the CWNP Program. The CWSP certification will assist in advancing your career by helping to ensure that you have the skills needed to successfully secure enterprise Wi-Fi networks from hackers. This certification allows you to do all of this regardless of which brand of Wi-Fi gear your organization uses.
Course Length: 4 Day(s)

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
Prerequisites: CWNA Certification
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

**Course Name: Certified Wireless Technology Specialist (CWTS)**
**Course Number: W1003**
Course Description: The CWTS certification will validate the knowledge of enterprise WLAN sales as well as support professionals who need to be familiar and confident with the terminology and basic functionality used within enterprise wireless networks.
Course Length: 2 Day(s)
Prerequisites: Basic Computer Knowledge
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site

**Course Name: Certified Wireless Analysis Professional (CWAP)**
**Course Number: W1004**
Course Description: The CWAP certification is a professional level wireless LAN certification for the CWNP Program. The CWAP certification will advance your career by ensuring you have the skills to successfully analyze, troubleshoot, and optimize any enterprise Wi-Fi network, no matter which brand of Wi-Fi gear your organization deploys.
Course Length: 5 Day(s)
Prerequisites: CWNA Certification
Students/class-Min 6; Max 25
Class Schedules: As agreed to between ordering agency and CWI
Class Location: Client site or CWI provided site
<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>GSA Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1001</td>
<td>AWS Solutions Architect -- Associate</td>
<td>$1,692.60</td>
</tr>
<tr>
<td>A1002</td>
<td>AWS Developer -- Associate</td>
<td>$1,692.60</td>
</tr>
<tr>
<td>A1003</td>
<td>AWS Certified SysOps Administrator - Associate</td>
<td>$1,692.60</td>
</tr>
<tr>
<td>A1004</td>
<td>AWS Solutions Architect -- Professional</td>
<td>$1,692.60</td>
</tr>
<tr>
<td>A1005</td>
<td>AWS DevOps Engineer -- Professional</td>
<td>$1,692.60</td>
</tr>
<tr>
<td>C1001</td>
<td>Configuring CISCO Routers for Network Security</td>
<td>$1,813.50</td>
</tr>
<tr>
<td>C1002</td>
<td>Securing the Virtual Environment</td>
<td>$1,813.50</td>
</tr>
<tr>
<td>C1003</td>
<td>Securing SharePoint</td>
<td>$1,813.50</td>
</tr>
<tr>
<td>C1004</td>
<td>Security in an IPv6 Environment</td>
<td>$1,753.05</td>
</tr>
<tr>
<td>C1005</td>
<td>Cyber Security: Threat Analysis and Response Solutions</td>
<td>$1,753.05</td>
</tr>
<tr>
<td>C1006</td>
<td>Incident Response</td>
<td>$1,934.40</td>
</tr>
<tr>
<td>C1007</td>
<td>Network Intrusion Detection</td>
<td>$1,753.05</td>
</tr>
<tr>
<td>C1008</td>
<td>SCADA - Supervisory Control and Data Acquisition Security</td>
<td>$3,989.70</td>
</tr>
<tr>
<td>C1009</td>
<td>Securing Web Applications, Services, and Servers</td>
<td>$1,753.05</td>
</tr>
<tr>
<td>C1010</td>
<td>Penetration Testing: Procedures &amp; Methodologies</td>
<td>$1,753.05</td>
</tr>
<tr>
<td>C1011</td>
<td>Cyber Threat Counter–Exploitation</td>
<td>$1,753.05</td>
</tr>
<tr>
<td>C1012</td>
<td>Python Security for Practitioners</td>
<td>$1,753.05</td>
</tr>
<tr>
<td>C1013</td>
<td>Securing VoIP Networks</td>
<td>$1,692.60</td>
</tr>
<tr>
<td>C1014</td>
<td>Virtualization Essentials Professional (VEP)</td>
<td>$1,692.60</td>
</tr>
<tr>
<td>C1015</td>
<td>CompTIA Advanced Security Practitioner (CASP) Certification</td>
<td>$1,934.40</td>
</tr>
<tr>
<td>C1016</td>
<td>Certified Incident Handler (ECIH)</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>C1017</td>
<td>Disaster Recovery Professional (EDRP)</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>C1018</td>
<td>Certified in Risk and Information Systems Control (CRISC)</td>
<td>$1,813.50</td>
</tr>
<tr>
<td>C1019</td>
<td>Certified Authorization Professional (CAP®)</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>C1020</td>
<td>Risk Management Framework (RMF)</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>C1021</td>
<td>Certified Ethical Hacker (CEH)</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>C1022</td>
<td>Computer Hacking Forensic Investigator (CHFI)</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>C1023</td>
<td>ECSA/LPT</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>C1024</td>
<td>Certified Information Security Manager (CISM)</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>C1025</td>
<td>Certified Information Systems Auditor (CISA)</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>C1026</td>
<td>Certified Information Systems Security Professional (CISSP)</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>C1027</td>
<td>Certified Cloud Security Professional (CCSP)</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>C1028</td>
<td>CompTIA PenTest+</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>C1029</td>
<td>Systems Security Certified Practitioner (SSCP)</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>C1030</td>
<td>CompTIA CYSA+</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>C1031</td>
<td>Certified Network Defender (CND)</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>C1032</td>
<td>CompTIA Cloud+ Certification</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>C1033</td>
<td>CompTIA Cloud Essentials</td>
<td>$906.75</td>
</tr>
<tr>
<td>E2001</td>
<td>C</td>
<td>CISO Certified Chief Information Officer</td>
</tr>
<tr>
<td>MD-100</td>
<td>Installing, Deploying, Configuring, Protecting, Supporting and Maintaining Windows 10</td>
<td>$1,511.25</td>
</tr>
<tr>
<td>MD-101</td>
<td>Deploying, Managing, Protecting Modern Desktops and Devices</td>
<td>$1,511.25</td>
</tr>
<tr>
<td>M10982</td>
<td>Supporting and Troubleshooting Windows 10</td>
<td>$1,511.25</td>
</tr>
<tr>
<td>M20695</td>
<td>Deploying Windows Desktops and Enterprise Applications</td>
<td>$1,511.25</td>
</tr>
<tr>
<td>M20698</td>
<td>Installing and Configuring Windows 10</td>
<td>$1,511.25</td>
</tr>
<tr>
<td>M20740</td>
<td>Installation, Storage, and Compute with Windows Server 2016</td>
<td>$1,511.25</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Price</td>
</tr>
<tr>
<td>--------</td>
<td>---------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>M20741</td>
<td>Networking with Windows Server 2016</td>
<td>$1,511.25</td>
</tr>
<tr>
<td>M20742</td>
<td>Identity with Windows Server 2016</td>
<td>$1,511.25</td>
</tr>
<tr>
<td>M20743</td>
<td>Upgrading Your Skills to Windows Server 2016 MCSA</td>
<td>$1,511.25</td>
</tr>
<tr>
<td>M20744</td>
<td>Securing Windows Server 2016</td>
<td>$1,511.25</td>
</tr>
<tr>
<td>M20745</td>
<td>Implementing a Software Defined Datacenter</td>
<td>$1,511.25</td>
</tr>
<tr>
<td>M50258</td>
<td>Managing Windows Environments with Group Policy</td>
<td>$1,511.25</td>
</tr>
<tr>
<td>N1000</td>
<td>CompTIA IT Fundamental (ITF+)</td>
<td>$1,511.25</td>
</tr>
<tr>
<td>N1001</td>
<td>CompTIA A+</td>
<td>$1,632.15</td>
</tr>
<tr>
<td>N1002</td>
<td>CompTIA Network+</td>
<td>$1,632.15</td>
</tr>
<tr>
<td>N1003</td>
<td>CompTIA Security+</td>
<td>$1,692.60</td>
</tr>
<tr>
<td>N1004</td>
<td>CompTIA Server+</td>
<td>$1,813.50</td>
</tr>
<tr>
<td>N1005</td>
<td>CompTIA Linux+</td>
<td>$1,753.05</td>
</tr>
<tr>
<td>N2001</td>
<td>Interconnecting Cisco Networking Devices 1 (ICND 1)</td>
<td>$1,813.50</td>
</tr>
<tr>
<td>N2002</td>
<td>Interconnecting Cisco Networking Devices 2 (ICND 2)</td>
<td>$1,813.50</td>
</tr>
<tr>
<td>N2003</td>
<td>Cisco Certified Network Associate (CCNA)</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>N2004</td>
<td>CCNP: Implementing Cisco IP Routing (ROUTE)</td>
<td>$2,297.10</td>
</tr>
<tr>
<td>N2005</td>
<td>CCNP: Implementing Cisco IP Switched Networks (SWITCH)</td>
<td>$2,297.10</td>
</tr>
<tr>
<td>N2006</td>
<td>CCNP: Troubleshooting and Maintaining Cisco IP Networks (TSHOOT)</td>
<td>$2,297.10</td>
</tr>
<tr>
<td>N2007</td>
<td>ICOM - Introducing Cisco Voice and Unified Communications Administration v8.1</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>N2008</td>
<td>IUWNE - Implementing Cisco Unified Wireless Networking Essentials v2.0</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>N2009</td>
<td>IINS - Implementing Cisco IOS Network Security v2.0</td>
<td>$2,297.10</td>
</tr>
<tr>
<td>N2010</td>
<td>DCUCI - Implementing Cisco Data Center Unified Computing v5.0</td>
<td>$2,901.60</td>
</tr>
<tr>
<td>N2011</td>
<td>Securing Cisco Networks with Threat Detection and Analysis (SCYBER)</td>
<td>$1,692.60</td>
</tr>
<tr>
<td>P1001</td>
<td>PMI Risk Management Professional (PMI-RMP)</td>
<td>$1,632.15</td>
</tr>
<tr>
<td>P1002</td>
<td>Certified Associate in Project Management (CAPM)</td>
<td>$1,934.40</td>
</tr>
<tr>
<td>P1003</td>
<td>PMI Agile Certified Practitioner</td>
<td>$1,632.15</td>
</tr>
<tr>
<td>P1004</td>
<td>Introduction to Project Management</td>
<td>$1,934.40</td>
</tr>
<tr>
<td>P1005</td>
<td>Project Management for IT Professionals</td>
<td>$1,934.40</td>
</tr>
<tr>
<td>RH1001</td>
<td>Red Hat® Enterprise Performance Tuning (RH442)</td>
<td>$2,720.25</td>
</tr>
<tr>
<td>RH1002</td>
<td>Red Hat® Enterprise Virtualization (RH318)</td>
<td>$2,720.25</td>
</tr>
<tr>
<td>RH1003</td>
<td>Red Hat® JBoss A-MQ Development and Deployment (JB437)</td>
<td>$1,390.35</td>
</tr>
<tr>
<td>RH1004</td>
<td>Red Hat® JBoss Application Administration I (JB248)</td>
<td>$2,901.60</td>
</tr>
<tr>
<td>RH1005</td>
<td>Red Hat® JBoss Application Administration II (JB348)</td>
<td>$2,901.60</td>
</tr>
<tr>
<td>RH1006</td>
<td>Red Hat® OpenStack Administration (CL210)</td>
<td>$2,901.60</td>
</tr>
<tr>
<td>RH1007</td>
<td>Red Hat® Server Hardening (RH413)</td>
<td>$2,720.25</td>
</tr>
<tr>
<td>RH1008</td>
<td>Red Hat® System Administration I (RH124)</td>
<td>$2,901.60</td>
</tr>
<tr>
<td>RH1009</td>
<td>Red Hat® System Administration II (RH134)</td>
<td>$2,720.25</td>
</tr>
<tr>
<td>RH1010</td>
<td>Red Hat® System Administration III (RH254)</td>
<td>$2,901.60</td>
</tr>
<tr>
<td>RH1011</td>
<td>RHCE Rapid Track (RH299) Course</td>
<td>$2,901.60</td>
</tr>
<tr>
<td>RH1012</td>
<td>RHCSA Rapid Track (RH199) Course</td>
<td>$2,720.25</td>
</tr>
<tr>
<td>W1001</td>
<td>Certified Wireless Network Administrator (CWNA)</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>W1002</td>
<td>Certified Wireless Security Professional (CWSP)</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>W1003</td>
<td>Certified Wireless Technology Specialist (CWTS)</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>W1004</td>
<td>Certified Wireless Analysis Professional (CWAP)</td>
<td>$2,115.75</td>
</tr>
<tr>
<td>Certification Exam Test Voucher</td>
<td>UOI</td>
<td>GSA Price</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>-----</td>
<td>------------</td>
</tr>
<tr>
<td>CompTIA A+ Test Voucher</td>
<td>1</td>
<td>$225.40</td>
</tr>
<tr>
<td>CompTIA Security+ Test Voucher</td>
<td>1</td>
<td>$348.88</td>
</tr>
<tr>
<td>CompTIA Network+ Test Voucher</td>
<td>1</td>
<td>$220.50</td>
</tr>
<tr>
<td>CompTIA CASP Test Voucher</td>
<td>1</td>
<td>$450.80</td>
</tr>
<tr>
<td>EC-Council CEH Test Voucher</td>
<td>1</td>
<td>$514.50</td>
</tr>
<tr>
<td>ISC2 CISSP Test Voucher</td>
<td>1</td>
<td>$719.32</td>
</tr>
<tr>
<td>Axelos ITIL Foundation</td>
<td>1</td>
<td>$392.00</td>
</tr>
</tbody>
</table>
Why Cyber World Institute online learning?

Instructor led lectures
Cyberworld Institute Courses replicate a live class experience with an instructor on screen delivering the course's theories and concepts. These lectures are pre-recorded and available to the user 24/7. They can be repeated, rewound, fast forwarded and are fully controlled by the user. Cyberworld Institute instructors have a minimum of 10 years' experience in the subject matter they are teaching and many times are the authors of the official content from the vendor. These instructors are energetic and charismatic to ensure that the student is engaged throughout their course and enjoys the experience.

Visual Demonstrations, Educational Games & Flashcards
Cyberworld Institute recognizes that all students do not learn alike and different delivery mediums are needed in order to achieve success for a large student base. With that in mind, we deliver our content in a variety of different ways to ensure that students stay engaged and productive throughout their courses. Our courseware includes instructor-led lab demonstrations and visual presentations that allow students to develop their skills based on real world scenarios explained by the instructor.

Mobile Optimization & Progress Tracking
Our courses are optimized for all mobile devices allowing students to learn on the go whenever they have free time. Students can access their courses from anywhere and their progress is completely tracked and recorded.

Quizzes and Exam Simulators
Cyberworld Institute custom practice exams prepare you for your exams differently and more effectively than the traditional exam preps on the market. Students will have practice quizzes after each module to ensure you are confident on the topic you have completed before proceeding. This allows students to gauge your effectiveness before moving to the next module in your course.

World Class Learning Management System
Cyberworld Institute provides the next generation Learning Management System (LMS). An experience that combines the feature set of traditional Learning Management Systems with advanced functionality designed to make learning management easy and online learning engaging from the user’s perspective. Users can access our platform anywhere, on any device to learn, share, and grow in real time. Learn anytime, anywhere 24/7.
## Online Course Index and Prices

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Online Course Title</th>
<th>GSA PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adobe Courses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A101</td>
<td>Adobe After Effects</td>
<td>$105.03</td>
</tr>
<tr>
<td>A102</td>
<td>Adobe Flash/Animate</td>
<td>$105.03</td>
</tr>
<tr>
<td>A103</td>
<td>Adobe Illustrator</td>
<td>$105.03</td>
</tr>
<tr>
<td>A104</td>
<td>Adobe InDesign</td>
<td>$105.03</td>
</tr>
<tr>
<td>A105</td>
<td>Adobe Photoshop</td>
<td>$105.03</td>
</tr>
<tr>
<td>A106</td>
<td>Adobe Premiere Pro Essentials</td>
<td>$105.03</td>
</tr>
<tr>
<td>A107</td>
<td>Adobe - Introduction to Animation</td>
<td>$105.03</td>
</tr>
<tr>
<td><strong>Business and Accounting Courses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B101</td>
<td>Accounting and Business Basics</td>
<td>$105.03</td>
</tr>
<tr>
<td>B102</td>
<td>Quickbooks</td>
<td>$105.03</td>
</tr>
<tr>
<td>B103</td>
<td>Quickbooks Point of Sale</td>
<td>$105.03</td>
</tr>
<tr>
<td>B104</td>
<td>Sage 50 Certificate Course</td>
<td>$105.03</td>
</tr>
<tr>
<td><strong>Cisco Courses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ci101</td>
<td>Cisco 100-105: ICND1 - Interconnecting Cisco Networking Devices Part 1</td>
<td>$241.28</td>
</tr>
<tr>
<td>Ci102</td>
<td>Cisco 200-105: CCNA - ICND2 - Interconnecting Cisco Networking Devices Part 2</td>
<td>$241.28</td>
</tr>
<tr>
<td>Ci103</td>
<td>Cisco 200-301: Implementing and Administering Cisco Solutions v1.0</td>
<td>$241.28</td>
</tr>
<tr>
<td>Ci104</td>
<td>Cisco 200-355: Implementing Cisco Wireless Network Fundamentals</td>
<td>$241.28</td>
</tr>
<tr>
<td>Ci105</td>
<td>Cisco 210-060 CICD: Implementing Cisco Collaboration Devices</td>
<td>$241.28</td>
</tr>
<tr>
<td>Ci106</td>
<td>Cisco 210-065 CIVND: Implementing Cisco Video Network Devices</td>
<td>$241.28</td>
</tr>
<tr>
<td>Ci107</td>
<td>Cisco 210-260: CCNA Security</td>
<td>$241.28</td>
</tr>
<tr>
<td>Ci108</td>
<td>Cisco 300-101: CCNP - ROUTE - Implementing Cisco IP Routing</td>
<td>$241.28</td>
</tr>
<tr>
<td>Ci109</td>
<td>Cisco 300-115: CCNP Routing and Switching SWITCH</td>
<td>$241.28</td>
</tr>
<tr>
<td>Ci110</td>
<td>Cisco 300-135: Troubleshooting and Maintaining Cisco IP Networks (TSHOOT)</td>
<td>$241.28</td>
</tr>
<tr>
<td>Ci111</td>
<td>Cisco 640-461: CCNA Voice - ICOMM v8.0 - Cisco Voice and Unified Communications Administration</td>
<td>$241.28</td>
</tr>
<tr>
<td>Ci112</td>
<td>Cisco 640-864: CCDA Cisco Certified Design Associate</td>
<td>$241.28</td>
</tr>
<tr>
<td><strong>CompTIA Courses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co101</td>
<td>CompTIA A+ 220-1001 (Core 1)</td>
<td>$160.72</td>
</tr>
<tr>
<td>Co102</td>
<td>CompTIA A+ 220-1002 (Core 2)</td>
<td>$160.72</td>
</tr>
<tr>
<td>Co103</td>
<td>CompTIA Advanced Security Practitioner (CASP) CAS-003</td>
<td>$160.72</td>
</tr>
<tr>
<td>Co104</td>
<td>CompTIA Cybersecurity Analyst (CySA+)</td>
<td>$160.72</td>
</tr>
<tr>
<td>Co105</td>
<td>CompTIA Cloud Overview</td>
<td>$160.72</td>
</tr>
<tr>
<td>Co106</td>
<td>CompTIA CV0-001: CompTIA Cloud +</td>
<td>$160.72</td>
</tr>
<tr>
<td>Co107</td>
<td>CompTIA FC0-U61: IT Fundamentals</td>
<td>$160.72</td>
</tr>
<tr>
<td>Co108</td>
<td>CompTIA LX0-101 &amp; LX0-102: CompTIA Linux+</td>
<td>$160.72</td>
</tr>
<tr>
<td>Co109</td>
<td>CompTIA N10-007: Network+</td>
<td>$160.72</td>
</tr>
<tr>
<td>Co110</td>
<td>CompTIA MB0-001: Mobility+</td>
<td>$160.72</td>
</tr>
<tr>
<td>Co111</td>
<td>CompTIA PenTest+ (PT0-001)</td>
<td>$160.72</td>
</tr>
<tr>
<td>Co112</td>
<td>CompTIA SY0-501: Security+</td>
<td>$160.72</td>
</tr>
<tr>
<td>Co113</td>
<td>Unix Administration Basics</td>
<td>$160.72</td>
</tr>
<tr>
<td>Co114</td>
<td>EXIN Cloud Computing</td>
<td>$160.72</td>
</tr>
<tr>
<td>Co150B</td>
<td>CompTIA Security Analytics Expert - CSAE</td>
<td>$241.28</td>
</tr>
<tr>
<td>Co151B</td>
<td>CompTIA Security Infrastructure Expert - CSIE</td>
<td>$241.28</td>
</tr>
<tr>
<td>Co152B</td>
<td>Cybersecurity Expert Bundle</td>
<td>$241.28</td>
</tr>
<tr>
<td>Co153B</td>
<td>CompTIA Network Security Professional - CNSP</td>
<td>$241.28</td>
</tr>
<tr>
<td>Co154B</td>
<td>CompTIA Network Vulnerability Assessment Professional - CNVP</td>
<td>$241.28</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Description</td>
<td>Price</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Co155B</td>
<td>CompTIA Secure Cloud Professional - CSCP</td>
<td>$241.28</td>
</tr>
<tr>
<td>Co156B</td>
<td>CompTIA Security Analytics Professional - CSAP</td>
<td>$241.28</td>
</tr>
<tr>
<td>Co157B</td>
<td>CompTIA Secure Infrastructure Specialist - CSIS</td>
<td>$241.28</td>
</tr>
<tr>
<td>Co159B</td>
<td>CompTIA Cloud Admin Professional – CCAP</td>
<td>$241.28</td>
</tr>
<tr>
<td>Co161B</td>
<td>CompTIA IT Operations Specialist - CIOS</td>
<td>$241.28</td>
</tr>
<tr>
<td>Co162B</td>
<td>CompTIA Systems Support Specialist - CSSS</td>
<td>$241.28</td>
</tr>
</tbody>
</table>

**Cybersecurity Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cy101</td>
<td>Certified Information Security Manager (CISM)</td>
<td>$160.72</td>
</tr>
<tr>
<td>Cy102</td>
<td>Certified Information Systems Auditor (CISA)</td>
<td>$160.72</td>
</tr>
<tr>
<td>Cy103</td>
<td>Cloud Computing Security Knowledge (CCSK)</td>
<td>$160.72</td>
</tr>
<tr>
<td>Cy104</td>
<td>Computer Hacking Forensic Investigator (CHFI)</td>
<td>$160.72</td>
</tr>
<tr>
<td>Cy105</td>
<td>CompTIA Cybersecurity Analyst (CySA+)</td>
<td>$160.72</td>
</tr>
<tr>
<td>Cy106</td>
<td>CompTIA Security+ SY0-501</td>
<td>$160.72</td>
</tr>
<tr>
<td>Cy107</td>
<td>Cyber Security and Awareness</td>
<td>$160.72</td>
</tr>
<tr>
<td>Cy108</td>
<td>Data Security Compliance</td>
<td>$160.72</td>
</tr>
<tr>
<td>Cy109</td>
<td>Hacking Essentials</td>
<td>$160.72</td>
</tr>
</tbody>
</table>

**Cloud Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co101</td>
<td>CompTIA CV0-001: CompTIA Cloud +</td>
<td>$160.72</td>
</tr>
<tr>
<td>Co105</td>
<td>CompTIA Cloud Overview</td>
<td>$160.72</td>
</tr>
<tr>
<td>Co114</td>
<td>EXIN Cloud Computing</td>
<td>$160.72</td>
</tr>
<tr>
<td>Is102</td>
<td>Cloud Computing Security Knowledge (CCSK)</td>
<td>$160.72</td>
</tr>
<tr>
<td>M149</td>
<td>Microsoft AZ-203: Developing Solutions for Microsoft Azure</td>
<td>$160.72</td>
</tr>
<tr>
<td>M121</td>
<td>Microsoft 70-246: Monitoring and Operating a Private Cloud 2012</td>
<td>$160.72</td>
</tr>
<tr>
<td>M122</td>
<td>Microsoft 70-247: Deploying and Operating a Private Cloud 2012</td>
<td>$160.72</td>
</tr>
<tr>
<td>V101</td>
<td>VMWare vSphere VCP 5.5</td>
<td>$160.72</td>
</tr>
<tr>
<td>V102</td>
<td>VMWare vSphere VCP 6.7</td>
<td>$160.72</td>
</tr>
</tbody>
</table>

**EC-Council Course**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ec101</td>
<td>Certified Ethical Hacker (CEH) v. 10</td>
<td>$160.72</td>
</tr>
</tbody>
</table>

**ISACA Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ia101</td>
<td>Certified Information Security Manager (CISM)</td>
<td>$160.72</td>
</tr>
<tr>
<td>Ia102</td>
<td>Certified Information Systems Auditor (CISA)</td>
<td>$160.72</td>
</tr>
</tbody>
</table>

**ISC2 Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is101</td>
<td>Certified Information Systems Security Pro (CISSP)</td>
<td>$160.72</td>
</tr>
<tr>
<td>Is102</td>
<td>Cloud Computing Security Knowledge (CCSK)</td>
<td>$160.72</td>
</tr>
</tbody>
</table>

**ITIL Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>It101</td>
<td>Information Technology Infrastructure Library (ITIL, Foundations V3)</td>
<td>$160.72</td>
</tr>
<tr>
<td>It102</td>
<td>Information Technology Infrastructure Library (ITIL) - Service Operation</td>
<td>$160.72</td>
</tr>
</tbody>
</table>

**Microsoft Technical**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>M101</td>
<td>Microsoft 70-243: Administering and Deploying SCCM 2012</td>
<td>$160.72</td>
</tr>
<tr>
<td>M102</td>
<td>Microsoft 70-331: Core Solutions of SharePoint Server 2013</td>
<td>$160.72</td>
</tr>
<tr>
<td>M103</td>
<td>Microsoft 70-332: Advanced Solutions of SharePoint Server 2013</td>
<td>$160.72</td>
</tr>
<tr>
<td>M104</td>
<td>Microsoft 70-341: Core Solutions of Exchange Server 2013</td>
<td>$160.72</td>
</tr>
<tr>
<td>M105</td>
<td>Microsoft 70-342: Advanced Solutions of Exchange Server 2013</td>
<td>$160.72</td>
</tr>
<tr>
<td>M106</td>
<td>Microsoft 70-413: Designing and Implementing a Server Infrastructure</td>
<td>$160.72</td>
</tr>
<tr>
<td>M107</td>
<td>Microsoft 70-414: Implementing an Advanced Server Infrastructure</td>
<td>$160.72</td>
</tr>
<tr>
<td>M108</td>
<td>Microsoft 70-432: SQL Server 2008 Implementation and Maintenance</td>
<td>$160.72</td>
</tr>
<tr>
<td>M109</td>
<td>Microsoft 70-448: Microsoft SQL Server 2008, Business Intelligence Development and Maintenance</td>
<td>$160.72</td>
</tr>
<tr>
<td>M110</td>
<td>Microsoft 70-461: Querying SQL Server 2012</td>
<td>$160.72</td>
</tr>
<tr>
<td>M111</td>
<td>Microsoft 70-462: Administering SQL Server 2012 Databases</td>
<td>$160.72</td>
</tr>
<tr>
<td>M112</td>
<td>Microsoft 70-463: Implementing a Data Warehouse with SQL Server 2012</td>
<td>$160.72</td>
</tr>
<tr>
<td>M113</td>
<td>Microsoft 70-464: Developing Microsoft SQL Server 2012 Databases</td>
<td>$160.72</td>
</tr>
<tr>
<td>M114</td>
<td>Microsoft 70-465: Designing Database Solutions for Microsoft SQL Server 2012</td>
<td>$160.72</td>
</tr>
<tr>
<td>M115</td>
<td>Microsoft 70-466: Implementing Data Models &amp; Reports with SQL Server 2012</td>
<td>$160.72</td>
</tr>
<tr>
<td>M116</td>
<td>Microsoft 70-685 Pro: Windows 7, Enterprise Desktop Support Technician</td>
<td>$160.72</td>
</tr>
<tr>
<td>M117</td>
<td>Microsoft 70-687: Configuring Windows 8</td>
<td>$160.72</td>
</tr>
<tr>
<td>M118</td>
<td>Microsoft 70-640 TS: Configuring Windows Server 2008 Active Directory</td>
<td>$160.72</td>
</tr>
<tr>
<td>M119</td>
<td>Microsoft 70-642 TS: Configuring Windows Server 2008 Network Infrastructure</td>
<td>$160.72</td>
</tr>
<tr>
<td>M120</td>
<td>Microsoft 70-646 Pro: Windows Server 2008, Serv49 Administrator</td>
<td>$160.72</td>
</tr>
</tbody>
</table>

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>M121</td>
<td>Microsoft 70-246: Monitoring and Operating a Private Cloud 2012</td>
<td>$160.72</td>
</tr>
<tr>
<td>M122</td>
<td>Microsoft 70-247: Deploying and Operating a Private Cloud 2012</td>
<td>$160.72</td>
</tr>
<tr>
<td>M123</td>
<td>Microsoft 70-336: MCSE Core Solutions Lync Server 2013</td>
<td>$160.72</td>
</tr>
<tr>
<td>M124</td>
<td>Microsoft 70-337: MCSE Communication - Lync Server</td>
<td>$160.72</td>
</tr>
<tr>
<td>M125</td>
<td>Microsoft 70-346: Managing Office 365 Identities and Requirements</td>
<td>$160.72</td>
</tr>
<tr>
<td>M126</td>
<td>Microsoft 70-347: Enabling Office 365 Services</td>
<td>$160.72</td>
</tr>
<tr>
<td>M127</td>
<td>Microsoft 70-409: Server Virtualization with Windows Server Hyper-V and System Center</td>
<td>$160.72</td>
</tr>
<tr>
<td>M128</td>
<td>Microsoft 70-410: Installing and Configuring Windows Server 2012</td>
<td>$160.72</td>
</tr>
<tr>
<td>M129</td>
<td>Microsoft 70-411: Administering Windows Server 2012</td>
<td>$160.72</td>
</tr>
<tr>
<td>M130</td>
<td>Microsoft 70-412: Configuring Advanced Windows Server 2012 Services</td>
<td>$160.72</td>
</tr>
<tr>
<td>M131</td>
<td>Microsoft 70-467: Designing Business Intelligence Solutions with SQL Server 2012</td>
<td>$160.72</td>
</tr>
<tr>
<td>M132</td>
<td>Microsoft 70-486: Developing ASP.NET MVC Web Applications</td>
<td>$160.72</td>
</tr>
<tr>
<td>M133</td>
<td>Microsoft 70-487: Developing Microsoft Azure and Web Services</td>
<td>$160.72</td>
</tr>
<tr>
<td>M134</td>
<td>Microsoft 70-488: Developing Microsoft SharePoint Server 2013 Core Solutions</td>
<td>$160.72</td>
</tr>
<tr>
<td>M135</td>
<td>Microsoft 70-489: Developing Microsoft SharePoint Server 2013 Advanced Solutions</td>
<td>$160.72</td>
</tr>
<tr>
<td>M136</td>
<td>Microsoft 70-680 TS: Configuring Windows 7</td>
<td>$160.72</td>
</tr>
<tr>
<td>M137</td>
<td>Microsoft 70-686 Pro: Windows 7, Enterprise Desktop Administrator</td>
<td>$160.72</td>
</tr>
<tr>
<td>M138</td>
<td>Microsoft 70-688: Managing and Maintaining Windows 8</td>
<td>$160.72</td>
</tr>
<tr>
<td>M139</td>
<td>Microsoft 70-697: Configuring Windows Devices (Windows 10)</td>
<td>$160.72</td>
</tr>
<tr>
<td>M140</td>
<td>Microsoft 70-698: Installing and Configuring Windows 10</td>
<td>$160.72</td>
</tr>
<tr>
<td>M141</td>
<td>Microsoft 70-740 Installation, Storage and Compute with Windows Server 2016</td>
<td>$160.72</td>
</tr>
<tr>
<td>M142</td>
<td>Microsoft 70-741: MSCA Networking with Windows Server 2016</td>
<td>$160.72</td>
</tr>
<tr>
<td>M143</td>
<td>Microsoft 70-742: Identity in Windows Server 2016</td>
<td>$160.72</td>
</tr>
<tr>
<td>M144</td>
<td>Microsoft 70-764: Administering a SQL Database Infrastructure</td>
<td>$160.72</td>
</tr>
<tr>
<td>M145</td>
<td>Microsoft 70-765: Provisioning SQL Databases</td>
<td>$160.72</td>
</tr>
<tr>
<td>M146</td>
<td>Microsoft 98-365 MTA Windows Server 2016 Administration</td>
<td>$160.72</td>
</tr>
<tr>
<td>M147</td>
<td>Microsoft 98-366 MTA Networking Fundamentals</td>
<td>$160.72</td>
</tr>
<tr>
<td>M148</td>
<td>Microsoft 98-367 MTA Security Fundamentals</td>
<td>$160.72</td>
</tr>
<tr>
<td>M149</td>
<td>Microsoft AZ-203: Developing Solutions for Microsoft Azure</td>
<td>$160.72</td>
</tr>
<tr>
<td>M201L</td>
<td>Microsoft 70-332: Advanced Solutions of SharePoint Server 2013 &amp; Lab</td>
<td>$360.51</td>
</tr>
<tr>
<td>M202L</td>
<td>Microsoft 70-341: Core Solutions of Exchange Server 2013 &amp; Lab [341-lab-365]</td>
<td>$360.51</td>
</tr>
<tr>
<td>M204L</td>
<td>Microsoft 70-410: Installing and Configuring Windows Server 2012 (R2) &amp; Lab</td>
<td>$360.51</td>
</tr>
<tr>
<td>M205L</td>
<td>Microsoft 70-411: Administering Windows Server 2012 (R2) &amp; Lab [ms-70-411-lab-365]</td>
<td>$360.51</td>
</tr>
<tr>
<td>M206L</td>
<td>Microsoft 70-412: Configuring Advanced Windows Server 2012 Services (R2) &amp; Lab</td>
<td>$360.51</td>
</tr>
<tr>
<td>M207L</td>
<td>Microsoft 70-432: SQL Server 2008 Implementation and Maintenance &amp; Lab</td>
<td>$360.51</td>
</tr>
<tr>
<td>M208L</td>
<td>Microsoft 70-448: SQL Server 2008 Business Intelligence Development and Maintenance &amp; Lab</td>
<td>$360.51</td>
</tr>
<tr>
<td>M209L</td>
<td>Microsoft 70-461: Querying SQL Server 2012 &amp; Lab</td>
<td>$360.51</td>
</tr>
<tr>
<td>M210L</td>
<td>Microsoft 70-462: Administering SQL Server 2012 Databases &amp; Lab</td>
<td>$360.51</td>
</tr>
<tr>
<td>M211L</td>
<td>Microsoft 70-463: Implementing a Data Warehouse with SQL Server 2012 &amp; Lab</td>
<td>$360.51</td>
</tr>
<tr>
<td>M212L</td>
<td>Microsoft 70-464: Developing SQL Server 2012 Databases &amp; Lab</td>
<td>$360.51</td>
</tr>
<tr>
<td>M213L</td>
<td>Microsoft 70-466: Implementing Data Models &amp; Reports with SQL Server 2012 &amp; Lab</td>
<td>$360.51</td>
</tr>
<tr>
<td>M214L</td>
<td>Microsoft 70-467: Designing Business Intelligence Solutions with SQL Server 2012 &amp; Lab</td>
<td>$360.51</td>
</tr>
<tr>
<td>M215L</td>
<td>Microsoft 70-640: Configuring Windows Server 2008 Active Directory &amp; Lab</td>
<td>$360.51</td>
</tr>
<tr>
<td>M216L</td>
<td>Microsoft 70-642: Configuring Windows Server 2008 Network Infrastructure &amp; Lab</td>
<td>$360.51</td>
</tr>
<tr>
<td>M217L</td>
<td>Microsoft 70-646: Windows Server 2008 Server Administrator &amp; Lab</td>
<td>$360.51</td>
</tr>
<tr>
<td>M218L</td>
<td>Microsoft 70-680: Configuring Windows 7 (R2) &amp; Lab</td>
<td>$360.51</td>
</tr>
<tr>
<td>M220L</td>
<td>Microsoft 70-686: Windows 7 Enterprise Desktop Administrator &amp; Lab</td>
<td>$360.51</td>
</tr>
<tr>
<td>M221L</td>
<td>Microsoft 70-687: Configuring Windows 8 &amp; Lab</td>
<td>$360.51</td>
</tr>
<tr>
<td>M222L</td>
<td>Microsoft 70-688: Managing and Maintaining Windows 8 &amp; Lab</td>
<td>$360.51</td>
</tr>
<tr>
<td>M223L</td>
<td>Microsoft 70-697: Configuring Windows Devices (Windows 10) &amp; Lab</td>
<td>$360.51</td>
</tr>
<tr>
<td>M224L</td>
<td>Microsoft 70-740 Installation, Storage and Compute with Windows Server 2016 and Lab</td>
<td>$360.51</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Price</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Mp101</td>
<td>Microsoft .NET 4.5 Programming with HTML 5</td>
<td>$160.72</td>
</tr>
<tr>
<td>Mp102</td>
<td>Microsoft ASP .NET MVC</td>
<td>$160.72</td>
</tr>
<tr>
<td>Mp103</td>
<td>Microsoft 70-480: Programming in HTML5 with JavaScript and CSS3</td>
<td>$160.72</td>
</tr>
<tr>
<td>Mo101</td>
<td>Microsoft: Windows 10 Power User (How to use Windows 10)</td>
<td>$104.72</td>
</tr>
<tr>
<td>Mo102</td>
<td>Microsoft Access 2013</td>
<td>$104.72</td>
</tr>
<tr>
<td>Mo105</td>
<td>Microsoft Access 2016</td>
<td>$104.72</td>
</tr>
<tr>
<td>Mo108</td>
<td>Microsoft Excel 2013</td>
<td>$104.72</td>
</tr>
<tr>
<td>Mo111</td>
<td>Microsoft Excel 2016</td>
<td>$104.72</td>
</tr>
<tr>
<td>Mo114</td>
<td>Microsoft Outlook 2013</td>
<td>$104.72</td>
</tr>
<tr>
<td>Mo117</td>
<td>Microsoft Outlook 2016</td>
<td>$104.72</td>
</tr>
<tr>
<td>Mo120</td>
<td>Microsoft PowerPoint 2013</td>
<td>$104.72</td>
</tr>
<tr>
<td>Mo123</td>
<td>Microsoft PowerPoint 2016</td>
<td>$104.72</td>
</tr>
<tr>
<td>Mo126</td>
<td>Microsoft Word 2013</td>
<td>$104.72</td>
</tr>
<tr>
<td>Mo129</td>
<td>Microsoft Word 2016</td>
<td>$104.72</td>
</tr>
<tr>
<td>Mo132</td>
<td>Microsoft Office 365 Online Versions</td>
<td>$104.72</td>
</tr>
<tr>
<td>Or101</td>
<td>Oracle Database 11g Certified Associate (OCA) Fundamentals 1Z0-051 and Admin 1z0-052</td>
<td>$160.72</td>
</tr>
<tr>
<td>Or102</td>
<td>Oracle 12c OCP 1Z0-061: SQL Fundamentals</td>
<td>$160.72</td>
</tr>
<tr>
<td>Or103</td>
<td>Oracle 12c OCP 1Z0-062: Installation and Administration</td>
<td>$160.72</td>
</tr>
<tr>
<td>Pg101</td>
<td>AWS Concepts &amp; Deep Dive Release March 2020</td>
<td>$210.77</td>
</tr>
<tr>
<td>Pg102</td>
<td>CSS Essentials</td>
<td>$210.77</td>
</tr>
<tr>
<td>Pg103</td>
<td>HTML Essentials</td>
<td>$210.77</td>
</tr>
<tr>
<td>Pg104</td>
<td>JavaScript Essentials</td>
<td>$210.77</td>
</tr>
<tr>
<td>Pg105</td>
<td>Java Programming</td>
<td>$210.77</td>
</tr>
<tr>
<td>Pg106</td>
<td>Microsoft .NET 4.5 Programming with HTML 5</td>
<td>$210.77</td>
</tr>
<tr>
<td>Pg108</td>
<td>Microsoft 70-486: Developing ASP.NET MVC Web Applications</td>
<td>$210.77</td>
</tr>
<tr>
<td>Pg109</td>
<td>Microsoft 70-487: Developing Microsoft Azure and Web Services</td>
<td>$210.77</td>
</tr>
<tr>
<td>Pg110</td>
<td>Python</td>
<td>$210.77</td>
</tr>
<tr>
<td>Pj101</td>
<td>Agile Project Management</td>
<td>$160.72</td>
</tr>
<tr>
<td>Pj102</td>
<td>Agile/Scrum</td>
<td>$160.72</td>
</tr>
<tr>
<td>Pj103</td>
<td>Agile/XP</td>
<td>$160.72</td>
</tr>
<tr>
<td>Pj104</td>
<td>Certified Scrum Master (CSM)</td>
<td>$160.72</td>
</tr>
<tr>
<td>Pj105</td>
<td>Certified Associate in Project Management (CAPM)®</td>
<td>$160.72</td>
</tr>
<tr>
<td>Pj106</td>
<td>Information Technology Infrastructure Library (ITIL, Foundations V3)</td>
<td>$160.72</td>
</tr>
<tr>
<td>Pj107</td>
<td>Information Technology Infrastructure Library (ITIL®) - Service Operation</td>
<td>$160.72</td>
</tr>
<tr>
<td>Pj108</td>
<td>PMI Risk Management Professional</td>
<td>$160.72</td>
</tr>
<tr>
<td>Pj109</td>
<td>PMI® CAPM® Prep - 6th edition PMBOK®</td>
<td>$160.72</td>
</tr>
<tr>
<td>Pj110</td>
<td>Project Management Professional (PMP)</td>
<td>$160.72</td>
</tr>
<tr>
<td>Pj111</td>
<td>SalesForce: Power User Course</td>
<td>$160.72</td>
</tr>
<tr>
<td>Pj112</td>
<td>Six Sigma Black Belt</td>
<td>$160.72</td>
</tr>
<tr>
<td>Pj113</td>
<td>Six Sigma Green Belt</td>
<td>$160.72</td>
</tr>
<tr>
<td>S101</td>
<td>Basics of Marketing with Social Media</td>
<td>$104.72</td>
</tr>
<tr>
<td>S102</td>
<td>Facebook 101</td>
<td>$104.72</td>
</tr>
<tr>
<td>S103</td>
<td>Facebook 102</td>
<td>$104.72</td>
</tr>
<tr>
<td>S104</td>
<td>Google Analytics</td>
<td>$104.72</td>
</tr>
<tr>
<td>S105</td>
<td>Linkedin</td>
<td>$104.72</td>
</tr>
<tr>
<td>S106</td>
<td>Marketing with Google and YouTube</td>
<td>$104.72</td>
</tr>
<tr>
<td>S107</td>
<td>Marketing Tools and Tips for Success</td>
<td>$104.72</td>
</tr>
<tr>
<td>S108</td>
<td>Microblogging with Tumblr</td>
<td>$104.72</td>
</tr>
<tr>
<td>S109</td>
<td>Social Media Course</td>
<td>$104.72</td>
</tr>
<tr>
<td>S110</td>
<td>Using Twitter</td>
<td>$104.72</td>
</tr>
<tr>
<td>S111</td>
<td>Pinterest</td>
<td>$104.72</td>
</tr>
<tr>
<td>S112</td>
<td>Reddit</td>
<td>$104.72</td>
</tr>
<tr>
<td>V101</td>
<td>VMWare vSphere VCP 5.5</td>
<td>$160.72</td>
</tr>
<tr>
<td>V102</td>
<td>VMWare vSphere VCP 6.7</td>
<td>$160.72</td>
</tr>
</tbody>
</table>
Online Course Descriptions
Adobe Online Courses

Course Name: Adobe After Effects
Course Number: A101
Course description:

After Effects is a Motion Media, Compositing, Animation and Special Effects software. It can be complicated to use, but once you get the hang of it, it’s a very powerful tool.

Course Length: 12 hours 37 minutes
Videos: 42
Test Questions: 149

Course Name: Adobe Flash/Animate
Course Number: A102
Course description:

Adobe Flash/Animate is an animation and interactive media industry standard software. With it, we can create animation projects such as short films, commercials and even big projects such as television shows. While it is capable of being the only software used for all parts of an animated project, it’s not necessarily a compositing, video editing or sound software. Thus, it’s best utilized with other software such as Premiere and After Effects for animated projects. Flash is capable of both frame-by-frame animation, as well as other, more complex puppeteering animation. However, while it has some camera functionality, it’s rather limited with it and again if you’d like to imply 3D space, you’re best off including other software with more powerful camera features and manipulation, such as After Effects. However, what makes Flash different from other animation software is that it’s also built for interactivity, and with it you can create interactive projects, websites (though it’s a risky program to use for websites because of SEO), e-cards and video games.

Course Length: 15 hours 45 minutes
Videos: 57
Test Questions: 147

Course Name: Adobe Illustrator
Course Number: A103
Course description:

Create beautiful vector art. The industry-standard vector graphics app lets you create logos, icons, sketches, typography, and complex illustrations for print, web, interactive, video, and mobile.

Course Length: 6 hours 44 minutes
Videos: 32
Test Questions: 98

Course Name: Adobe InDesign
Course Number: A104  
Course description:
Adobe InDesign is a layout software that takes images and text and lay them out across pages. InDesign is best used for working with multiple page documents like books, magazines, brochures, portfolios and can even be used to create business cards, letterheads, posters and flyers. Graphic designers and production artists are the primary users of this desktop publishing software. It can also be used in conjunction with other Adobe products primarily Photoshop and Illustrator. In the InDesign course, you will be instructed by a top professional in the design industry that holds the titles of 2D Animator and Adjunct Professor of Animation and Digital Art. You will first be shown how to navigate through the InDesign work area and how to create a new document and import images. You will be introduced to “master pages”, an important tool in creating multi-page projects, then you move onto other tools like creating tables and packaging. This course will be also going through more advanced techniques and design methods as well as types of exports.

Course Length: 7 hours 27 minutes  
Videos:19  
Test Questions:96

Course Name: Adobe Photoshop  
Course Number: A105  
Course description:
Create anything you can imagine. Anywhere you are. The world’s best imaging and design app is at the core of almost every creative project. Work across desktop and mobile devices to create and enhance your photographs, web and mobile app designs, 3D artwork, videos, and more.

Course Length: 6 hours 35 minutes  
Videos:26  
Test Questions:100

Course Name: Adobe Premiere Pro Essentials  
Course Number: A106  
Course description:
Make visually stunning videos virtually anywhere. Adobe Premiere Pro is the industry-leading video editing software, you can edit virtually any type of media in its native format and create professional productions with brilliant color for film, TV, and web.

Course Length: 5 Hours 33 Minutes  
Videos:30  
Test Questions:98

Course Name: Adobe Introduction to Animation  
Course Number: A107
Course description:
Animation comes from the Latin words “anima,” which means “life,” and “animate” which means “to breathe life into” Animation consists of still images (called “frames”) with slight differences between them. When viewed together in a sequence, they give the illusion of motion – like a flipbook.

When thinking about Animation projects, what first comes to mind? Movies and cartoon shows are what people tend to think of first, as they’re the most mainstream. Animation also encompasses:
- Video Games/Interactive media
- Reconstructing events (for courtroom, education or television)
- Education – Help explain difficult concepts in a visual way, such as medicine or science.
- Internet memes/Animated Gifs
- Commercials/Infomercials
- Splash Pages

Business and Accounting Online Courses

<table>
<thead>
<tr>
<th>Course Name: Accounting and Business Basics</th>
<th>Course Number: B101</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course description:</td>
<td></td>
</tr>
<tr>
<td>This course is designed to be a starter course in the accounting stream of learning offered on this site. Topics covered include: Beginning a business, Financial basics, Payroll, and SEO.</td>
<td></td>
</tr>
<tr>
<td>Course Length: 1 Hour 45 Minutes</td>
<td></td>
</tr>
<tr>
<td>Videos: 10</td>
<td></td>
</tr>
<tr>
<td>Test Questions: 58</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Name: Quickbooks</th>
<th>Course Number: B102</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course description:</td>
<td></td>
</tr>
<tr>
<td>This course is training for the Quickbooks accounting software that combines a variety of accounting processes into one user-friendly system. Quickbooks primary function is to alleviate the use of multiple tables, spreadsheets, and tracking sheets necessary to document and maintain accounting tasks at a company. Accounting figures are also easily reconciled for tax purposes with Quickbooks. The software was developed by Intuit and can be customized based on the needs of the business utilizing the software.</td>
<td></td>
</tr>
<tr>
<td>Course Length: 6 Hours 9 Minutes</td>
<td></td>
</tr>
<tr>
<td>Videos: 40</td>
<td></td>
</tr>
<tr>
<td>Test Questions: 158</td>
<td></td>
</tr>
</tbody>
</table>
Course Name: **Quickbooks Point of Sale**  
Course Number: **B103**  
Course description:

QuickBooks Point of Sale helps retailers go far beyond the cash register with an easy-to-use, affordable, scalable, customizable, integrated software and hardware system. It handles routine tasks so retailers can pay more attention to running their business. The solution can track inventory, sales, and customer information, giving retailers more time to think about what to stock, how to price merchandise, when to reorder, and how to serve their customers better.

Course Length: 4 Hours 16 Minutes  
Videos: 34  
Test Questions: 97

Course Name: **Sage 50 Certificate Course**  
Course Number: **B104**  
Course description:

This course is in preparation for the Sage 50 certification exam. This Sage 50 course is the perfect course for those trying to expand their knowledge in accounting, or those looking for an entrance point to attain a position in the field. Sage 50 certification is a staple in the accounting industry and one of the most desirable accounting certifications. Sage 50 has earned their reputation in the accounting field with superior inventory management features and a robust software program to manage almost any companies accounting infrastructure. Sage 50 does more than just assist users in managing day to day accounting tasks. It's a feature rich program that allows accounting professionals to run a company’s books in a timely and efficient manner. This Sage 50 Course will give the student skills ranging from configuration of charts of accounts and invoicing, all the way through advanced skills such as bank reconciliation, setting up a stock system, and managing P&L's. Our course gives students all of the training they need to work all areas of their accounts. Students will have complete skills in sales and purchase, order processing, alongside stock control, project management and foreign trading tools.

Course Length: 10 Hours 8 Minutes  
Videos: 34  
Test Questions: 97

**Cisco Online Courses**

Course Name: **Cisco 100-105: ICND1 - Interconnecting Cisco Networking Devices Part I**  
Course Number: **Ci101**  
Course description:

ICND1 is an exam associated with the Cisco CCENT exam and is a first step to ultimately achieving the CCNA Routing and Switching Certification. Skills developed assist the student in installing, configuring, and troubleshooting small networks as well as working with Cisco routers and switches.

Course Length: 20 Hours 10 Minutes  
Videos: 68  
Test Questions: 245
Course Name: Cisco 200-105: CCNA - ICND2 - Interconnecting Cisco Networking Devices Part 2
Course Number: Ci102
Course description:
Become proficient with network switching and routing concepts including spanning tree protocol, VLAN trunking, dynamic routing protocols and IPv4 and IPv6 troubleshooting. Become proficient with various WAN technologies and encapsulation protocols as well as various aspects of network device management and security.

Course Length: 20 Hours 1 Minutes
Videos: 66
Test Questions: 250

Course Name: Cisco 200-301: Implementing and Administering Cisco Solutions v1.0
Course Number: Ci103
Course description:
CNA - Implementing and Administering Cisco Solutions v1.0 teaches professionals how to install, operate, configure, and verify a basic IPv4 and IPv6 network. You’ll learn how to configure network components, such as a switch, router, and Wireless LAN Controller. You’ll also gain skills needed to manage network devices and identify basic security threats.

This course is recommended for those pursuing their Cisco Certified Network Associate (CCNA) certification, which is the starting point for all Cisco network infrastructure certifications. It’s ideal for entry-level networking engineers, administrators and technicians who support, operate and install Cisco networks.

The new CCNA course and certification now prepares associate-level IT professionals with skills in network security, automation and programmability. You can build a foundation for a broad spectrum of IT careers with the new CCNA.

Course Length: Hours Minutes
Videos:
Test Questions:

Course to be released 2Q 2020

Course Name: Cisco 200-355: Implementing Cisco Wireless Network Fundamentals
Course Number: Ci104
Course description:
This Cisco 200-355 training course will provide students with knowledge of Radio Frequency (RF) and 802.11 technology essentials along with installing, configuring, monitoring and basic troubleshooting tasks needed to support Small Medium Business and Enterprise wireless networks. The Cisco 200-355 is the base level certification for those who would like to prove their wireless networking knowledge using Cisco Systems® or related equipment.
Course Name: **Cisco 210-060 CICD: Implementing Cisco Collaboration Devices**  
Course Number: Ci105  
Course description:  
This Cisco 200-355 training course will provide students with knowledge of Radio Frequency (RF) and 802.11 technology essentials along with installing, configuring, monitoring and basic troubleshooting tasks needed to support Small Medium Business and Enterprise wireless networks. The Cisco 200-355 is the base level certification for those who would like to prove their wireless networking knowledge using Cisco Systems® or related equipment.  
  
Course Length: 15 Hours 26 Minutes  
Videos:55  
Test Questions:245

Course Name: **Cisco 210-065 CIVND: Implementing Cisco Video Network Devices**  
Course Number: Ci106  
Course description:  
This course provides students with the necessary knowledge to describe and implement Cisco Video solution architectures including Cisco Tele-Presence products, video-based endpoints, and digital media platform including digital media players for small to medium size businesses. This course was designed as the second part of a two-part series on Cisco Collaboration technologies which are designed to provide students with the necessary information to earn a CCNA Collaboration certification.  
  
Course Length: 17 hours 42 minutes  
Videos:59  
Test Questions:0

Course Name: **Cisco 210-260: CCNA Security**  
Course Number: Ci107  
Course description:  
Cisco Certified Network Associate Security (Cisco CCNA Security) validates associate-level knowledge and skills required to secure Cisco networks. With a Cisco CCNA Security certification, a network professional demonstrates the skills required to develop a security infrastructure, recognize threats and vulnerabilities to networks, and mitigate security threats.  
  
Course Length: 13 hours 50 minutes  
Videos:51  
Test Questions:250

Course Name: **Cisco 300-101: CCNP - ROUTE - Implementing Cisco IP Routing**  
Course Number: Ci108  
Course description:
Implementing Cisco IP Routing (ROUTE 300-101) is a qualifying exam for the Cisco CCNP Routing and Switching and CCDP certifications. The ROUTE 300-101 exam certifies the routing knowledge and skills of successful candidates. They are certified in using advanced IP addressing and routing in implementing scalable and highly secure Cisco routers that are connected to LANs, WANs, and IPv6. The exam also covers the configuration of highly secure routing solutions to support branch offices and mobile workers.

Course Length: 17 Hours 40 Minutes
Videos: 48
Test Questions: 0

Course Name: **Cisco 300-115: CCNP Routing and Switching SWITCH**
Course Number: Ci109
Course description:
Implementing Cisco IP Switched Networks (SWITCH 300-115) is a qualifying exam for the Cisco CCNP Routing and Switching and CCDP certifications. The SWITCH 300-115 exam certifies the switching knowledge and skills of successful candidates. They are certified in planning, configuring, and verifying the implementation of complex enterprise switching solutions that use the Cisco Enterprise Campus Architecture.

Course Length: 19 Hours 30 Minutes
Videos: 60
Test Questions: 60

Course Name: **Cisco 300-135: Troubleshooting and Maintaining Cisco IP Networks (TSHOOT)**
Course Number: Ci110
Course description:
Implementing Cisco IP Switched Networks (SWITCH 300-115) is a qualifying exam for the Cisco CCNP Routing and Switching and CCDP certifications. The SWITCH 300-115 exam certifies the switching knowledge and skills of successful candidates. They are certified in planning, configuring, and verifying the implementation of complex enterprise switching solutions that use the Cisco Enterprise Campus Architecture.

Course Length: 19 Hours 30 Minutes
Videos: 60
Test Questions: 60

Course Name: **Cisco 640-461: CCNA Voice - ICOMM v8.0 - Cisco Voice and Unified Communications Admin**
Course Number: Ci111
Course description:
The Cisco Certified Network Associate Voice (CCNA Voice) validates associate-level knowledge and skills required to administer a voice network. The Cisco CCNA Voice certification validates that the IT professional has the required skill set for specialized job roles in voice technologies, such as voice technologies administrator, voice engineer, and
voice manager. It validates skills in VoIP technologies such as IP PBX, IP telephony, handset, call control, and voicemail solutions. The CCNA Voice certification assesses skills and knowledge related to the Cisco Unified Communications Manager. It is typically employed by large organizations such as governments, large companies, and colleges. Additionally, the CCNA Voice Certification assesses skills and knowledge related to the Cisco Call Manager Express (CME) and Cisco Unity Express (CUE) solutions typically used by medium and small organizations such as companies with less than 2,000 employees, retail businesses, and small school districts.

Course Length: 14 Hours 25 Minutes
Videos: 84
Test Questions: 0

Course Name: Cisco 640-864: CCDA Cisco Certified Design Associate
Course Number: Ci114
Course description:

This exam requires a foundation or apprentice knowledge of network design for the Cisco converged networks based on borderless network architecture. CCDA certified professionals can design routed and switched network infrastructures and services involving LAN, WAN, wireless, and broadband access for businesses and organizations.

Course Length: Hours 9 Minutes 12
Videos: 51
Test Questions: 60

CompTIA Online Courses

Course Name: CompTIA A+ 220-1001 (Core 1)
Course Number: Co101
Course description:

The CompTIA A+ 220-1001: 220-1002 training for the new Core Series covers expanded content on growing parts of the IT support role including an expansion of baseline security topics and a different approach to defining competency in operational procedures. CompTIA A+ 220-1001 covers mobile devices, networking technology, hardware, virtualization and cloud computing, and network troubleshooting. The CompTIA A+ 220-1002 course covers Operating Systems, Security, Software Troubleshooting and Operational Procedures.

Course Length: 37 Hours 20 Minutes
Videos: 121
Test Questions: 331

Course Name: CompTIA A+ 220-1002 (Core 2)
Course Number: Co102
Course description:

The CompTIA A+ 220-1001: 220-1002 training for the new Core Series covers expanded content on growing parts of the IT support role including an expansion of baseline security

Course Length: 37 Hours 20 Minutes
Videos: 121
Test Questions: 331

Course Name: CompTIA Advanced Security Practitioner (CASP) CAS-003
Course Number: Co103
Course description:
The CompTIA CASP+ training course, Advanced Security Practitioner (CASP-003) course provides advanced-level training in risk management, enterprise security operations and architecture, research and collaboration, and integration of enterprise security. It covers all of the new exam objectives for the CAS-003 exam. The CompTIA CASP+ certification is the highest-level security certification offered by CompTIA and is the final step in achieving. The new course is intended for advanced students and cyber security practitioners who will implement cyber security. This course you will advance your skills in the following areas:

- Risk Management
- Enterprise Security Architecture
- Enterprise Security Operations
- Technical Integration of Enterprise Security
- Research, Development and Collaboration

Course Length: 28 Hours
Videos: 89
Test Questions: 250

Course Name: CompTIA Cybersecurity Analyst (CySA+)
Course Number: Co104
Course description:
Cybersecurity certification is an ongoing requirement for government agencies. The CompTIA CySA+ was developed with a focus on meeting government requirements to certify IT, workers or contractors. With a Cybersecurity certification, you display an understanding of security best practices and protocols beyond that which is provided by the Security+ certification. You will prove a level of expertise beyond that of basic security practices that are followed when using a computer. This allows any employee to prove a better understanding of enterprise security practices, and the necessary tools needed to protect a company network. The modules of this course align with the official objectives of the certification. The course expands past the scope of the certification. It also provides real-life examples and lead-ins to direct further study. This will give students an easier understanding of the material for the certification as well as a basic understanding to apply to real-life applications.
<table>
<thead>
<tr>
<th>Course Name</th>
<th>Course Number</th>
<th>Course Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CompTIA Cloud Overview</td>
<td>Co105</td>
<td>The CompTIA Cloud Essential certification is applicable to a wide range of IT professionals. This course is geared towards IT professionals currently in or looking for positions as IT consultants, IT technical services, IT relationship managers, IT architects, consultants and business process owners’ analysts. This course is the first step on a training path that leads to a technical career in cloud computing.</td>
</tr>
<tr>
<td>CompTIA CV0-001: CompTIA Cloud+</td>
<td>Co106</td>
<td>The CompTIA Cloud+ certification validates the knowledge and best practices required of IT practitioners working in cloud computing environments, who must understand and deliver cloud infrastructure. Recommended experience includes at least 24-36 months of work experience in IT networking, storage, or data center administration, and familiarity with any major hypervisor technologies for server virtualization.</td>
</tr>
<tr>
<td>CompTIA FC0-U61: IT Fundamentals</td>
<td>Co107</td>
<td>The IT Fundamentals course leading to a CompTIA certification is ideal for you if you’re considering a career in IT or if you work in an allied field that requires a broad understanding of IT, like in a sales role at an IT company. CompTIA IT Fundamentals can be a steppingstone to more advanced certifications such as CompTIA A+, and, with specialized experience, CompTIA Network+ and CompTIA Security+. But if you are new to IT or need to have a broad working knowledge of the IT Industry, this IT Fundamentals Course is a perfect choice.</td>
</tr>
<tr>
<td>CompTIA LX0-101 &amp; LX0-102: CompTIA Linux+</td>
<td>Co108</td>
<td></td>
</tr>
</tbody>
</table>

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
The CompTIA Linux+ Certification is a junior level certification for Linux administrators. Students should be able to perform maintenance tasks with the command line, install and configure a workstation, and be able to configure a basic network.

Course Length: 16 Hours 35 Minutes
Videos:100
Test Questions:60

Course Name: **CompTIA N10-007: Network+**

Course Number: **Co109**

Course description:

The CompTIA Network+ course prepares the student to take the CompTIA Network+ N10-007 certification exam. It covers all exam (N10-007) objectives and additional topics that provide background and context. Demonstrations and instructor commentary throughout the course come from real-world experience. Included are examples and tips that the network professional can use in a production network environment. This course is ideal for an individual developing a career in an IT infrastructure group. During this network course, you will learn concepts that cover troubleshooting, network management, installation and configuration of networks.

Course Length: 26 Hours
Videos:162
Test Questions:254

Course Name: **CompTIA MB0-001: Mobility+**

Course Number: **Co110**

Course description:

The CompTIA Mobility+ exam covers mobile device management, troubleshooting, security, and network infrastructure. It identifies IT professionals who can deploy, integrate, support and manage a mobile environment while ensuring proper security measures are maintained for devices and platforms to mitigate risks and threats.

Course Length: 8 Hours 25 Minutes
Videos:48
Test Questions:60

Course Name: **CompTIA PenTest+ (PT0-001)**

Course Number: **Co111**

Course description:

Learn penetration testing with the CompTIA PenTest+ (PT0-001) course. This highly hands-on course gives participants experience in network and system penetration testing. It covers all of the exam objectives for the CompTIA PenTest+ PT0-001 exam. Also included is an extensive step-by-step 47 page <strong>Lab Setup Guide</strong> that details every aspect of setting up a virtual environment so you can practice all aspects of this training course. We believe this is one of the most comprehensive courses covering penetration testing available anywhere.

Course Length: 26 Hours
Course Name: **CompTIA SY0-501: Security+**  
Course Number: Co112  
Course description:
Looking for a Security+ certification? The CompTIA Security+ certification course is designed to teach students security basics and prepare them for testing to become CompTIA Security+ certified. The CompTIA Security+ covers many vendor neutral topics including different types of threats and attacks, networking technologies and tools, secure design and architecture, identity and access management, risk assessment and management, and finishes up with Cryptography and Public Key Infrastructure. This covered everything from the ever-expanding virtualization of various computing systems to industry management of smart devices. These topics will be covered from a ground-up perspective so that even inexperienced students will be able to follow along. IT security is an ever-growing field and its importance is recognized universally throughout the industry. This continues to make getting a security certification more important than ever.

Course Length: 20 Hours 49 Minutes  
Videos: 81  
Test Questions: 250

---

Course Name: **Unix Administration Basics**  
Course Number: Co113  
Course description:
Unix Administration Basics Course. Topics covered in this course include: VirtualBox, Basic commands, Special characters, File editing, Filesystem structure, Finding files, Shell special characters, Regular expressions, Process management, Job scheduling, Customizing your account, UNIX printing, Networking, X Windows, Backup and compression, Text utilities, Shell scripting, System administration basics.

Course Length: 14 Hours 15 Minutes  
Videos: 106  
Test Questions: 60

---

Course Name: **EXIN Cloud Computing**  
Course Number: Co114  
Course description:
EXIN's Cloud Computing Foundation is not only a technical cloud course but focuses on the business and management side of cloud computing as well. This course also examines the auditing and service response within cloud computing, as well the delegation of IT responsibilities within an environment focused on cloud technology. This course covers how cloud technology deals with a variety of different areas, including Hardware, Software, Processes, OS and Application Licenses, People, Power, and Backups.

Course Length: 8 Hours 1 Minute  
Videos: 65  
Test Questions: 81
Course Name: **CompTIA Security Analytics Expert - CSAE**  
Course Number: **Co150B**  
Course description:

The CompTIA CSAE is a stackable certification by CompTIA. It is designed for IT professionals with 5 or more years of experience. The Certification Path for the CompTIA CSAE certification consists of the learning materials to allow you to study for and pass the CompTIA Security+, CompTIA Cybersecurity Analyst (CySA+) and CompTIA CASP+ exams. <strong>Completing this path and passing the three exams means you end up with three CompTIA certifications and are designated a CompTIA Security Analytics Expert. This Certification Path will enable you to study to obtain the CompTIA CSAE designation.</strong>

Course Length: Hours 66 Minutes  
Videos: 237  
Test Questions: 750

### Course Name: **CompTIA Security Infrastructure Expert - CSIE**  
### Course Number: **Co151B**  
### Course description:

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>CompTIA A+ 220-1001 (Core 1)</td>
<td>Co101</td>
</tr>
<tr>
<td>CompTIA A+ 220-1002 (Core 2)</td>
<td>Co102</td>
</tr>
<tr>
<td>CompTIA N10-007: Network+</td>
<td>Co109</td>
</tr>
</tbody>
</table>

Please see individual course for details.

### Course Name: **Cybersecurity Expert Bundle**  
### Course Number: **Co152B**  
### Course description:

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>CompTIA SY0-501: Security+</td>
<td>Co112</td>
</tr>
<tr>
<td>CompTIA Cybersecurity Analyst (CySA+)</td>
<td>Cy105</td>
</tr>
<tr>
<td>CompTIA Advanced Security Practitioner (CASP) CAS-003</td>
<td>Co103</td>
</tr>
<tr>
<td>Cloud Computing Security Knowledge (CCSK)</td>
<td>Cy103</td>
</tr>
<tr>
<td>Cisco 210-260: Cisco CCNA Security</td>
<td></td>
</tr>
<tr>
<td>Hacking Essentials</td>
<td></td>
</tr>
<tr>
<td>Digital Forensics</td>
<td></td>
</tr>
<tr>
<td>Incident Response (CND)</td>
<td></td>
</tr>
<tr>
<td>CompTIA PenTest+ (PT0-001)</td>
<td>Co111</td>
</tr>
</tbody>
</table>

Please see individual course for details.

### Course Name: **CompTIA Network Security Professional - CNSP**  
### Course Number: **Co153B**  
### Course description:
Please see individual course for details.

Course Name: CompTIA Network Vulnerability Assessment Professional - CNVP
Course Number: Co154B
Course description:

<table>
<thead>
<tr>
<th>Course Name: CompTIA Network Vulnerability Assessment Professional - CNVP</th>
<th>Course Number: Co154B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course description:</td>
<td></td>
</tr>
<tr>
<td>CompTIA SY0-501: Security+</td>
<td>Co112</td>
</tr>
<tr>
<td>CompTIA PenTest+ (PT0-001)</td>
<td>Co111</td>
</tr>
</tbody>
</table>

Please see individual course for details

Course Name: CompTIA Secure Cloud Professional - CSCP
Course Number: Co155B
Course description:

<table>
<thead>
<tr>
<th>Course Name: CompTIA Secure Cloud Professional - CSCP</th>
<th>Course Number: Co155B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course description:</td>
<td></td>
</tr>
<tr>
<td>CompTIA SY0-501: Security+</td>
<td>Co112</td>
</tr>
<tr>
<td>CompTIA CV0-001: CompTIA Cloud +</td>
<td>Co106</td>
</tr>
</tbody>
</table>

Please see individual course for details.

Course Name: CompTIA Security Analytics Professional - CSAP
Course Number: Co156B
Course description:

<table>
<thead>
<tr>
<th>Course Name: CompTIA Security Analytics Professional - CSAP</th>
<th>Course Number: Co156B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course description:</td>
<td></td>
</tr>
<tr>
<td>CompTIA SY0-501: Security+</td>
<td>Co112</td>
</tr>
<tr>
<td>CompTIA Cybersecurity Analyst (CySA+)</td>
<td>Cy105</td>
</tr>
<tr>
<td>CompTIA Advanced Security Practitioner (CASP) CAS-003</td>
<td>Co103</td>
</tr>
</tbody>
</table>

Please see individual course for details.

Course Name: CompTIA Secure Infrastructure Specialist - CSIS
Course Number: Co157B
Course description:

<table>
<thead>
<tr>
<th>Course Name: CompTIA Secure Infrastructure Specialist - CSIS</th>
<th>Course Number: Co157B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course description:</td>
<td></td>
</tr>
<tr>
<td>CompTIA SY0-501: Security+</td>
<td>Co112</td>
</tr>
<tr>
<td>CompTIA Cybersecurity Analyst (CySA+)</td>
<td>Cy105</td>
</tr>
<tr>
<td>CompTIA Advanced Security Practitioner (CASP) CAS-003</td>
<td>Co103</td>
</tr>
<tr>
<td>CompTIA PenTest+ (PT0-001)</td>
<td>Co111</td>
</tr>
</tbody>
</table>

Please see individual course for details.
Course Name: **CompTIA Cloud Admin Professional – CCAP**

Course Number: **Co159B**

Course description:

<table>
<thead>
<tr>
<th>Course</th>
<th>Co106</th>
</tr>
</thead>
<tbody>
<tr>
<td>CompTIA CV0-001: CompTIA Cloud +</td>
<td></td>
</tr>
</tbody>
</table>

Please see individual course for details.

Course Name: **CompTIA IT Operations Specialist - CIOS**

Course Number: **Co161B**

Course description:

<table>
<thead>
<tr>
<th>Course</th>
<th>Co107</th>
</tr>
</thead>
<tbody>
<tr>
<td>CompTIA FC0-U61: IT Fundamentals</td>
<td></td>
</tr>
<tr>
<td>CompTIA A+ 220-1001 (Core 1)</td>
<td>Co101</td>
</tr>
<tr>
<td>CompTIA A+ 220-1002 (Core 2)</td>
<td>Co102</td>
</tr>
<tr>
<td>CompTIA N10-007: Network+</td>
<td>Co109</td>
</tr>
<tr>
<td>CompTIA SY0-501: Security+</td>
<td>Co112</td>
</tr>
</tbody>
</table>

Please see individual course for details.

**Cybersecurity Online Courses**

Course Name: **Certified Information Security Manager (CISM)**

Course Number: **Cy101**

Course description:

IT Security is without question one of the hottest and most lucrative areas of Information Technology today and the CISM Certification is one of the most valued credentials in the marketplace. This course promotes international practices and provides management with assurance that those earning this designation have the necessary knowledge and experience to provide effective security management. This course trains students for a position in Risk Management, Security Auditor, Compliance Officer or an executive management position as a CSO, CTO or CIO.

Course Length: 12 Hours 38 Minutes

Videos: 298

Test Questions: 94

Course Name: **Certified Information Systems Auditor (CISA)**

Course Number: **Cy102**

Course description:

CISA is to Audit what CPA and CA are to Accounting. CISAs are recognized internationally as professionals with the knowledge, skills, experience and credibility to leverage standards, manage vulnerabilities, ensure compliance, offer solutions, institute controls and deliver value to the enterprise. CISA job practice analysis has been completed by ISACA. This analysis resulted in a new CISA job practice which reflects the vital and
The evolving responsibilities of IT auditors. The new CISA job practice was effective beginning with the CISA exam administration in June 2011. For purposes of these statements, the terms "enterprise" and "organization" or "organizational" are considered synonymous.

Course Length: 12 Hours 48 Minutes  
Videos:74  
Test Questions:55

**Course Name: Cloud Computing Security Knowledge (CCSK)**  
**Course Number:** Cy103  
**Course description:**

The Cloud Computing Security Knowledge class provides students thorough coverage of cloud security fundamentals and prepares them to take the Cloud Security Alliance CCSK certification exam. The course begins with a detailed description of cloud computing and expands into all major domains such as Governance and Risk Management, the Cloud Architectural Framework, and Business Continuity/Disaster Recovery. Upon course completion, students will be prepared for the CCSK Exam, and experts in the following topics: understanding cloud computing, security challenges, cloud computing security, controls recommendation, elasticity, resiliency and measured usage, and understand the cloud computing architectural framework.

Course Length: 9 Hours 25 Minutes  
Videos:62  
Test Questions:89

**Course Name: Computer Hacking Forensic Investigator (CHFI)**  
**Course Number:** Cy104  
**Course description:**

CHFI certifies individuals in the specific security discipline of computer forensics from a vendor-neutral perspective. The CHFI certification will fortify the application knowledge of law enforcement personnel, system administrators, security officers, defense and military personal, legal professionals, bankers, security professionals, and anyone who is concerned about the integrity of the network infrastructure.

Course Length: Hours   18 Minutes43  
Videos:133  
Test Questions:62

**Course Name: CompTIA Cybersecurity Analyst (CySA+)**  
**Course Number:** Cy105  
**Course description:**

The CompTIA CySA+ is a vendor-neutral certification. A student normally has three to four years of experience in a related field as well as a Security+ or equivalent knowledge. In this regard, the CompTIA CySA+ lies between the CompTIA-Security+ SY0-501 CompTIA Advanced Security Practitioner (CASP) exams. It is an excellent go-between to tackle before diving into the CASP, but when the CompTIA Security+ isn’t enough.
Course Name: CompTIA Security+ SY0-501  
Course Number: Cy106  
Course description:  
Looking for a Security+ certification? The CompTIA Security+ certification course is designed to teach students security basics and prepare them for testing to become CompTIA Security+ certified. The CompTIA Security+ covers many vendor neutral topics including different types of threats and attacks, networking technologies and tools, secure design and architecture, identity and access management, risk assessment and management, and finishes up with Cryptography and Public Key Infrastructure. This covered everything from the ever-expanding virtualization of various computing systems to industry management of smart devices. These topics will be covered from a ground-up perspective so that even inexperienced students will be able to follow along. IT security is an ever-growing field and its importance is recognized universally throughout the industry. This continues to make getting a security certification more important than ever.

Course Length: 20 Hours 49 Minutes  
Videos: 81  
Test Questions: 250

Course Name: Cyber Security and Awareness  
Course Number: Cy107  
Course description:  
This Cyber Security Awareness and Prevention course will teach you how to keep your network safe, how to stay safe on the internet, how to keep your email safe, how to use anti-virus software and much more. You will walk away from this training with a level of understanding that will let you apply the proper amount of digital protection to your home or office computer systems.

Course Length: 7 Hours 08 Minutes  
Videos: 39  
Test Questions: 30

Course Name: Data Security Compliance  
Course Number: Cy108  
Course description:  
This course outlines important data security measures to be taken by individuals to protect sensitive data and PI. Some of the topics include how to prevent data breaches, safeguard, protecting your personal information, and different types of breaches. The security measures outlined in this course not only protect the individual (mobile devices, etc.) but also protect data up to the corporate level. These safe practices can prevent hacking into personal social media accounts up to hacking of sensitive corporate data and data breaches. Learn how to better protect yourself and your company by implementing these security measures into your usage.
Course Name: Forensic Investigator in Computer Hacking  
Course Number: Cy109  
Course description:
Gain knowledge in the specific security discipline of computer forensics from a vendor-neutral perspective. This course will fortify the application knowledge of law enforcement personnel, system administrators, security officers, defense and military personnel, legal professionals, bankers, security professionals, and anyone who is concerned about the integrity of the network infrastructure.

The “Ethical Hacking” and “Forensic Investigator in Computer Hacking” course(s) are unofficial programs that have been developed independently of EC-Council. EC-Council has not been endorsed, sponsored or certified this material at any time whatsoever. Usage of these material/books does not provide any guarantee of passing the EC-Council exam.

Course Length: Hours 18 Minutes 43  
Videos: 133  
Test Questions: 62

Cloud Online Courses

Course Name: CompTIA CV0-001: CompTIA Cloud +  
Course Number: Co106  
Course description:
The CompTIA Cloud+ certification validates the knowledge and best practices required of IT practitioners working in cloud computing environments, who must understand and deliver cloud infrastructure.Recommended experience includes at least 24-36 months of work experience in IT networking, storage, or data center administration, and familiarity with any major hypervisor technologies for server virtualization.

Course Length: 9 Hours 52 Minutes  
Videos: 53  
Test Questions: 55

Course Name: CompTIA Cloud Overview  
Course Number: Co105  
Course description:
The CompTIA Cloud Essential certification is applicable to a wide range of IT professionals. This course is geared towards IT professionals currently in or looking for positions as IT consultants, IT technical services, IT relationship managers, IT architects, consultants and business process owners’ analysts. This course is the first step on a training path that leads to a technical career in cloud computing.

Course Length: 7 Hours 19 Minutes  
Videos: 44  
Test Questions: 62
Course Name: **EXIN Cloud Computing**  
Course Number: **Co114**  
Course description:

EXIN's Cloud Computing Foundation is not only a technical cloud course but focuses on the business and management side of cloud computing as well. This course also examines the auditing and service response within cloud computing, as well the delegation of IT responsibilities within an environment focused on cloud technology. This course covers how cloud technology deals with a variety of different areas, including Hardware, Software, Processes, OS and Application Licenses, People, Power, and Backups.

Course Length: 8 Hours 1 Minute  
Videos:65  
Test Questions:81

Course Name: **Cloud Computing Security Knowledge (CCSK)**  
Course Number: **Is102**  
Course description:

The Cloud Computing Security Knowledge class provides students thorough coverage of cloud security fundamentals and prepares them to take the Cloud Security Alliance CCSK certification exam. The course begins with a detailed description of cloud computing and expands into all major domains such as Governance and Risk Management, the Cloud Architectural Framework, and Business Continuity/Disaster Recovery. Upon course completion, students will be prepared for the CCSK Exam, and experts in the following topics: understanding cloud computing, security challenges, cloud computing security, controls recommendation, elasticity, resiliency and measured usage, and understand the cloud computing architectural framework.

Course Length: 9 Hours 25 Minutes  
Videos:62  
Test Questions:89

Course Name: **Microsoft AZ-203: Developing Solutions for Microsoft Azure**  
Course Number: **M149**  
Course description:

This course prepares you for the Microsoft Certification Exam AZ-203. By the end of this course, you will be able to Develop Azure IaaS computer solution, Develop Azure PaaS computer solution, Develop for Azure storage, Implement Azure security, Monitor, troubleshoot and optimize solutions, as well as Connect to and consumer Azure and third-party services. You will become proficient in developing apps and services, using Azure tools and technologies. Cloud Technologies are a great skill to learn and having these skills will assist in becoming or adding to your skillset as a Cloud Architect, Cloud DBA, Cloud Admin and many more.

Course Length: 19 Hours 54 Minutes  
Videos:46
Course Name: Microsoft 70-246: Monitoring and Operating a Private Cloud 2012
Course Number: M121
Course description:
Prepare for Microsoft Exam 70-246—and help demonstrate your real-world mastery of monitoring and operating a private cloud based on Microsoft System Center 2012 R2. Designed for experienced IT professionals ready to advance their status, focuses on the critical-thinking and decision-making acumen needed for success at the MCSE level.

Course Length: 15 Hours 36 Minutes
Videos:58
Test Questions:22

Course Name: Microsoft 70-247: Deploying and Operating a Private Cloud 2012
Course Number: M122
Course description:
Prepare for Microsoft Exam 70-247—and help demonstrate your real-world mastery configuring and deploying a private cloud using Microsoft System Center 2012 R2. Designed for experienced IT professionals ready to advance their status, focuses on the critical-thinking and decision-making acumen needed for success at the MCSE level.

Course Length: 18 Hours 1 Minute
Videos:65
Test Questions:60

Course Name: VMWare vSphere VCP 5.5
Course Number: V101
Course description:
This course is in preparation for the VMware® vSphere® 5.5 certification exam. VMware® vSphere® 5.5. Virtualization has taken the industry by storm, and those that possess skills in this area have many job prospects paying in excess of 80k per year. Students will learn installing, configuring, and managing VMware vSphere, as well as learn how to configure a scalable virtual infrastructure. Some of the topics covered in this course include Fault Tolerance, vSphere Management Assistant, Storage vMotion, and DPM.

Course Length: 8 Hours 30 Minutes
Videos:61
Test Questions:60

Course Name: VMWare vSphere VCP 6.7
Course Number: V102
Course description:
vSphere 6.7 Fundamentals training course provides the foundational knowledge necessary for administrators to effectively use VMware vSphere 6.7. You will learn how to install, configure, administer and more in this virtualization and cloud platform. Virtualization and
Cloud Computing are great skills to learn and possessing these skills will allow you to start or enhance your role in the market. The course topics will prepare you to take and pass the VMware vSphere 6.7 Foundations Exam 2019. In this course you'll learn the information necessary to create a full vSphere lab environment, running on a Gigabyte BRIX Mini-PC. After the initial lab creation, using Image Builder and PowerCLI, you'll learn the basics of how the vSphere components work. We'll then go through the configuration of networking and storage, including VSAN. We'll go through creating a virtual machine and using templates and clones, and then we'll cover using vMotion and Snapshots. After the completion of this course, you'll have a running VMware vSphere environment for use for exam prep, or to improve your knowledge and experience with vSphere.

Course Length: 20 Hours 10 Minutes
Videos:67
Test Questions:101

EC-Council Online Course

Course Name: Certified Ethical Hacker (CEH) v.10
Course Number: Ec101
Course description:
The “Ethical Hacking” and “Forensic Investigator in Computer Hacking” course(s) are unofficial programs that have been developed independently of EC-Council. EC-Council has not been endorsed, sponsored or certified this material at any time whatsoever. Usage of these material/books does not provide any guarantee of passing the EC-Council exam.

Course Length: 32 Hours 57 Minutes
Videos:239
Test Questions:249

ISACA Online Courses

Course Name: Certified Information Security Manager (CISM)
Course Number: Ia101
Course description:
IT Security is without question one of the hottest and most lucrative areas of Information Technology today and the CISM Certification is one of the most valued credentials in the marketplace. This course promotes international practices and provides management with assurance that those earning this designation have the necessary knowledge and experience to provide effective security management. This course trains students for a position in Risk Management, Security Auditor, Compliance Officer or an executive management position as a CSO, CTO or CIO.

Course Length: 12 Hours 38 Minutes
Videos:298
Test Questions:94

Course Name: Certified Information Systems Auditor (CISA)
Course Number: **Ia102**  
**Course description:**

CISA is to Audit what CPA and CA are to Account. CISAs are recognized internationally as professionals with the knowledge, skills, experience and credibility to leverage standards, manage vulnerabilities, ensure compliance, offer solutions, institute controls and deliver value to the enterprise. CISA job practice analysis has been completed by ISACA. This analysis resulted in a new CISA job practice which reflects the vital and evolving responsibilities of IT auditors. The new CISA job practice was effective beginning with the CISA exam administration in June 2011. For purposes of these statements, the terms "enterprise" and "organization" or "organizational" are considered synonymous.

Course Length: 12 Hours 48 Minutes  
Videos: 74  
Test Questions: 55

---

**ISC² Online Courses**

**Course Name:** Certified Information Systems Security Pro (CISSP)  
**Course Number:** Is101  
**Course description:**

The vendor neutral CISSP certification is the ideal credential for those with proven deep technical and managerial competence, skills, experience, and credibility to design, engineer, implement, and manage their overall information security program to protect organizations from growing sophisticated attacks. Backed by (ISC)², the globally recognized, not-for-profit organization dedicated to advancing the information security field, the CISSP was the first credential in the field of information security to meet the stringent requirements of ISO/IEC Standard 17024. Not only is the CISSP an objective measure of excellence, but also a globally recognized standard of achievement. **NOTE: Effective April 15, 2015, the CISSP exam is based on a new exam blueprint.**

Course Length: 20 Hours 36 Minutes  
Videos: 44  
Test Questions: 60

**Course Name:** Cloud Computing Security Knowledge (CCSK)  
**Course Number:** Is102  
**Course description:**

The Cloud Computing Security Knowledge class provides students thorough coverage of cloud security fundamentals and prepares them to take the Cloud Security Alliance CCSK certification exam. The course begins with a detailed description of cloud computing and expands into all major domains such as Governance and Risk Management, the Cloud Architectural Framework, and Business Continuity/Disaster Recovery. Upon course completion, students will be prepared for the CCSK Exam, and experts in the following topics: understanding cloud computing, security challenges, cloud computing security, controls recommendation, elasticity, resiliency and measured usage, and understand the cloud computing architectural framework.

Course Length: 9 Hours 25 Minutes
ITIL Online Courses

Course Name: Information Technology Infrastructure Library (ITIL Foundations V3)
Course Number: It101
Course description:
This ITIL Foundation course covers the IT Infrastructure Library best practices. ITIL is globally accepted as the most widely used best practices for IT service management. This course gives students the necessary knowledge to enter or enhance their career in project management or IT service management. Companies that use ITIL best practices range from the Fortune 500 market, Government, DOD, small businesses, and is used internationally. This course covers the 5 main concepts within ITIL Service Strategy, Design, Transition, Operation and Continual Service Improvement.

Course Length: 8 Hours 10 Minutes
Videos:95
Test Questions:60

Course Name: Information Technology Infrastructure Library (ITIL) - Service Operation
Course Number: It102
Course description:
Service Operation focuses on delivery and control process activities and aims for a steady state of managing services. In this course, you will learn the principles, processes, common activities, and implementation considerations of ITIL® service operation. are in the process of becoming accredited for this course by ACQUIROS. ACQUIROS is an Examination Institute of AXELOS Limited.

Course Length: 10 Hours 2 Minutes
Videos:35
Test Questions:95

Microsoft Online Technical Courses

Course Name: Microsoft 70-243: Administering and Deploying SCCM 2012
Course Number: M101
Course description:
This course prepares you to accomplish the following in order to prepare for the 70-243 exam: Design and plan System Center Configuration Manager infrastructure, Manage operating system deployment (OSD), Deploy applications and software updates, Manage compliance settings, Manage sites, Manage clients, Manage inventory, Manage reports and queries.
Course Name: Microsoft 70-331: Core Solutions of SharePoint Server 2013
Course Number: M102
Course description:
This course will provide you with the knowledge and skills to configure and manage a Microsoft SharePoint Server 2013 environment, as well as provide guidelines, best practices, and considerations that will help optimize your SharePoint server deployment.

Course Name: Microsoft 70-332: Advanced Solutions of SharePoint Server 2013
Course Number: M103
Course description:
This course examines how to plan, configure, and manage a Microsoft SharePoint Server 2013 environment. Special areas of focus include implementing high availability, disaster recovery, service application architecture, business connectivity services, social computing features, productivity and collaboration platforms and features, business intelligence solutions, enterprise content management, and web content management infrastructure, solutions, and apps. The course also examines how to optimize the search experience, how to develop and implement a governance plan, and how to perform an upgrade or migration to SharePoint Server 2013.

Course Name: Microsoft 70-341: Core Solutions of Exchange Server 2013
Course Number: M104
Course description:
This course covers the following topics in order to prepare students for the Microsoft 70-341 Course Solutions of Exchange Server 2013 exam: how to plan, install, configure, and manage transport, mailbox role, and client access, as well as design and manage an Exchange infrastructure.

Course Name: Microsoft 70-342: Advanced Solutions of Exchange Server 2013
Course Number: M105
Course description:
This course covers the following topics in order to prepare students for the Microsoft 70-342 Advanced Solutions of Exchange Server 2013 exam: how to configure, manage, and migrate unified messaging, how to design, configure, and manage site resiliency, how to design, configure, and manage advanced security, how to configure and manage compliance, archiving, and discovery solutions, and how to implement and manage coexistence, hybrid scenarios, migration, and federation.

Course Length: 6 Hours 31 Minutes
Videos: 49
Test Questions: 99

Course Name: Microsoft 70-413: Designing and Implementing a Server Infrastructure
Course Number: M106
Course description:
This course covers the following topics in order to prepare students for the Microsoft 70-413: Designing and Implementing a Server Infrastructure exam: how to plan and deploy a server infrastructure, design and implement network infrastructure services, design and implement network access services, design and implement an Active Directory infrastructure (logical), and design and implement an Active Directory infrastructure (physical).

Course Length: 5 Hours 3 Minutes
Videos: 75
Test Questions: 60

Course Name: Microsoft 70-414: Implementing an Advanced Server Infrastructure
Course Number: M107
Course description:
This course covers the following topics in order to prepare students for the Microsoft 70-414: Implementing an Advanced Server Infrastructure exam: how to manage and maintain a server infrastructure, plan and implement a highly available enterprise infrastructure, plan and implement a server virtualization infrastructure, and design and implement identity and access solutions.

Course Length: 5 Hours
Videos: 31
Test Questions: 56

Course Name: Microsoft 70-432: SQL Server 2008 Implementation and Maintenance
Course Number: M108
Course description:
This course will cover the following topics to prepare students for the Microsoft 70-432: SQL Server 2008 Implementation and Maintenance exam: how to install and configuring SQL Server 2008, maintaining SQL Server instances, managing SQL Server security, maintaining a SQL Server database, performing data management tasks, monitoring and troubleshooting SQL Server, optimizing SQL Server performance, and implementing high availability. Microsoft certifications are in high demand across small and large Information Technology organizations around the world. Hiring managers prefer candidates who not
only have an understanding of the topic(s) and experience but having the training certification in the subject. As a result, all Microsoft certifications are accepted worldwide and are part of the industry standards.

Course Length: 9 Hours 10 Minutes
Videos: 146
Test Questions: 58

**Course Name:** Microsoft 70-448: Microsoft SQL Server 2008, Business Intelligence Development and Maintenance

**Course Number:** M109

**Course description:**

This course covers the following topics to prepare students for the 70-448 Microsoft SQL Server 2008 Business Intelligence Development and Maintenance exam: how to implement SSIS, SSAS, and SSRS solutions, as well as how to configure, deploy and maintain SSIS, SSAS, and SSRS solutions.

Course Length: 8 Hours 32 Minutes
Videos: 94
Test Questions: 59

**Course Name:** Microsoft 70-461: Querying SQL Server 2012

**Course Number:** M110

**Course description:**

This course provides students with the technical skills required to be prepared for the 70-461 Querying SQL Server 2012 exam. Students will acquire the skills to write basic Transact-SQL queries for Microsoft SQL Server 2012, which is the foundation for all SQL Server-related disciplines; namely Database Administration, Database Development and Business Intelligence.

Course Length: 12 Hours 22 Minutes
Videos: 84
Test Questions: 53

**Course Name:** Microsoft 70-462: Administering SQL Server 2012 Databases

**Course Number:** M111

**Course description:**

This course is preparation for the 70-462 Administering SQL Server 2012 exam. This course provides students with the knowledge and skills to maintain a Microsoft SQL Server 2012 database and focuses on teaching students how to use SQL Server 2012 product features and tools related to maintaining a database.

Course Length: 8 Hours 24 Minutes
Videos: 62
Test Questions: 45

**Course Name:** Microsoft 70-463: Implementing a Data Warehouse with SQL Server 2012

**Course Number:** M112
Course description:
This course is preparation for the 70-463 Implementing a Data Warehouse with SQL Server 2012 exam. The course covers topics that are featured on the exam, such as how to implement a data warehouse platform to support a BI solution, how to create a data warehouse with Microsoft SQL Server 2012, implement ETL with SQL Server Integration Services, and validate and cleanse data with SQL Server Data Quality Services and SQL Server Master Data Services.

Course Length: 7 Hours 3 Minutes
Videos: 69
Test Questions: 44

Course Name: Microsoft 70-464: Developing Microsoft SQL Server 2012 Databases
Course Number: M113
Course description:
This course is in preparation for the Microsoft 70-464 Developing Microsoft SQL Server 2012 Databases exam. This course covers logical table design, indexing and query plans, and focuses on the creation of database objects including views and stored procedures, along with parameters and functions. Other common aspects of procedure coding, such as indexes, concurrency, error handling, and triggers are also covered in this course. It will guide you through real world application of design concepts and tolls needed for successful SQL Server database development.

Course Length: 10 Hours 41 Minutes
Videos: 59
Test Questions: 59

Course Name: Microsoft 70-465: Designing Database Solutions for Microsoft SQL Server 2012
Course Number: M114
Course description:
This course prepares students for the Microsoft 70-465 Designing Database Solutions for Microsoft SQL Server 2012 exam. The course teaches students how to plan and implement enterprise database infrastructure solutions by using SQL Server 2012 and other Microsoft technologies. The course describes how to consolidate SQL Server workloads, work with both on-premises and Microsoft Azure cloud-based solutions, and how to plan and implement high availability and disaster recovery solutions.

Course Length: 9 Hours 45 Minutes
Videos: 56
Test Questions: 40

Course Name: Microsoft 70-466: Implementing Data Models & Reports with SQL Server 2012
Course Number: M115
Course description:
This course prepares students for the Microsoft 70-466: Implementing Data Models & Reports with SQL Server 2012 exam. The course focuses on creating managed enterprise BI solutions and covers how to implement multidimensional and tabular data models, deliver reports with Microsoft SQL Server Reporting Services, create dashboards with Microsoft SharePoint Server Performance Point Services, and discover business insights by using data mining.

Course Length: 13 Hours 4 Minutes
Videos: 47
Test Questions: 42

Course Name: Microsoft 70-685 Pro: Windows 7, Enterprise Desktop Support Technician
Course Number: M116
Course description:
This course covers the following topics in order to prepare students for the Microsoft 70-685 Pro: Windows 7, Enterprise Desktop Support Technician exam: Identifying cause of and resolving desktop application issues, identifying cause of and resolving networking issues, managing and maintaining systems that run Windows 7 client, supporting mobile users, and identifying cause of and resolving security issues.

Course Length: 14 Hours 20 Minutes
Videos: 96
Test Questions: 58

Course Name: Microsoft 70-687: Configuring Windows 8
Course Number: M117
Course description:
This course is preparation for the Microsoft 70-687 Configuring Windows 8 certification exam. Candidates for this exam are students seeking to be IT professionals who configure or support Windows 8 computers, devices, users, and associated network and security resources. The networks with which these professionals typically work are configured as domain-based or peer-to-peer environments with access to the Internet and cloud services. The IT professional could be a consultant, a full-time desktop support technician, or an IT generalist who administers Windows 8–based computers and devices as a portion of their broader technical responsibilities.

Course Length: 15 Hours 49 Minutes
Videos: 71
Test Questions: 60

Course Name: Microsoft 70-640 TS: Configuring Windows Server 2008 Active Directory
Course Number: M118
Course description:
This course is preparation for the 70-640 exam. This exam covers the following topics: Configuring Domain Name System (DNS) for Active Directory, Configuring the Active Directory infrastructure, Configuring Active Directory roles and services, Creating and
maintaining Active Directory objects, Maintaining the Active Directory environment, Configuring Active Directory Certificate Services.

Course Length: 20 Hours 33 Minutes
Videos:130
Test Questions:59

**Course Name:** Microsoft 70-642 TS: Configuring Windows Server 2008 Network Infrastructure  
**Course Number:** M119  
**Course description:**
This course prepares students for the 70-642: Windows Server 2008 Network Infrastructure, Configuring exam. This course provides students with the knowledge and skills to configure and troubleshoot Windows Server 2008 and Windows Server 2008 R2 Sp1 Network Infrastructures. This course will cover networking technologies most commonly used with Windows Server 2008 and Windows Server 2008 R2 Sp1, such as DNS, DHCP, IPv4 and IPv6 network addressing, Network Policy server, Network Access Protection, and configuring secure network access. It also covers fault tolerant storage technologies, Network Storage, routing and remote access, monitoring and compliance updates, as well as other relevant technologies.

Course Length: 19 Hours 15 Minutes
Videos:122
Test Questions:60

**Course Name:** Microsoft 70-646 Pro: Windows Server 2008, Server Administrator  
**Course Number:** M120  
**Course description:**
This course prepares students for the 70-646 MCITP: Server Administrator certification exam. and is intended for IT Professionals who are interested in the knowledge and skills necessary to plan and implement a Windows Server 2008 and Windows Server 2008 R2 environment. This course incorporates both the planning of the server infrastructure and key aspects of the implementation, management and maintenance of Active Directory and Network Infrastructure. It covers the most important job tasks for Server Administrators who are responsible for the planning, operations, and day-to-day maintenance of Windows Server 2008 and Windows Server 2008 R2 servers in the enterprise.

Course Length: 13 Hours 24 Minutes
Videos:90
Test Questions:58

**Course Name:** Microsoft 70-246: Monitoring and Operating a Private Cloud 2012  
**Course Number:** M121  
**Course description:**
Prepare for Microsoft Exam 70-246–and help demonstrate your real-world mastery of monitoring and operating a private cloud based on Microsoft System Center 2012 R2. Designed for experienced IT professionals ready to advance their status, focuses on the critical-thinking and decision-making acumen needed for success at the MCSE level.
Course Length: 15 Hours 36 Minutes
Videos:58
Test Questions:22

Course Name: **Microsoft 70-247: Deploying and Operating a Private Cloud 2012**
Course Number: M122
Course description:
Prepare for Microsoft Exam 70-247—and help demonstrate your real-world mastery configuring and deploying a private cloud using Microsoft System Center 2012 R2. Designed for experienced IT professionals ready to advance their status, focuses on the critical-thinking and decision-making acumen needed for success at the MCSE level.

Course Length: 18 Hours 1 Minute
Videos:65
Test Questions:60

Course Name: **Microsoft 70-336: MCSE Core Solutions Lync Server 2013**
Course Number: M123
Course description:
Candidates for this exam are IT consultants and telecommunications consulting professionals who design, plan, deploy, and maintain solutions for unified communications (UC). Candidates should be able to translate business requirements into technical architecture and design for a UC solution. Candidates should have a minimum of two years of experience with Microsoft Lync technologies and be familiar with supported migration scenarios. Candidates should be proficient in deploying Lync Server solutions for end users, endpoint devices, telephony, audio/video and web conferences, security, and high availability. Candidates should also know how to monitor and troubleshoot Lync Server using Microsoft tools. The minimally qualified candidate typically should have experience making decisions concerning the design, implementation, and maintenance of the following: central and branch office sites, standard and enterprise edition deployment, high availability and disaster recovery, remote access/external access, enterprise voice, Unified Messaging, conferencing, Persistent Chat, data compliance, client endpoints, and, migration from previous versions of Lync. This course is a core requirement for the MCSE certification.

Course Length: 22 Hours 13 Minutes
Videos:66
Test Questions:39

Course Name: **Microsoft 70-337: MCSE Communication - Lync Server**
Course Number: M124
Course description:
Candidates for this exam are IT consultants and telecommunications consulting professionals who design, plan, deploy, and maintain solutions for unified communications (UC). Candidates should be able to translate business requirements into technical architecture and design for a UC solution. Candidates should have a minimum of two years of experience with Microsoft Lync technologies and be familiar with supported migration scenarios. Candidates should be proficient in deploying Lync Server 2013 solutions for end
users, endpoint devices, telephony, audio/video and web conferences, security, and high availability. Candidates should also know how to monitor and troubleshoot Lync Server 2013 using Microsoft tools. In addition, candidates should be proficient with Active Directory Domain Services, data networks, and telecommunications standards and components that support the configuration of Lync Server 2013. Candidates should be familiar with the requirements for integrating Lync Server 2013 with Microsoft Exchange Server and Office 365. This course is a core requirement for the MCSE certification.

Course Length: 18 Hours 21 Minutes
Videos: 58
Test Questions: 64

Course Name: Microsoft 70-346: Managing Office 365 Identities and Requirements
Course Number: M125
Course description:
This exam is designed for IT professionals who take part in evaluating, planning, deploying, and operating the Office 365 services, including its dependencies, requirements, and supporting technologies.

Course Length: 16 Hours 7 Minutes
Videos: 61
Test Questions: 200

Course Name: Microsoft 70-347: Enabling Office 365 Services
Course Number: M126
Course description:
This exam is designed for IT professionals who take part in evaluating, planning, deploying, and operating the Office 365 services, including its dependencies, requirements, and supporting technologies. They should have experience with the Office 365 Admin Center and an understanding of Exchange Online, Lync Online, SharePoint Online, Office 365 ProPlus, and Microsoft Azure Active Directory. This includes experience with service descriptions, configuration options, and integrating services with existing identity management and on-premises infrastructure to support the business requirements of an organization.

Course Length: 18 Hours 11 Minutes
Videos: 68
Test Questions: 19

Course Name: Microsoft 70-409: Server Virtualization with Windows Server Hyper-V and System Center
Course Number: M127
Course description:
This course provides the training that can help you prepare for the Microsoft Specialist Exam 70-409: Server Virtualization with Windows Server Hyper-V and System Center. The Microsoft certification path, exam, and course can will prove your ability to deploy and manage a Microsoft Server Virtualization infrastructure in an enterprise environment. You also find out how to configure, manage, and maintain Windows Server 2012 R2 Hyper-V...
and System Center 2012 R2 Virtual Machine Manager, including networking and storage services. Plus, you learn how to configure key Microsoft Server virtualization features, such as Generation 2 Virtual Machines, Replication Extension, Online Export, Cross-Version Live Migration, Online VHDX Resizing, and Live Migration Performance tuning, in addition to Dynamic Virtual Switch Load Balancing and virtual Receive Side Scaling (vRSS).

Course Length: 20 Hours 11 Minutes
Videos:69
Test Questions:35

---

**Course Name:** Microsoft 70-410: Installing and Configuring Windows Server 2012  
**Course Number:** M128  
**Course description:**
This course covers the following topics in order to prepare for the exam: Install and configure servers. Configure server roles and features. Configure Hyper-V. Deploy and configure core network services. Install and administer Active Directory. Create and manage Group Policy.

Course Length: 22 Hours 19 Minutes
Videos:76
Test Questions:56

---

**Course Name:** Microsoft 70-411: Administering Windows Server 2012  
**Course Number:** M129  
**Course description:**
This course covers the following topics in order to prepare for the exam: Deploy, manage, and maintain servers, Configure File and Print Services, configure network services and access, Configure a Network Policy Server (NPS) infrastructure. Configure and manage Active Directory. Configure and manage Group Policy.

Course Length: 14 Hours 59 Minutes
Videos:44
Test Questions:40

---

**Course Name:** Microsoft 70-412: Configuring Advanced Windows Server 2012 Services  
**Course Number:** M130  
**Course description:**
This course covers the following topics in order to prepare for the exam: Configure and manage high availability. Configure file and storage solutions. Implement business continuity and disaster recovery. Configure Network Services. Configure the Active Directory infrastructure. Configure Identity and Access Solutions.

Course Length: 7 Hours 11 Minutes
Videos:168
Test Questions:68
Course Name: **Microsoft 70-467: Designing Business Intelligence Solutions with SQL Server 2012**
Course Number: M131
Course description:
Students taking this online course will learn Microsoft SQL Server 2012 can be used to build robust business intelligence solutions using the tools already available in Microsoft SQL Server 2012. Topics like Introduction to Business Intelligence, Power Pivot, Extract, Load and Transform (ETL) methods, Microsoft SSIS, creating drill-down reports, building business intelligence fact tables and more are included.

Course Length: 19 Hours 56 Minutes
Videos: 48
Test Questions: 43

Course Name: **Microsoft 70-486: Developing ASP.NET MVC Web Applications**
Course Number: M132
Course description:
This course will help students prepare for Developing Microsoft Azure and Web Services certification. The 70-487 Certification is intended for developers with 3 to 5 years’ experience in web services development and a minimum of one year in Web API and Azure Solutions experience.

Course Length: 15 Hours 29 Minutes
Videos: 32
Test Questions: 100

Course Name: **Microsoft 70-487: Developing Microsoft Azure and Web Services**
Course Number: M133
Course description:
This course will help students prepare for Developing Microsoft Azure and Web Services certification. The 70-487 Certification is intended for developers with 3 to 5 years’ experience in web services development and a minimum of one year in Web API and Azure Solutions experience.

Course Length: 15 Hours 29 Minutes
Videos: 32
Test Questions: 100

Course Name: **Microsoft 70-488: Developing Microsoft SharePoint Server 2013 Core Solutions**
Course Number: M134
Course description:
This course on Developing Microsoft SharePoint Server 2013 Core Solutions will prepare you for Exam 70-488 and enhance key skills required for SharePoint development activities. This Microsoft training course is intended for professional developers who develop solutions for SharePoint products and technologies. While a small amount of familiarity
with SharePoint development is required, candidates are not expected to have prior experience with the new features in SharePoint Server 2013.

Course Length: 18 hours 3 Minutes
Videos: 32
Test Questions: 189

**Course Name:** Microsoft 70-489: Developing Microsoft SharePoint Server 2013 Advanced Solutions  
**Course Number:** M135  
**Course description:**

This course on Microsoft SharePoint Server 2013 Advanced Solutions will prepare you for Exam 70-489 and enhance your skills in SharePoint environments. Candidates for this exam are typically technical leads with a minimum of four years’ experience in SharePoint and web development. The candidates are responsible for designing custom code for projects that are deployed to or interact with SharePoint.

Course Length: 15 Hours 13 Minutes  
Videos: 54  
Test Questions: 197

**Course Name:** Microsoft 70-680 TS: Configuring Windows 7  
**Course Number:** M136  
**Course description:**

Getting certified on the Windows operating system can help you reach your goals. In today's increasingly complex IT environment, a Windows certification helps prove to customers and employers that you have the technical skills necessary to do the job. By sitting for one exam, you'll become MCTS (Microsoft Certified Technology Specialist) certified. Many of today's IT jobs are looking for the MCTS or MCITP (Microsoft Certified IT Professional) certifications.

Course Length: 10 Hours 56 Minutes  
Videos: 146  
Test Questions: 60

**Course Name:** Microsoft 70-686 Pro: Windows 7, Enterprise Desktop Administrator  
**Course Number:** M137  
**Course description:**

This course enables students to learn how to plan and deploy Windows 7 desktops in large organizations. Students will also learn how to design, configure, and manage the Windows 7 client environment.

Course Length: 20 Hours 34 Minutes  
Videos: 37  
Test Questions: 33

**Course Name:** Microsoft 70-688: Managing and Maintaining Windows 8  
**Course Number:** M138
Course description:
This course is preparation for the Microsoft 70-688 Exam which is designed for IT professionals who configure or support Windows 8 computers, devices, users, and associated network and security resources. The networks with which these professionals typically work are configured as domain-based or peer-to-peer environments with access to the Internet and cloud services. The IT professional could be a consultant, a full-time desktop support technician, or an IT generalist who administers Windows 8–based computers and devices as a portion of their broader technical responsibilities.

Course Length: 19 Hours 46 Minutes
Videos: 54
Test Questions: 39

Course Name: Microsoft 70-697: Configuring Windows Devices (Windows 10)
Course Number: M139
Course description:
With Windows 10, students that can obtain these certifications will have a considerable advantage in the marketplace as companies start to migrate over to Microsoft's new OS. Microsoft is expecting to put Windows 10 on over a billion devices. Windows 10 contains many new features that have revolutionized Microsoft's platform. The start button is back, more security has been added, a new browser has been integrated and Microsoft has even added their voice-based personal assistant, Cortana. This course will prepare students for the Microsoft 70-697 Certification for Windows 10. This training course will cover topics such as Windows 10 deployment, OS management and device management, and many others.

Course Length: 15 Hours 30 Minutes
Videos: 135
Test Questions: 210

Course Name: Microsoft 70-698: Installing and Configuring Windows 10
Course Number: M140
Course description:
Microsoft 70-698: Installing and Configuring Windows 10, focuses on three broad topics, with various subtopics under those headings. Implement Windows, Configure and Support Core Services and Manage and Maintain Windows are the three broad topics. This video series will take you through each topic covered in the online outline from Microsoft’s website. Students studying for this exam are IT professionals able to perform installation, configuration, general local management and maintenance of Windows 10 core services.
The focus of this course, also known as the "Help Desk" course, is on local scenarios. Also included are Enterprise scenarios, where applicable and Some cloud-integrated services are covered, such as with Microsoft Passport. Students will learn how to configure data security, device security, and network security, and maintain, update, and recover Windows 10 – all vital to today’s corporate computing infrastructures, are also interested in specializing in Windows 10 desktop and application deployments, and in managing cloud-based application and data service environments.

Course Length: 20 Hours
Course Name: **Microsoft 70-740 Installation, Storage and Compute with Windows Server 2016**
Course Number: M141

Course description:

Installation, Storage and Compute is the first of a series of courses and exams designed to achieve the MCSA certification in Windows Server 2016. We will cover installation of Windows Server through standard manual means and image-based installations discussing various requirements and different versions. In addition, we will cover the multiple administrative tools that are available. Windows Server 2016 supports several types of storage and introduces new features and enhancements to features such as Storage Spaces and Data Deduplication. We will also discuss the connections of Windows Server 2016 physical and virtual machines to iSCSI and Fibre Channel SANs. Hyper-V, the virtualization platform in Windows Server 2016, has undergone various changes and enhancements such as PowerShell Direct, Nested Virtualization, and Shielded virtualization which will be discussed along with general configuration and management of virtual machines. We will also cover a new style of virtualization possible in Windows Server 2016 known as Containers. We will consider and configure various types high availability and disaster recovery that are available in Windows. In addition, we will discuss the importance of patch management and monitoring and the various tools that are available in order to ensure the ongoing efficiency of Windows Server 2016.

Course Length: 21 Hours 20 Minutes
Videos:75
Test Questions:243

Course Name: **Microsoft 70-741: MSCA Networking with Windows Server 2016**
Course Number: M142

Course description:

Networking with Windows Server 2016 is the 2nd course in the MCSA certification for Windows Server 2016. This course will cover all the major aspects of a network running this operating system. From planning and implementing IPv4 and IPv6 addressing schemes, troubleshooting client and server connectivity to name resolution with the Domain Name System and assignment of IP addresses using Dynamic Host Configuration Protocol. This course also covers various types of remote access capabilities that are supported in Windows Server 2016 such as Virtual Private Networks, the Web Application Proxy and the DirectAccess alternative to remote access. We will also cover options that are available to optimize branch office scenarios such as BranchCache, Read Only Domain Controllers, and the Distributed File System. Additionally, we will cover advanced networking features which are new and improved in Windows Server 2016.

Course Length: 21 Hours 13 Minutes
Videos:81
Test Questions:238
Course Name: **Microsoft 70-742: Identity in Windows Server 2016**  
Course Number: M143  
Course description:  
This course is part of a three-course series required to pass the Microsoft 70-742: Identity in Windows Server 2016 certification. Identity in Windows Server 2016 is the 3rd course towards the MCSA 2016 certification. This Microsoft 70-742 course covers Active Directory Domain services the primary identity management platform for Windows Networks. Learn how to deploy domain controllers, manage various Active Directory objects, secure your network and manage it centrally using Group Policy. You will also learn how to connect your internal Active Directory to cloud-based solutions such as Office 365 and Azure AD along with the establishment of complex AD DS internal infrastructures.  
Course Length: 20 Hours 57 Minutes  
Videos:76  
Test Questions:243

---

Course Name: **Microsoft 70-764: Administering a SQL Database Infrastructure**  
Course Number: M144  
Course description:  
The Microsoft 70-764 SQL Server 2016 Administration course prepares student for the Microsoft Certification Exam 70-764. By the end of this course, you will be able to administer a Microsoft SQL 2016 server. This Microsoft 70-764 SQL Server 2016 Administration course is for students intended for IT professionals responsible for installing, configuring and maintaining a Microsoft SQL Server environment. Students preparing for the 70-764 exam will typically have at least 2 years of experience working with SQL Server. Microsoft recommends having experience setting up database systems, making sure those systems operate efficiently, and regularly storing, backing up, and securing data from unauthorized access. You will be able to engage these topics on multiple platforms, including SQL Server 2016, SQL Server v.Next on Linux, and Azure SQL Databases. Students studying for the Microsoft Administering a SQL Database Infrastructure exam are database professionals who perform installation, maintenance, and configuration tasks. In this Microsoft 70-764 SQL Server course, you will learn how to configure Cell-level Encryption, Transparent Data Encryption, Always Encrypted, Backup Encryption, Connection Encryption, and Encryption Troubleshooting and ending with creating an Availability Group, manage failover, configure read-only routing and create distributed availability groups. Examining topics through the lenses of various platforms, comparing what they look like in SQL Server 2016, SQL Server v.Next on Linux, and Azure SQL Databases.  
Course Length: 21 Hours 13 Minutes  
Videos:106  
Test Questions:250

---

Course Name: **Microsoft 70-765: Provisioning SQL Databases**  
Course Number: M145  
Course description:
The Microsoft SQL Server 2016: Provisioning SQL Databases course prepares you for the Certification Exam 70-765. By the end of this course, you will be able to provision databases on Microsoft SQL Server 2016 and Microsoft Azure. This course is intended for IT professionals responsible for installing and maintaining a SQL Server 2016 environment. Passing the exam provides you credit toward the Microsoft MCSA certification. This exam (70-365) is intended for our students in architect, senior developers, infrastructure specialists, and development leads. Students have a working knowledge of the various cloud service models and service model architectures, data storage options, and data synchronization techniques. Students should also have a working knowledge of deployment models, upgrading and migrating databases, and applications and services, in addition to integrating Azure applications with external resources.

Course Length: 22 Hours 19 Minutes
Videos:102
Test Questions:247

Course Name: **Microsoft 98-365 MTA Windows Server 2016 Administration**
Course Number: M146
Course description:
The Microsoft Technology Associate (MTA) is Microsoft’s newest and innovative suite of technology certification exams that validate fundamental knowledge needed to begin building a career for success using Microsoft technologies. This program provides an appropriate entry level point to a future career in technology and assumes some hands-on experience or training. However, this does not presume on-the-job practice. It focuses on Microsoft Windows Server 2016 Administration which will provide you with the information and knowledge to pass the MTA Microsoft 98-365 Windows Server 2019 Administration exam offered by Microsoft as well as the confidence you need to succeed in advanced studies.

Course Length: 5 hours 23 minutes
Videos:39
Test Questions:74

Course Name: **Microsoft 98-366 MTA Networking Fundamentals**
Course Number: M147
Course description:
The Microsoft MTA 98-366 Course - Networking Fundamentals course takes students through the core networking concepts and provides the knowledge to pass the MTA 98-366 exam. The Microsoft Technology Associate (MTA) is Microsoft’s newest suite of technology certification exams that validate fundamental knowledge needed to begin building a career using Microsoft technologies.

Course Length: 5 Hours 43 Minutes
Videos:45
Test Questions:75

Course Name: **Microsoft 98-367 MTA Security Fundamentals**
Course Number: M148
Course description:
The Microsoft MTA 98-367 - Security Fundamentals course is designed to provide students with the knowledge to take the Microsoft 98-367 exam. The Microsoft Technology Associate (MTA) is Microsoft’s newest suite of technology certification exams that validate fundamental knowledge needed to begin building a career using Microsoft technologies.

Course Length: 4 Hours 44 Minutes
Videos:24
Test Questions:74

Course Name: Microsoft AZ-203: Developing Solutions for Microsoft Azure
Course Number: M149
Course description:

This course prepares you for the Microsoft Certification Exam AZ-203. By the end of this course, you will be able to Develop Azure IaaS computer solution, Develop Azure PaaS computer solution, Develop for Azure storage, Implement Azure security, Monitor, troubleshoot and optimize solutions, as well as Connect to and consumer Azure and third-party services. You will become proficient in developing apps and services, using Azure tools and technologies. Cloud Technologies are a great skill to learn and having these skills will assist in becoming or adding to your skillset as a Cloud Architect, Cloud DBA, Cloud Admin and many more.

Course Length: 19 Hours 54 Minutes
Videos:46
Test Questions:199

Course Name: Microsoft 70-332: Advanced Solutions of SharePoint Server 2013 & Lab
Course Number: M201L
Course description:

This course examines how to plan, configure, and manage a Microsoft SharePoint Server 2013 environment. Special areas of focus include implementing high availability, disaster recovery, service application architecture, business connectivity services, social computing features, productivity and collaboration platforms and features, business intelligence solutions, enterprise content management, and web content management infrastructure, solutions, and apps. The course also examines how to optimize the search experience, how to develop and implement a governance plan, and how to perform an upgrade or migration to SharePoint Server 2013.

Course Length: 5 Hours 41 Minutes
Videos:65
Test Questions:36

Course Name: Microsoft 70-341: Core Solutions of Exchange Server 2013 & Lab (341-lab-365)
Course Number: M202L
Course description:
This course covers the following topics in order to prepare students for the Microsoft 70-341 Course Solutions of Exchange Server 2013 exam: how to plan, install, configure, and manage transport, mailbox role, and client access, as well as design and manage an Exchange infrastructure.

Course Length: 7 Hours 46 Minutes
Videos:60
Test Questions:59

Course Name: Microsoft 70-342: Advanced Solutions of Exchange Server 2013 & Lab {342-lab-365}
Course Number: M203L
Course description:
This course covers the following topics in order to prepare students for the Microsoft 70-342 Advanced Solutions of Exchange Server 2013 exam: how to configure, manage, and migrate unified messaging, how to design, configure, and manage site resiliency, how to design, configure, and manage advanced security, how to configure and manage compliance, archiving, and discovery solutions, and how to implement and manage coexistence, hybrid scenarios, migration, and federation.

Course Length: 6 Hours 31 Minutes
Videos:49
Test Questions:99

Course Name: Microsoft 70-410: Installing and Configuring Windows Server 2012 (R2) & Lab
Course Number: M204L
Course description:
This course covers the following topics in order to prepare for the exam: Install and configure servers. Configure server roles and features. Configure Hyper-V. Deploy and configure core network services. Install and administer Active Directory. Create and manage Group Policy.

Course Length: 22 Hours 19 Minutes
Videos:76
Test Questions:56

Course Name: Microsoft 70-411: Administering Windows Server 2012 (R2) & Lab {ms-70-411-lab-365}
Course Number: M205L
Course description:
This course covers the following topics in order to prepare for the exam: Deploy, manage, and maintain servers, Configure File and Print Services, configure network services and access, Configure a Network Policy Server (NPS) infrastructure. Configure and manage Active Directory. Configure and manage Group Policy.

Course Length: 14 Hours 59 Minutes
Videos:44
Course Name: Microsoft 70-412: Configuring Advanced Windows Server 2012 Services (R2) & Lab  
Course Number: M206L  
Course description:  
This course covers the following topics in order to prepare for the exam: Configure and manage high availability. Configure file and storage solutions. Implement business continuity and disaster recovery. Configure Network Services. Configure the Active Directory infrastructure. Configure Identity and Access Solutions.  
Course Length: 7 Hours 11 Minutes  
Videos: 168  
Test Questions: 68

Course Name: Microsoft 70-432: SQL Server 2008 Implementation and Maintenance & Lab  
Course Number: M207L  
Course description:  
This course will cover the following topics to prepare students for the Microsoft 70-432: SQL Server 2008 Implementation and Maintenance exam: how to install and configuring SQL Server 2008, maintaining SQL Server instances, managing SQL Server security, maintaining a SQL Server database, performing data management tasks, monitoring and troubleshooting SQL Server, optimizing SQL Server performance, and implementing high availability.  
Course Length: 9 Hours 10 Minutes  
Videos: 146  
Test Questions: 58

Course Name: Microsoft 70-448: SQL Server 2008 Business Intelligence Development and Maintenance &  
Course Number: M208L  
Course description:  
This course covers the following topics to prepare students for the 70-448 Microsoft SQL Server 2008 Business Intelligence Development and Maintenance exam: how to implement SSIS, SSAS, and SSRS solutions, as well as how to configure, deploy and maintain SSIS, SSAS, and SSRS solutions.  
Course Length: 8 Hours 32 Minutes  
Videos: 94  
Test Questions: 59

Course Name: Microsoft 70-461: Querying SQL Server 2012 & Lab  
Course Number: M209L  
Course description:
This course provides students with the technical skills required to be prepared for the 70-461 Querying SQL Server 2012 exam. Students will acquire the skills to write basic Transact-SQL queries for Microsoft SQL Server 2012, which is the foundation for all SQL Server-related disciplines; namely Database Administration, Database Development and Business Intelligence.

Course Length: 12 Hours 22 Minutes
Videos:84
Test Questions:53

Course Name: Microsoft 70-462: Administering SQL Server 2012 Databases & Lab
Course Number: M210L
Course description:
This course is preparation for the 70-462 Administering SQL Server 2012 exam. This course provides students with the knowledge and skills to maintain a Microsoft SQL Server 2012 database and focuses on teaching students how to use SQL Server 2012 product features and tools related to maintaining a database.

Course Length: 8 Hours 24 Minutes
Videos:62
Test Questions:45

Course Name: Microsoft 70-463: Implementing a Data Warehouse with SQL Server 2012 & Lab
Course Number: M211L
Course description:
This course is preparation for the 70-463 Implementing a Data Warehouse with SQL Server 2012 exam. The course covers topics that are featured on the exam, such as how to implement a data warehouse platform to support a BI solution, how to create a data warehouse with Microsoft SQL Server 2012, implement ETL with SQL Server Integration Services, and validate and cleanse data with SQL Server Data Quality Services and SQL Server Master Data Services.

Course Length: 7 Hours 3 Minutes
Videos:69
Test Questions:44

Course Name: Microsoft 70-464: Developing SQL Server 2012 Databases & Lab
Course Number: M212L
Course description:
Candidates for the Microsoft 70-464 Developing SQL Server Databases (MCSE) exam are primarily database professionals who build and implement databases across organizations and who ensure high levels of data availability. They have experience performing tasks in creating database files, data types, and tables; planning, creating, and optimizing indexes; ensuring data integrity; implementing views, stored procedures, and functions; and managing transactions and locks.

Course Length: 10 Hours 41 Minutes
Course Name: Microsoft 70-466: Implementing Data Models & Reports with SQL Server 2012 & Lab
Course Number: M213L
Course description:
This course prepares students for the Microsoft 70-466: Implementing Data Models & Reports with SQL Server 2012 exam. The course focuses on creating managed enterprise BI solutions and covers how to implement multidimensional and tabular data models, deliver reports with Microsoft SQL Server Reporting Services, create dashboards with Microsoft SharePoint Server Performance Point Services, and discover business insights by using data mining.
Course Length: 13 Hours 4 Minutes
Videos:47
Test Questions:42

Course Name: Microsoft 70-467: Designing Business Intelligence Solutions with SQL Server 2012 & Lab
Course Number: M214L
Course description:
Our Microsoft 70-467: Designing Business Intelligence Solutions with SQL Server 2012 is one of the many SQL courses available Online. This SQL course prepares students to use the Microsoft SQL Server 2012 BI tools and is focused on the Microsoft 70-467 exam. Students taking this online course will learn Microsoft SQL Server 2012 can be used to build robust business intelligence solutions using the tools already available in Microsoft SQL Server 2012. Topics like Introduction to Business Intelligence, Power Pivot, Extract, Load and Transform (ETL) methods, Microsoft SSIS, creating drill-down reports, building business intelligence fact tables and more are included.
Course Length: 19 Hours 56 Minutes
Videos:48
Test Questions:43

Course Name: Microsoft 70-640: Configuring Windows Server 2008 Active Directory & Lab
Course Number: M215L
Course description:
This course is preparation for the 70-640 exam. This exam covers the following topics: Configuring Domain Name System (DNS) for Active Directory, Configuring the Active Directory infrastructure, Configuring Active Directory roles and services, Creating and maintaining Active Directory objects, Maintaining the Active Directory environment, Configuring Active Directory Certificate Services.
Course Length: 20 Hours 33 Minutes
Videos:130
Test Questions:59
Course Name: **Microsoft 70-642: Configuring Windows Server 2008 Network Infrastructure & Lab**  
Course Number: **M216L**  
Course description:  
This course prepares students for the 70-642: Windows Server 2008 Network Infrastructure, Configuring exam. This course provides students with the knowledge and skills to configure and troubleshoot Windows Server 2008 and Windows Server 2008 R2 Sp1 Network Infrastructures. This course will cover networking technologies most commonly used with Windows Server 2008 and Windows Server 2008 R2 Sp1, such as DNS, DHCP, IPv4 and IPv6 network addressing, Network Policy server, Network Access Protection, and configuring secure network access. It also covers fault tolerant storage technologies, Network Storage, routing and remote access, monitoring and compliance updates, as well as other relevant technologies.  
Course Length: 19 Hours 15 Minutes  
Videos: 122  
Test Questions: 60

Course Name: **Microsoft 70-646: Windows Server 2008 Server Administrator & Lab**  
Course Number: **M217L**  
Course description:  
This course prepares students for the 70-646 MCITP: Server Administrator certification exam. and is intended for IT Professionals who are interested in the knowledge and skills necessary to plan and implement a Windows Server 2008 and Windows Server 2008 R2 environment. This course incorporates both the planning of the server infrastructure and key aspects of the implementation, management and maintenance of Active Directory and Network Infrastructure. It covers the most important job tasks for Server Administrators who are responsible for the planning, operations, and day-to-day maintenance of Windows Server 2008 and Windows Server 2008 R2 servers in the enterprise.  
Course Length: 13 Hours 24 Minutes  
Videos: 90  
Test Questions: 58

Course Name: **Microsoft 70-680: Configuring Windows 7 (R2) & Lab**  
Course Number: **M218L**  
Course description:  
Getting certified on the Windows operating system can help you reach your goals. In today's increasingly complex IT environment, a Windows certification helps prove to customers and employers that you have the technical skills necessary to do the job. By sitting for one exam, you'll become MCTS (Microsoft Certified Technology Specialist) certified. Many of today's IT jobs are looking for the MCTS or MCITP (Microsoft Certified IT Professional) certifications.  
Course Length: 10 Hours 56 Minutes  
Videos: 146  
Test Questions: 60
Course Name: Microsoft 70-685: Windows 7 Enterprise Desktop Support Technician & Lab {mcsa-685-lab
Course Number: M219L
Course description:
This course covers the following topics in order to prepare students for the Microsoft 70-685 Pro: Windows 7, Enterprise Desktop Support Technician exam: Identifying cause of and resolving desktop application issues, identifying cause of and resolving networking issues, managing and maintaining systems that run Windows 7 client, supporting mobile users, and identifying cause of and resolving security issues.

Course Length: 14 Hours 20 Minutes
Videos:96
Test Questions:58

Course Name: Microsoft 70-686: Windows 7 Enterprise Desktop Administrator & Lab
Course Number: M220L
Course description:
This course enables students to learn how to plan and deploy Windows 7 desktops in large organizations. Students will also learn how to design, configure, and manage the Windows 7 client environment.

Course Length: 20 Hours 34 Minutes
Videos:37
Test Questions:33

Course Name: Microsoft 70-687: Configuring Windows 8 & Lab
Course Number: M221L
Course description:
This course is preparation for the Microsoft 70-687 Configuring Windows 8 certification exam. Candidates for this exam are students seeking to be IT professionals who configure or support Windows 8 computers, devices, users, and associated network and security resources. The networks with which these professionals typically work are configured as domain-based or peer-to-peer environments with access to the Internet and cloud services. The IT professional could be a consultant, a full-time desktop support technician, or an IT generalist who administers Windows 8–based computers and devices as a portion of their broader technical responsibilities.

Course Length: 15 Hours 49 Minutes
Videos:71
Test Questions:60

Course Name: Microsoft 70-688: Managing and Maintaining Windows 8 & Lab
Course Number: M222L
Course description:
This course is preparation for the Microsoft 70-688 Exam which is designed for IT professionals who configure or support Windows 8 computers, devices, users, and
associated network and security resources. The networks with which these professionals typically work are configured as domain-based or peer-to-peer environments with access to the Internet and cloud services. The IT professional could be a consultant, a full-time desktop support technician, or an IT generalist who administers Windows 8–based computers and devices as a portion of their broader technical responsibilities.

Course Length: 19 Hours 46 Minutes
Videos: 54
Test Questions: 39

Course Name: Microsoft 70-697: Configuring Windows Devices (Windows 10) & Lab
Course Number: M223L
Course description:
With Windows 10, students that can obtain these certifications will have a considerable advantage in the marketplace as companies start to migrate over to Microsoft's new OS. Microsoft is expecting to put Windows 10 on over a billion devices. Windows 10 contains many new features that have revolutionized Microsoft's platform. The start button is back, more security has been added, a new browser has been integrated and Microsoft has even added their voice-based personal assistant, Cortana. This course will prepare students for the Microsoft 70-697 Certification for Windows 10. This training course will cover topics such as Windows 10 deployment, OS management and device management, and many others.

Course Length: 15 Hours 30 Minutes
Videos: 135
Test Questions: 210

Course Name: Microsoft 70-740 Installation, Storage and Compute with Windows Server 2016 and Lab
Course Number: M224L
Course description:
Installation, Storage and Compute is the first of a series of courses and exams designed to achieve the MCSA certification in Windows Server 2016. We will cover installation of Windows Server through standard manual means and image-based installations discussing various requirements and different versions. In addition, we will cover the multiple administrative tools that are available. Windows Server 2016 supports several types of storage and introduces new features and enhancements to features such as Storage Spaces and Data Deduplication. We will also discuss the connections of Windows Server 2016 physical and virtual machines to iSCSI and Fibre Channel SANs. Hyper-V, the virtualization platform in Windows Server 2016, has undergone various changes and enhancements such as PowerShell Direct, Nested Virtualization, and Shielded virtualization which will be discussed along with general configuration and management of virtual machines. We will also cover a new style of virtualization possible in Windows Server 2016 known as Containers. We will consider and configure various types high availability and disaster recovery that are available in Windows. In addition, we will discuss the importance of patch management and monitoring and the various tools that are available in order to ensure the ongoing efficiency of Windows Server 2016.
Course Name: Microsoft .NET 4.5 Programming with HTML 5  
Course Number: Mp101  
Course description: .NET is an integral part of many applications running on Windows and provides common functionality for those applications to run. For developers, the .NET Framework provides a comprehensive and consistent programming model for building applications that have visually stunning user experiences and seamless and secure communication.

Course Length: Hours 7 Minutes 15  
Videos: 37  
Test Questions: 30

Course Name: Microsoft ASP .NET MVC  
Course Number: Mp102  
Course description: This course is for Microsoft developers that are ready to start building enterprise web applications and would like to take the 70-486 certification exam. Taking this course will provide you with training in web development, C Sharp, HTML and CSS, SQL Server, JavaScript, Object Based JavaScript, Model View and Controller, and jQuery.

Course Length: Hours 5 Minutes 56  
Videos: 30  
Test Questions: 30

Course Name: Microsoft 70-480: Programming in HTML5 with JavaScript and CSS3  
Course Number: Mp103  
Course description: This advanced course, also known as Programming in HTML5 with JavaScript and CSS3, is one of the unique tutorials that is provided to help in testing the knowledge of the student regarding JavaScript, CSS3, and HTML5. The course is undoubtedly a basic one among those that are important for acquiring the required skills in the development of the software.

Course Length: Hours 17 Minutes 46  
Videos: 53  
Test Questions: 21

Microsoft Office Online Courses

Course Name: Microsoft: Windows 10 Power User (How to use Windows 10)  
Course Number: Mo101  
Course description: With Windows 10 just being released, students that can obtain these certifications will have a considerable advantage in the marketplace as companies start to migrate over to Microsoft's new OS. Microsoft is expecting to put Windows 10 on over a billion devices.
Windows 10 contains many new features that have revolutionized Microsoft's platform. The start button is back, more security has been added, a new browser has been integrated and Microsoft has even added their voice based personal assistant, Cortana. This course bundle includes two courses that will allow students to master Windows 10. The first course is a Microsoft Windows 10 Power User course, which will teach students the most efficient uses of the Windows 10 platform. This will give students a considerable advantage over those that are using Windows 10 without any training.

Course Length: 6 Hours 16 Minutes
Videos:50
Test Questions:60

Course Name: Microsoft Access 2013
Course Number: Mo102
Course description:
This course covers basic, intermediate, and advanced features of Microsoft Access 2013 software. Access 2013 is a database application, design, and deployment tool that users use to keep track of important information. Users of this software can keep data on their computer, or they can publish it to the Web, so that other users may access the database with a web browser. Access databases can help the user store and track just about any kind of information, such as inventory, contacts, or business processes.

Course Length: 6 Hours 3 Minutes
Videos:31
Test Questions:59

Course Name: Microsoft Access 2016
Course Number: Mo105
Course description:
Microsoft Access is now much more than a way to create desktop databases. It’s an easy to use tool for quickly creating browser-based database applications that help you run your business. Your data is automatically stored in a SQL database, so it’s more secure and scalable than ever, and you can easily share your applications with colleagues. This course will guide you through the basics of relational database design and through the creation of database objects. You will learn how to use forms, query tables and reports to manage data. You will understand the interface, customization and creation editing of the many objects available within the Microsoft Access application. This course is divided in to three separate levels being Basic Microsoft Access, Intermediate Microsoft Access and Advanced Microsoft Access.

Course Length: 9 Hours 2 Minutes
Videos:31
Test Questions:125

Course Name: Microsoft Excel 2013
Course Number: Mo108
Course description:
This course is training for basic, intermediate, and advanced features of Microsoft Office Excel 2013 software. Excel 2013 is a spreadsheet program in the Microsoft Office system. Users can use Excel to create and format workbooks (a collection of spreadsheets) in order to analyze data and make more informed business decisions. Excel 2013 is an incredibly powerful tool for getting meaning out of vast amounts of data, as well as being utilized for simple calculations and tracking almost any kind of information. Specially, Excel is used to track data, build models for analyzing data, write formulas to perform calculations on that data, pivot the data in numerous ways, and present data in a variety of professional looking chats.

Course Length: 6 Hours 46 Minutes
Videos:39
Test Questions:58

---

**Course Name:** Microsoft Excel 2016
**Course Number:** Mo111
**Course description:**

Microsoft Excel is the standard spreadsheet application for both personal and business use, so staying on top of the latest version is very important for anyone considering career advancement. Regardless of your level of understanding, you will benefit from this Microsoft Excel 2016 training course because it covers basic, intermediate and advanced competency levels.

Our Microsoft Excel 2016 training course will help arm you with the knowledge to use it more effectively whether you are using it at home or in the workplace. Understand how to manipulate data within a spreadsheet, validate and present information using the built in structure and functions of Microsoft Excel.

Course Length: 9 Hours 3 Minutes
Videos:32
Test Questions:149

---

**Course Name:** Microsoft Outlook 2013
**Course Number:** Mo114
**Course description:**

This course provides training for basic, intermediate, and advanced features of Microsoft Outlook 2013 software. Microsoft Outlook 2013 organizes the user’s emails, calendars, contacts, tasks, and to-do lists, all in one place. Outlook features are linked with the user’s email account, and from there, the user can start working with emails, turning them into tasks or appointments, and storing the people they interact with into their contacts. Microsoft Outlook 2013 offers premium business and personal e-mail management tools to more than 500 million Microsoft Office users worldwide. With the release of Outlook 2013, users get a richer set of experiences to meet their communication needs at work, home, and school.

Course Length: 5 Hours 7 Minutes
Videos:31
Test Questions:56
Course Name: **Microsoft Outlook 2016**  
Course Number: Mo117  
Course description:  
With this Microsoft Outlook 2016 training course, you will learn the four major components of outlook including contacts, email, calendars and tasks. This course will also touch on the OneNote application that provides a cross platform and cross application note taking tool. This course covers all the bases including Basic Outlook 2016, Intermediate Outlook 2016 and Advanced Outlook 2016.

Course Length: 5 Hours 18 Minutes  
Videos: 31  
Test Questions: 127

---

Course Name: **Microsoft PowerPoint 2013**  
Course Number: Mo120  
Course Description:  
This course provides training for basic, intermediate, and advanced features of Microsoft Office PowerPoint 2013 software. PowerPoint 2013 is a visual and graphical application, primarily used for creating presentations. With PowerPoint, users can create, view, and present slide shows that combine text, shapes, pictures, graphs, animation, charts, videos, and much more.

Course Length: 5 Hours 11 Minutes  
Videos: 30  
Test Questions: 59

---

Course Name: **Microsoft PowerPoint 2016**  
Course Number: Mo123  
Course description:  
Take your PowerPoint presentations to the next level with our Microsoft PowerPoint 2016 online training course! Whether you are a beginner or have experience and want to sharpen your skills, this online course will help you create professional quality presentations that will grab your audience’s attention and keep them interested from start to finish.

This course is separated into three main sections covering Basic PowerPoint, Intermediate PowerPoint and Advanced PowerPoint lessons, which will provide an in-depth review of the presentation software included in the Office 2016 suite of applications. Learn to navigate the interface effectively, insert a range of objects and how to create engaging presentations that will wow viewers. Topics will include design, customization and presentation of information using Microsoft PowerPoint 2016.

Course Length: 5 Hours 11 Minutes  
Videos: 33  
Test Questions: 150

---

Course Name: **Microsoft Word 2013**  
Course Number: Mo126
Course description:
This course provides training for basic, intermediate, and advanced features of Microsoft Office Word 2013 software. Microsoft Word 2013 is a word-processing program that helps users organize and write their documents more efficiently. Microsoft Word is designed to help users create professional-quality documents with the finest document-formatting tools and includes powerful editing and revising tools so that users can collaborate with others easily.

Course Length: 8 Hours 26 Minutes
Videos:46
Test Questions:60

Course Name: Microsoft Word 2016
Course Number: Mo129
Course description:
Microsoft Word 2016 is a very popular word processing program that can be used for both personal and business purposes. While already feature rich and critical for productivity, Microsoft continues to improve and enhance their software with each new release like the latest Microsoft Word 2016. In this course, you will learn to navigate the interface, create documents that stand out and how to extend the use of Microsoft word beyond its traditional uses. This course will cover simple document creation, complex long documents and all aspects of the word processor. This online training course will cover three main areas including Basic Word, Intermediate Word and Advanced Word.

Course Length: 6 Hours 24 Minutes
Videos:34
Test Questions:145

Course Name: Microsoft Office 365 Online Versions
Course Number: Mo132
Course description:
This course provides training for basic, intermediate, and advanced features of Microsoft Office 365. "Office 365" refers to subscription plans that include access to Office applications, as well as other productivity services that are enabled over the Internet (cloud services), such as Lync web conferencing and Exchange Online hosted email for business, and additional online storage with OneDrive. Many Office 365 plans also include the desktop version of the latest Office applications, which users can install across multiple computers and devices.

Course Length: 10 Hours 9 Minutes
Videos:63
Test Questions:42

Oracle Online Courses

Course Name: Oracle Database 11g Certified Associate (OCA) Fundamentals 1Z0-051 and Admin 1z0-052
Course Number: Or101  
Course description:

This course is in preparation for the The Oracle Database 11g Administrator (OCA 11g) certification exam. The Oracle Database 11g Administrator Certification (OCA 11g) ensures that database professionals have a strong foundation and expertise in the industry's most advanced database management system, Oracle 11g. Oracle 11g training course will teach students how to install and maintain an Oracle database, how to create an operational database, and how to properly manage the various structures in an effective and efficient manner, including performance monitoring, database security, user management, and backup/recovery techniques. Students will also learn skills required for working with SQL, including how to use the advanced features of SQL in order to query and manipulate data within the database, control privileges at the object and system level, and use advanced querying and reporting techniques. After completing Oracle OCA 11g course, students will gain a conceptual understanding of the Oracle database architecture and how its components work and interact with one another. Oracle databases are the one of the most popular database platforms in the world. Increase your skills and marketability today by achieving Oracle certification!

Course Length: 7 Hours 24 Minutes  
Videos: 43  
Test Questions: 102

Course Name: Oracle 12c OCP 1Z0-061: SQL Fundamentals  
Course Number: Or102  
Course description:

With Oracle Database 12c: SQL Fundamentals, you experience the benefits of an Oracle Database that is re-engineered for Cloud computing. Multitenant architecture brings enterprises unprecedented hardware and software efficiencies, performance and manageability benefits, and fast and efficient Cloud provisioning. Oracle Database 12c: SQL Fundamentals certifications emphasize the full set of skills that DBAs need in today's competitive marketplace.

Course Length: 16 Hours 1 Minutes  
Videos: 45  
Test Questions: 245

Course Name: Oracle 12c OCP 1Z0-062: Installation and Administration  
Course Number: Or103  
Course description:

Keeping your exams current is important to any IT professional. The Oracle 1Z0-062 certification exam will prepare you for your Oracle Database 12c Installation and Administrator Professional certification with ease.

Course Length: 180 Hours 57 Minutes  
Videos: 51  
Test Questions: 41
Programming Online Courses

Course Name: AWS Concepts & Deep Dive Release March 2020
Course Number: Pg101

Course description: As the cloud computing industry continues to grow, understanding its concepts, purpose, and use cases will become an increasingly valuable skill among non-IT individuals. This will help marketing, sales, and finance professionals to better interact with developers and other IT professionals engaged in Amazon web services projects. This course provides an overview of some of Amazon web services cloud services and basic knowledge of what the services are for the specified objectives. This will go over some of Amazon web services more established services and the ancillary services that allow businesses to incorporate or completely migrate over to Amazon web services. Amazon web services provide a number of tools to perform basic tasks up to full automation. We will then discuss the management of AWS cloud services and provide basic knowledge of services provided by the AWS cloud. We will talk about the services that are very common for businesses to use and ideologies about the management of them. During the progression of this course, we will be talking about these products and services to ensure you have a knowledge of what they do and a relatable way that you can use them. Some of the services you will be looking at is the Amazon web services Fundamentals of Networking and content delivery, Identity and Access Management, Elastic Compute Cloud (EC2), Elastic Load Balancing (ELB), Route 53, Relational Database Service (RDS), AWS Simple Storage Service (S3), Storage, Analytics, Amazon Simple Email Service (SES). As well as topics including VPC configuration and examples on how they may be provisioned to allow for redundancy. Route 53, the DNS service that AWS provides and some of the approaches to a hybrid model. EC2 instance types and examples of uses for them, from instances that could be used as a webservice to database servers. We will cover elastic load balancing and the different types along with some use cases for each one. In managing the OS on EC2 we will discuss maintenance plans and scheduled tasks, the documents that can be run and the differences in them and why there are use cases for them. This is not designed to teach you how to build and run applications on Amazon web services. This course is all about the conceptual understanding of the services that Amazon web services can offer to allow you to migrate and manage your cloud in a new way.

Learning Objectives: Define what the AWS Cloud is and the basic global infrastructure Describe the key services on the AWS platform and their common use cases Describe basic AWS Cloud architectural principles Describe the AWS Cloud value proposition Describe basic/core characteristics of deploying and operating in the AWS Cloud VPC’s and how they play a vital role in the cloud Describe the key services on the AWS platform and their common use cases An in-depth view of AWS Cloud architectural principles Discuss the ongoing evolution of resources in the cloud Describe basic/core characteristics of deploying and operating in the AWS Cloud

Intended Audience: This provides an overview of some of AWS cloud services and basic knowledge of what the services are for the specified objectives. This is intended for Sales, Marketing, Project Managers, and new business professionals learning AWS, as well as IT Professionals who have a working knowledge with AWS. This is designed to teach you some basic concepts of cloud computing.

Course Length: Hours 11  Minutes 30
Videos:39

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
**Course Name:** CSS Essentials  
**Course Number:** Pg102  
**Course description:**

Whether you’re a web developer responsible for thousands of pages or a freelance web designer working on websites for local business, CSS is a very important skill to master. CSS or Cascading Style Sheets provides web developers and designers with the ability to create attractive web pages. This course will show all levels of users an introduction to CSS3, understanding of the CSS box model, working with page layouts, using colors and backgrounds, web typography, working with lists and tables, and dynamic CSS3 properties.

Course Length: 8 Hours 20Minutes  
Videos:31  
Test Questions:96

**Course Name:** HTML Essentials  
**Course Number:** Pg103  
**Course description:**

HTML is one of the main programming languages that power the internet. And once you master it, you can begin to create your own web content, whether it be simple websites or complex online applications. This online training course provides an in-depth look at the essentials of writing and editing HTML code.

Course Length: 7 Hours 48 Minutes  
Videos:32  
Test Questions:76

**Course Name:** JavaScript Essentials  
**Course Number:** Pg104  
**Course description:**

The JavaScript Essentials online training course is designed to teach students the fundamentals of JavaScript programming. This course is critical for someone trying to get into web development and wanting to learn more about JavaScript fundamentals.

Course Length: 9 Hours 1 Minute  
Videos:35  
Test Questions:78

**Course Name:** Java Programming  
**Course Number:** Pg105  
**Course description:**

Java is a general-purpose programming language that is concurrent, class based, object oriented, and specifically designed to have as few implementation dependencies as possible. Being that Java is an underlying technology and required by many applications and websites, you will find it in places like business applications, data centers, game consoles,
utilities, desktop computers, laptops, smart phones and more. This online training course will cover various levels of Java Programming including beginner, intermediate and advanced. It covers a complete introduction to object-oriented programming as well as many other core Java features. This course is just as helpful for a beginner as it is for systems engineers, web application developers, mobile app developers, software engineers and any other potential student with a technical background.

Course Length: 14 Hours 46 Minutes
Videos:58
Test Questions:120

Course Name: Microsoft .NET 4.5 Programming with HTML 5
Course Number: Pg106
Course description:

.NET is an integral part of many applications running on Windows and provides common functionality for those applications to run. For developers, the .NET Framework provides a comprehensive and consistent programming model for building applications that have visually stunning user experiences and seamless and secure communication.

Course Length: 7 hours 15 Minutes
Videos:37
Test Questions:14

Course Name: Microsoft 70-486: Developing ASP.NET MVC Web Applications
Course Number: Pg108
Course description:

This course is for Microsoft developers that are ready to start building enterprise web applications and would like to take the Microsoft 70-486: Developing ASP.NET MVC Web Applications certification exam. Taking this course will provide you with training in web development, C Sharp, HTML and CSS, SQL Server, JavaScript, Object Based JavaScript, Model View and Controller, and jQuery. It helps in focusing on the activities of coding that can help in enhancing performance and scales of the web applications. The students will be introduced to ASP.NET MVC and will learn how to compare the applications with Web Forms. This will assist the learners with various tools and technologies. ASP.NET MVC web application gives you a strong, patterns-based approach to develop dynamic websites that empowers a perfect separation of concerns and that gives you full authority over markup for pleasant and agile creation. ASP.NET MVC incorporates numerous features that enable quick, TDD-friendly development for creating sophisticated applications that utilize the most recent web models and standards.

Course Length: 18 Hours 32 Minutes
Videos:92
Test Questions:197

Course Name: Microsoft 70-487: Developing Microsoft Azure and Web Services
Course Number: Pg109
Course description:
This course will help students prepare for Developing Microsoft Azure and Web Services certification. The 70-487 Certification is intended for developers with 3 to 5 years’ experience in web services development and a minimum of one year in Web API and Azure Solutions experience.

Course Length: 15 Hours 29 Minutes
Videos: 32
Test Questions: 100

Course Name: Python
Course Number: Pg110
Course description:

Python is developed under an OSI-approved open source license, making it freely usable and distributable, even for commercial use. Python is a general-purpose programming language. Created nearly 30 years ago, it is now one of the most popular languages out there to use. Its popularity is particularly important in the data science and machine learning fields. But it is also a language that is easy to learn, and that is why it has become the language most taught in universities. Python interpreters are available for the main operating systems as well (Linux, Mac OS, Windows, Android, iOS, BSD, etc.) so it's very flexible in where it is used. Python has a simple syntax that makes it suitable for learning to program as a first language. The learning curve is smoother than other languages such as Java, which quickly requires learning about Object Oriented Programming or C/C++ that require understanding pointers. Still, it's possible to learn about OOP or functional programming in Python when the time comes.

Course Length: 8 Hours 49 Minutes
Videos: 25
Test Questions: 0

**Project Management Online Courses**

Course Name: Agile Project Management
Course Number: Pj101
Course description:

The Agile Project Management training course gives the basic of Agile with emphasis on the Scrum style. This course also gives the student a working understanding of how the philosophies and principles of Agile are used in successful projects. This course is intended for project professionals who are either using Agile principles in their work, or wish to include the principles, tools and techniques in the future. When you implement the Agile project management approach, your team delivers requirements and progresses in iterations throughout the project life cycle. This approach allows teams to deliver projects in a more flexible approach and adapt quickly to project requirement changes.

Course Length: 12 hours 5 minutes
Videos: 41
Test Questions: 147
Course Name: **Agile/Scrum**  
Course Number: **Pj102**  
Course description:

Agile Scrum is the most popular hybrid of AGILE it provides a framework that allows teams to address complex adaptive problems, while efficiently and creatively delivering products, services, or results of the highest possible value to their internal and external customers. In an Agile Scrum environment, the team constantly communicate with their customers and fellow team members. The team keeps their design simple and clean. They get feedback by Scrum reviews at the end of each timeboxed scrum. They deliver the product, service, or result to the customers as early as possible, by focusing on high-value functionality in early scrums and implementing changes as suggested. Applying Lean principles to project management facilitates empowerment project team members to better clarity and deliver projects with an emphasis on delivering value to internal and external customers.

Course Length: 3 Hours 42 Minutes  
Videos: 15  
Test Questions: 50

Course Name: **Agile/XP**  
Course Number: **Pj103**  
Course description:

This course integrates LEAN principles, where applicable, with AGILE/XP. Lean is a business methodology, initially used to improve throughput in manufacturing, that is used in Adaptive Project Life Cycles to achieve more predictable delivery, greater efficiency, and a customer-centric mindset. Applying Lean principles to project management facilitates empowerment project team members to better clarity and deliver projects with an emphasis of delivering value to internal and external customers. This course describes provides a basic understanding of AGILE/XP principles and tools and techniques used in implementing AGILE/XP in a coordinated fashion to ensure successful project outcomes.

Course Length: 4 Hours 04 Minutes  
Videos: 15  
Test Questions: 50

Course Name: **Certified Scrum Master (CSM)**  
Course Number: **Pj104**  
Course description:

A Certified Scrum Master helps project teams properly use Scrum, increasing the likelihood of the project's overall success. Certified Scrum Masters (CSMs) understand Scrum values, practices, and applications and provide a level of knowledge and expertise above and beyond that of typical project managers. CSMs act as "servant leaders," helping the rest of the Scrum team work together and learn the Scrum framework. The Scrum methodology allows a team to self-organize and make changes quickly, in accordance with agile principles. A qualified scrum master will lead these teams and projects to successful completion.

Course Length: 3 Hours 22 Minutes
Course Name: **Certified Associate in Project Management (CAPM)®**
Course Number: Pj105
Course description:
PMI’s Certified Associate in Project Management (CAPM) is a valuable entry-level certification for project practitioners. Designed for those with little or no project experience, the CAPM demonstrates your understanding of the fundamental knowledge, terminology, and processes of effective project management.

Course Length: 10 Hours 28 Minutes
Videos: 66
Test Questions: 58

Course Name: **Information Technology Infrastructure Library (ITIL Foundations V3)**
Course Number: Pj106
Course description:
This Foundation course covers the IT Infrastructure Library best practices. ITIL is globally accepted as the most widely used best practices for IT service management. This course gives students the necessary knowledge to enter or enhance their career in project management or IT service management. Companies that use ITIL best practices range from the Fortune 500 market, Government, DOD, small businesses, and is used internationally. This course covers the 5 main concepts within ITIL Service Strategy, Design, Transition, Operation and Continual Service Improvement.

Course Length: 8 Hours 10 Minutes
Videos: 95
Test Questions: 60

Course Name: **Information Technology Infrastructure Library (ITIL®) - Service Operation**
Course Number: Pj107
Course description:
Service Operation focuses on delivery and control process activities and aims for a steady state of managing services. In this course, you will learn the principles, processes, common activities, and implementation considerations of ITIL® service operation.

Course Length: 10 Hours 2 Minutes
Videos: 35
Test Questions: 95

Course Name: **PMI Risk Management Professional**
Course Number: Pj108
Course description:
This course is in preparation for the PMI Risk Management Professional (PMI-RMP) exam. PMI's Risk Management Professional (PMI-RMP) credential is a solution to project

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
management's increasing growth, complexity and diversity. Globally recognized and
demanded, the PMI-RMP fills the need for a specialist role in project risk management. This
certification recognizes the professional's unique expertise and competency in assessing and
identifying project risks, mitigating threats and capitalizing on opportunities, while still
possessing a core knowledge and practical application in all areas of project management.

Course Length: 8 hours 20 minutes
Videos: 50
Test Questions: 59

Course Name: PMI® CAPM® Prep - 6th edition PMBOK®
Course Number: Pj109
Course description:

Getting a project manager certification as a Certified Associate in Project Management
(CAPM®) is an asset that will distinguish you in the job market and enhance your
credibility and effectiveness working on — or with — project teams. Organizations with
standardized practices attain better results, as shown in our 2015 Pulse of the
Profession® report. Because the CAPM® recognizes your knowledge of the profession’s
preeminent global standard, you’ll stand out to employers and be poised to move ahead.
Project management is a rapidly growing profession. Through 2020, 1.57 million new jobs
will be created each year and qualified practitioners are in demand. With the CAPM®,
you’ll be on the fast track to opportunity. The 6th edition of the PMBOK® takes the
CAPM® to another level by explicitly acknowledging that project management life cycles
run in a continuum from predictive to adaptive, and that the project manager must be aware
of the following factors in each knowledge area: key concepts, trends and emerging
practices, and tailoring considerations to ensure that the right project management tools are
employed to maximize stakeholder value and project success.

Course Length: 18 Hours
Videos: 48
Test Questions: 252

Course Name: Project Management Professional (PMP)
Course Number: Pj110
Course description:

Become a Project Management Professional (PMP). Join thousands of others taking our
PMP Course. The purpose of this program is to prepare experienced project management
team members to take the PMP ® (Project Management Professional) certification
examination. The emphasis is on explaining the PMI ® (Project Management Institute) best
practices for project management across the continuum from predictive through adaptive
life cycles as proposed in the 6th edition PMBOK ® (Project Management Body of
Knowledge). The PMP course provides the student with the information required to
understand the concepts that will need to be applied in an analytical manner to answer
examination situational questions. During this PMP course, the student will review these
lessons and use practice questions and flashcards to finish preparing for the examination.
Online offers a full line of related PMP courses designed to help student dive deep into a
number of different project management principles.
Course Name: **SalesForce: Power User Course**  
Course Number: **Pj111**  
Course description:  
With Sales Force being the most popular CRM in the world, having a strong base of knowledge in Sales Force not only enhances your marketability but also gives you skills that will allow you to be more efficient in day to day use of the software. This course covers all aspects of Sales Force use from beginners’ level operation to advanced skills for experienced users. Some of the topics included in this course include; contact management, sales force engages, sales collaboration, marketing automation, sales data/reporting and much more. Learn how to master the worlds #1 CRM with this course!

Course Length: 7 Hours 33 Minutes  
Videos: 35  
Test Questions: 60

Course Name: **Six Sigma Black Belt**  
Course Number: **Pj112**  
Course description:  
Six Sigma is a data-driven improvement philosophy that views all activities within an organization as processes whose inputs can be controlled to effect significant improvements in process outputs. Six Sigma uses a rigorous and systematic methodology known as DMAIC (define, measure, analyze, improve, and control) and a number of qualitative and quantitative tools for driving process, product, and service improvements aimed at reducing defects and variation. Companies across various industries are striving to become faster and more responsive to customers, achieve near-perfect quality, and operate using world-class cost structures.

Course Length: 21 hours 4 minutes  
Videos: 50  
Test Questions: 59

Course Name: **Six Sigma Green Belt**  
Course Number: **Pj113**  
Course description:  
To become a Six Sigma Green Belt, you must learn that a process is a means of creating and delivering products and services needed by customers. According to Takashi Osada, Japanese author and quality pioneer, “if the process is right, the results will take care of themselves.” By Six Sigma standards, a “right process” is one that creates and delivers precisely what the customer needs. By this logic, no Six Sigma effort can start without having a high-level picture of an organization’s customers and other stakeholders, their needs, and the business processes meant to fulfill those needs. A thorough analysis of the existing business processes – and the products and services they churn out – is the first step in Six Sigma projects. As a Six Sigma Green Belt, you need to listen to the “voice of the
customer” to find out what customers need, identify opportunities for change and improvement, and translate customer needs into goals and customer deliverables. In this course, learners will examine how to analyze process components and stakeholders in an organization. They will also learn about concepts and tools for collecting and analyzing customer information and feedback.

Course Length: 20 hours 26 minutes
Videos:55
Test Questions:59

Social Media Online Courses

**Course Name:** Basics of Marketing with Social Media  
**Course Number:** S101  
**Course description:**

The "Basics of Marketing with Social Media" course includes the following topics: Social Media Introduction, Creating an Google Account, Setting Up Your Twitter Account, Getting Your Twitter House in Order, Why Facebook for Your Business?, Using Facebook as a Business, Setting Up Your Business Page, Setting Your Cover Photo, Tying It All Together.

Course Length: 36 Minutes  
Videos:10  
Test Questions:58

**Course Name:** Facebook 101  
**Course Number:** S102  
**Course description:**

Social Media is the new word of mouth and has replaced traditional communication mediums in recent years. Most people are only scratching the surface of the interesting things they can do with these social media websites.

Course Length: 1 Hour 16 Minutes  
Videos:18  
Test Questions:58

**Course Name:** Facebook 102 (Facebook 201? On excel sheet?)  
**Course Number:** S103  
**Course description:**

Social Media is the new word of mouth and has replaced traditional communication mediums in recent years. Most people are only scratching the surface of the interesting things they can do with these social media websites.

Course Length: 3 Hours 10 Minutes  
Videos:31  
Test Questions:58
**Course Name:** Google Analytics  
**Course Number:** S104  
**Course description:**
This course will teach students how to master Google Analytics; from the basics all the way through the most advanced features. Once complete, students will be masters at reporting, behavioral data, audience conversion, and will have an extremely well-rounded knowledge base of Google Analytics software. Being proficient in Google Analytics will easily set you apart in the job market, especially since almost every business has an online presence that is crucial to their success.

Course Length: 5 Hours  
Videos: 72  
Test Questions: 75

**Course Name:** Linkedin  
**Course Number:** S105  
**Course description:**
Social Media is the new word of mouth and has replaced traditional communication mediums in recent years. Most people are only scratching the surface on the interesting things they can do with these social media websites.

This is an informational course only  
Course Length: Hours Minutes  
Videos: 10  
Test Questions:

**Course Name:** Marketing with Google and YouTube  
**Course Number:** S106  
**Course description:**
Social Media is the new word of mouth and has replaced traditional communication mediums in recent years. Most people are only scratching the surface on the interesting things they can do with these social media websites.

Course Length: 46 Minutes  
Videos: 20  
Test Questions: 0

**Course Name:** Marketing Tools and Tips for Success  
**Course Number:** S107  
**Course description:**
The "Marketing Tools &amp; Tips for Success" course contains the following topics: Bitly, Woobox, HootSuite, Storify, Social Media “Rules” and Tips.

Course Length: 1 Hour 52 Minutes  
Videos: 20  
Test Questions: 0
Course Name: Microblogging with Tumblr  
Course Number: S108  
Course description: Social Media is the new word of mouth and has replaced traditional communication mediums in recent years. Most people are only scratching the surface on the interesting things they can do with these social media websites.

Course Length: 41 Minutes  
Videos: 10  
Test Questions: 0

Course Name: Social Media Course (Social Media & Digital marketing 101? In excel?)  
Course Number: S109  
Course description: The objective of the Social Media & Digital Marketing course is to help business owners with the online portion of their business through creative marketing ideas implemented through the power of social media, online tools and apps. In this course we are going to take a deep dive into how to generate ideas through online marketing with social media, live streaming, purposefully posting on social media, and lead capture methods. These ideas will then be looked at with the objective of creating reusable content for social media as well as other content platforms (emails, blogging, video and making them all work together without investing a lot of time). You will learn to setup your business Facebook page, use Facebook groups to generate leads and live video topics. We take a step by step look at setting up each part of your page to its max. to attract your ideal customer/client and get them to follow you and eventually do business with you. Do not worry if you do not have anything in place as of yet, this course is a great start for beginners and will get you up to speed in no time.

Course Length: 5 Hours 43 Minutes  
Videos: 43  
Test Questions: 58

Course Name: Using Twitter  
Course Number: S110  
Course description: Social Media is the new word of mouth and has replaced traditional communication mediums in recent years. Most people are only scratching the surface on the interesting things they can do with these social media websites.

Course Length: 42 Minutes  
Videos: 12  
Test Questions: 0

Course Name: Pinterest?  
Course Number: S111  
Course description:
Social Media is the new word of mouth and has replaced traditional communication mediums in recent years. Most people are only scratching the surface on the interesting things they can do with these social media websites.

This is an informational course only

Course Length: Hours 8  Minutes
Videos: 5
Test Questions: needs

Course Name: Reddit
Course Number: S112
Course description:
Social Media is the new word of mouth and has replaced traditional communication mediums in recent years. Most people are only scratching the surface on the interesting things they can do with these social media websites.

Course Length: 8 Minutes
Videos:2
Test Questions:58

VM Ware Online Course

Course Name: VMWare vSphere VCP 5.5
Course Number: V101
Course description:
This course is in preparation for the VMware® vSphere® 5.5 certification exam. VMware® vSphere® 5.5. Virtualization has taken the industry by storm, and those that possess skills in this area have many job prospects paying in excess of 80k per year. Students will learn installing, configuring, and managing VMware vSphere, as well as learn how to configure a scalable virtual infrastructure. Some of the topics covered in this course include Fault Tolerance, vSphere Management Assistant, Storage vMotion, and DPM.

Course Length: 8 Hours 30 Minutes
Videos:61
Test Questions:60

Course Name: VMWare vSphere VCP 6.7
Course Number: V102
Course description:
You will learn how to install, configure, administer and more in this virtualization and cloud platform. Virtualization and Cloud Computing are great skills to learn and possessing these skills will allow you to start or enhance your role in the market. The course topics will prepare you to take and pass the VMware vSphere 6.7 Foundations Exam 2019 (2V0-01.19). In this course you’ll learn the information necessary to create a full vSphere lab environment, running on a Gigabyte BRIX Mini-PC. After the initial lab creation, using Image Builder and PowerCLI, you'll learn the basics of how the vSphere components work.
We'll then go through the configuration of networking and storage, including VSAN. We'll go through creating a virtual machine and using templates and clones, and then we'll cover using vMotion and Snapshots. After the completion of this course, you'll have a running VMware vSphere environment for use for exam prep, or to improve your knowledge and experience with vSphere.

Course Length: 20 Hours 10 Minutes
Videos: 67
Test Questions: 101
Why Cyber World Institute Labs

As more and more businesses become technology-driven, the pressure on IT departments is increasing. Gone are the times when a typical day mostly consisted of resolving helpdesk queries and optimizing the user experience.

Company board executives look to technical advancements to help achieve business goals and it’s down to IT departments to check compatibility and ensure smooth deployment.

Plus, existing applications need to be upgraded constantly, but before implementation, IT pros must ensure that the update won’t impact negatively on current systems. Worryingly, this small window between a new release announcement and actual roll-out can leave your business open to exploitation by hackers. Malicious agents can strike with denial of service attacks, introduce ransomware, capture sensitive data and, in extreme cases, even cripple your business operations.

All this activity is taking place against a backdrop of a global IT skills shortage. Recruiting and retaining skilled IT professionals is more difficult than ever before. The case has never been stronger for businesses to ‘grow their own’ IT talent and extend the breadth of skills across their IT departments.

How do you ensure your IT personnel are keeping pace with the ever-changing IT landscape? Do they have the opportunity to test and experiment before deploying new applications and updates – without compromising your live systems?

What is the Cyber World Institute solution?

Our solution consists of live (not simulated) IT Labs and Exam Preps aligned with certifications from leading vendors such as CompTIA, Microsoft, Cisco and VMware. The custom titles were created working with subject matter experts in key topics such as cybersecurity, or in popular programming languages like Python.

Accessibility is central to all product development and accessibility.

How does it work?

Labs are hosted, maintained and delivered on hundreds of pre-configured lab servers each of which house a series of Lab Devices.

As users log into a lab where the actual practice takes place, they will be prompted to fire up the appropriate lab devices associated with whichever Lab/Exam Prep/Custom title they are accessing at the time.

Cyber World Institute can help you keep up with the pace of change and grow your IT talent:

- Allows your IT employees to practice new IT skills on live equipment without compromising business-critical systems.
- Ethical hacking and red team/blue team cybersecurity labs will show your IT personnel how to identify common security breaches and ways to counter them.
- Multiple device labs allow employees to access different technologies simultaneously.
- Provides a way to confirm the skills of IT candidates and new recruits.
- Embeds existing knowledge and improves competency – increasing productivity.
Acts as a ‘reminder base’ for IT personnel to refresh topic-related skills prior to tackling those tasks at work.

- Keeps your IT personnel up to speed with changing technology.
- 24/7 access via web browser or through LTI integration with your learning management system.
- Gives your employees access to the latest devices, hardware and software – regardless of the age of the physical equipment they are using.
- Easy to follow, step-by-step instruction, reinforced by a variety of test types: text based; live questions; and performance-based testing – embedding learning by challenging IT employees to problem-solve themselves.
- Perfect complement to online IT training programs.
- Automatic grading and reporting allows for hassle-free assessment of user progress.
- 360+ titles to choose from, covering critical topics from leading vendors such as CompTIA, Microsoft, Cisco and VMware.
- Reduces the need for resits to gain IT certification – and the associated costs – by providing a practice ground where employees can test their knowledge beforehand.
- Supports non-IT staff – allowing them to improve their general digital skills and increase their competence with Microsoft Office programs.

**Cyber World Institute Exam Prep Product Portfolio**

Exam Preps are aligned with specific vendor certifications. As vendors replace or update these certifications, new exam preps are created.

Many of Exam Preps have associated lab titles. Labs with exam preps have an asterisk (*) next to the lab number.
## Lab Index and Price List

<table>
<thead>
<tr>
<th>Lab Number</th>
<th>Lab Title</th>
<th>GSA PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>70-236</td>
<td>Configuring Exchange Server 2007</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-238</td>
<td>Deploying Messaging Solutions with Microsoft Exchange Server 2007</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-243</td>
<td>Administering and Deploying System Center 2012 Configuration Manager</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-246</td>
<td>Monitoring and Operating a Private Cloud with System Center 2012</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-247</td>
<td>Configuring and Deploying a Private Cloud with System Center 2012</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-270</td>
<td>Administering Microsoft Windows XP Professional</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-271</td>
<td>Supporting Users and Troubleshooting Windows XP</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-272</td>
<td>Supporting Users and Troubleshooting Desktop Applications in Windows XP</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-284</td>
<td>Implementing and Managing Microsoft Exchange Server 2003</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-290</td>
<td>Managing and Maintaining a Microsoft Windows Server 2003 Environment</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-291</td>
<td>Maintaining a Microsoft Windows Server 2003 Network Infrastructure</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-293</td>
<td>Planning and Maintaining a Microsoft Windows Server 2003 Network</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-294</td>
<td>Maintaining Microsoft Windows Server 2003 Active Directory Infrastructure</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-299</td>
<td>Implementing and Administering Security in a Microsoft Windows Server</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-331</td>
<td>Core Solutions of Microsoft SharePoint Server 2013</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-332</td>
<td>Advanced Solutions of Microsoft SharePoint Server 2013</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-341</td>
<td>Core Solutions of Microsoft Exchange Server 2013</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-342</td>
<td>Advanced Solutions of Microsoft Exchange Server 2013</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-345*</td>
<td>Designing and Deploying Microsoft Exchange Server 2016</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-410*</td>
<td>Installing and Configuring Windows Server 2012</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-411*</td>
<td>Administering Windows Server 2012</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-412*</td>
<td>Configuring Advanced Windows Server 2012 Services</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-415</td>
<td>Implementing a Desktop Infrastructure</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-431</td>
<td>Microsoft SQL Server 2005 Implementation and Maintenance</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-432</td>
<td>Microsoft SQL Server 2008 Implementation and Maintenance</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-433</td>
<td>Microsoft SQL Server 2008 Database Development</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-448</td>
<td>Microsoft SQL Server 2008 BI Development and Maintenance</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-450</td>
<td>Designing Optimizing and Maintaining a Database Administrative</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-451*</td>
<td>Designing Database Solutions and Data Access Using Microsoft SQL Server 2008</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-461*</td>
<td>Querying Microsoft SQL Server 2012</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-462*</td>
<td>Administering Microsoft SQL Server 2012 Databases</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-463*</td>
<td>Implementing a Data Warehouse with Microsoft SQL Server 2012</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-464</td>
<td>Developing Microsoft SQL Server 2012 Databases</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-466</td>
<td>Implementing Data Models and Reports with Microsoft SQL Server</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-467</td>
<td>Designing Business Intelligence Solutions with Microsoft SQL Server</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-542</td>
<td>Microsoft Office SharePoint Server 2007 Application Development</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-630</td>
<td>Configuring Microsoft Office SharePoint Server 2007</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-640</td>
<td>Configuring Windows Server 2008 Active Directory</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-642</td>
<td>Configuring Windows Server 2008 Network Infrastructure</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-643</td>
<td>Configuring Windows Server 2008 Applications Infrastructure</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-646</td>
<td>Windows Server 2008 Server Administrator</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-647</td>
<td>Windows Server 2008 Enterprise Administrator</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-662</td>
<td>Configuring Exchange Server 2010</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-667</td>
<td>Configuring Microsoft SharePoint 2010</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-680</td>
<td>Windows 7 Configuring</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-685</td>
<td>Windows 7 Enterprise Desktop Support Technician</td>
<td>$64.95</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Price</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>70-686</td>
<td>Windows 7 Enterprise Desktop Administrator</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-687</td>
<td>Configuring Windows 8.1</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-688</td>
<td>Supporting Windows 8.1</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-697*</td>
<td>Configuring Windows Devices</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-698*</td>
<td>Installing and Configuring Windows 10</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-740*</td>
<td>Installation Storage and Compute with Windows Server 2016</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-741*</td>
<td>Networking with Windows Server 2016</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-742*</td>
<td>Identify with Windows Server 2016</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-761*</td>
<td>Querying Data with Transact-SQL</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-762*</td>
<td>Developing SQL Databases</td>
<td>$64.95</td>
</tr>
<tr>
<td>70-764*</td>
<td>Administering a SQL Database Infrastructure</td>
<td>$64.95</td>
</tr>
<tr>
<td>74-409</td>
<td>Microsoft Server Virtualization with Windows Server Hyper-V and System Center</td>
<td>$64.95</td>
</tr>
<tr>
<td>77-725*</td>
<td>Microsoft Office - Word 2016</td>
<td>$64.95</td>
</tr>
<tr>
<td>77-727*</td>
<td>Microsoft Office - Excel 2016</td>
<td>$64.95</td>
</tr>
<tr>
<td>77-729*</td>
<td>PowerPoint 2016 - Core Presentation Design and Delivery Skills</td>
<td>$64.95</td>
</tr>
<tr>
<td>77-731*</td>
<td>Outlook 2016 Core Communication, Collaboration and Email Skills</td>
<td>$64.95</td>
</tr>
<tr>
<td>98-349*</td>
<td>Windows Operating System Fundamentals</td>
<td>$64.95</td>
</tr>
<tr>
<td>98-349-r1*</td>
<td>Windows Operating System Fundamentals - Windows 10 Update</td>
<td>$64.95</td>
</tr>
<tr>
<td>98-361</td>
<td>Software Development Fundamentals</td>
<td>$64.95</td>
</tr>
<tr>
<td>98-364</td>
<td>Database Administration Fundamentals</td>
<td>$64.95</td>
</tr>
<tr>
<td>98-364-r1</td>
<td>Database Fundamentals - SQL Server 2016 Update</td>
<td>$64.95</td>
</tr>
<tr>
<td>98-365*</td>
<td>Windows Server Administration Fundamentals</td>
<td>$64.95</td>
</tr>
<tr>
<td>98-365-r1*</td>
<td>Windows Server Administration Fundamentals - Windows 10 Update</td>
<td>$64.95</td>
</tr>
<tr>
<td>98-366*</td>
<td>Networking Fundamentals</td>
<td>$64.95</td>
</tr>
<tr>
<td>98-367*</td>
<td>Security Fundamentals</td>
<td>$64.95</td>
</tr>
<tr>
<td>98-367-r1</td>
<td>Security Fundamentals</td>
<td>$64.95</td>
</tr>
<tr>
<td>98-375</td>
<td>HTML5 Application Development Fundamentals</td>
<td>$64.95</td>
</tr>
<tr>
<td>98-379</td>
<td>Software Testing Fundamentals</td>
<td>$64.95</td>
</tr>
<tr>
<td>98-381*</td>
<td>Introduction to Programming Using Python</td>
<td>$64.95</td>
</tr>
<tr>
<td></td>
<td><strong>Cisco</strong></td>
<td></td>
</tr>
<tr>
<td>200-101</td>
<td>Interconnecting Cisco Networking Devices Part 2</td>
<td>$64.95</td>
</tr>
<tr>
<td>200-105*</td>
<td>Interconnecting Cisco Networking Devices (ICND2 v3.0)</td>
<td>$64.95</td>
</tr>
<tr>
<td>200-120</td>
<td>Cisco Certified Network Associate</td>
<td>$64.95</td>
</tr>
<tr>
<td>200-125</td>
<td>Cisco Certified Network Associate (CCNA v3)</td>
<td>$64.95</td>
</tr>
<tr>
<td>200-301</td>
<td>Implementing and Administering Cisco Solutions (CCNA)</td>
<td>$64.95</td>
</tr>
<tr>
<td>210-260*</td>
<td>Implementing Cisco IOS Network Security</td>
<td>$64.95</td>
</tr>
<tr>
<td>300-101</td>
<td>Implementing Cisco IP Routing (ROUTE)</td>
<td>$64.95</td>
</tr>
<tr>
<td>300-115</td>
<td>Implementing Cisco IP Switched Networks (SWITCH)</td>
<td>$64.95</td>
</tr>
<tr>
<td>300-135</td>
<td>Troubleshooting and Maintaining Cisco IP Networks (TSHOOT)</td>
<td>$64.95</td>
</tr>
<tr>
<td>640-554</td>
<td>Implementing Cisco IOS Network Security</td>
<td>$64.95</td>
</tr>
<tr>
<td>640-802</td>
<td>Cisco Certified Network Associate</td>
<td>$64.95</td>
</tr>
<tr>
<td>640-816</td>
<td>Interconnecting Cisco Networking Devices Part 2</td>
<td>$64.95</td>
</tr>
<tr>
<td>640-822</td>
<td>Interconnecting Cisco Networking Devices Part 1</td>
<td>$64.95</td>
</tr>
<tr>
<td>642-813</td>
<td>Implementing Cisco IP Switched Networks (SWITCH)</td>
<td>$64.95</td>
</tr>
<tr>
<td>642-832</td>
<td>Troubleshooting and Maintaining Cisco IP Networks (TSHOOT)</td>
<td>$64.95</td>
</tr>
<tr>
<td>642-902</td>
<td>Implementing Cisco IP Routing (ROUTE)</td>
<td>$64.95</td>
</tr>
<tr>
<td></td>
<td><strong>CompTIA</strong></td>
<td></td>
</tr>
<tr>
<td>220-1002*</td>
<td>CompTIA A+ Core 2</td>
<td>$64.95</td>
</tr>
<tr>
<td>A-Plus</td>
<td>A + Essentials and Practical Application</td>
<td>$64.95</td>
</tr>
<tr>
<td>CAS-003*</td>
<td>CompTIA Advanced Security Practitioner (CASP)</td>
<td>$64.95</td>
</tr>
<tr>
<td>CS0-001*</td>
<td>CompTIA Cybersecurity Analyst +</td>
<td>$64.95</td>
</tr>
<tr>
<td>CV0-002</td>
<td>CompTIA Cloud+</td>
<td>$64.95</td>
</tr>
<tr>
<td>FC0-U61</td>
<td>CompTIA IT Fundamentals+</td>
<td>$64.95</td>
</tr>
<tr>
<td>LX0-102</td>
<td>Linux + Support Skills</td>
<td>$64.95</td>
</tr>
<tr>
<td>LX0-103</td>
<td>CompTIA Linux +</td>
<td>$64.95</td>
</tr>
<tr>
<td>LX0-104</td>
<td>CompTIA Linux +</td>
<td>$64.95</td>
</tr>
<tr>
<td>XK0-004</td>
<td>CompTIA Linux+</td>
<td>$64.95</td>
</tr>
<tr>
<td>N10-007</td>
<td>CompTIA Network+</td>
<td>$64.95</td>
</tr>
<tr>
<td>SK0-004</td>
<td>CompTIA Server +</td>
<td>$64.95</td>
</tr>
<tr>
<td>SY0-501</td>
<td>CompTIA Security+</td>
<td>$64.95</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Price</td>
</tr>
<tr>
<td>-------------</td>
<td>------------------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>VCP510</td>
<td>VMware Certified Professional vSphere 5</td>
<td>$64.95</td>
</tr>
<tr>
<td>VCP550</td>
<td>VMware Certified Professional 5 – Data Center Virtualization</td>
<td>$64.95</td>
</tr>
<tr>
<td>VCPD-510</td>
<td>VMware Certified Professional - Desktop</td>
<td>$64.95</td>
</tr>
<tr>
<td>VCPC-550</td>
<td>VMware Certified Professional Cloud</td>
<td>$64.95</td>
</tr>
<tr>
<td>VCP6DC*</td>
<td>VMware Certified Professional 6 – Data Center Virtualization</td>
<td>$64.95</td>
</tr>
<tr>
<td></td>
<td><strong>VMware</strong></td>
<td>$64.95</td>
</tr>
<tr>
<td>1Z0-061*</td>
<td>Oracle Database 12c - SQL Fundamentals</td>
<td>$64.95</td>
</tr>
<tr>
<td>1Z0-062*</td>
<td>Oracle Database 12c - Installation and Administration</td>
<td>$64.95</td>
</tr>
<tr>
<td></td>
<td><strong>Oracle</strong></td>
<td>$64.95</td>
</tr>
<tr>
<td>IC3-GS5</td>
<td>IC3 Digital Literacy Certification - Global Standard 5</td>
<td>$64.95</td>
</tr>
<tr>
<td>PLAB-WS01</td>
<td>Introduction to Wireshark</td>
<td>$64.95</td>
</tr>
<tr>
<td>ISC2-CISSP*</td>
<td>Certified Information Systems Security Professional</td>
<td>$64.95</td>
</tr>
<tr>
<td>CUS-EH</td>
<td>Ethical Hacker</td>
<td>$64.95</td>
</tr>
<tr>
<td>PLAB-EH02</td>
<td>Ethical Hacker</td>
<td>$64.95</td>
</tr>
<tr>
<td>PLAB-ZERO</td>
<td>Orientation: Module Zero - Basics</td>
<td>$64.95</td>
</tr>
<tr>
<td></td>
<td><strong>Misc.</strong></td>
<td>$64.95</td>
</tr>
</tbody>
</table>
Lab Descriptions

Lab Name: Configuring Exchange Server 2007 -Lab  
Lab Number: 70-236  
Description: The 70-236 -Lab will provide you with the necessary platform to gain hands on skills in Exchange Server 2007. By completing the lab tasks, you will improve your practical skills in installing, managing, monitoring, and troubleshooting Microsoft Exchange Server 2007; configuring recipients and public folders; monitoring and reporting; managing messaging security; recovering messaging servers and databases.  
These same tasks will help you understand the objectives and competencies required by the MCTS: Microsoft Exchange Server 2007, Configuration certification exam.  
- Install and Configure Microsoft Exchange Server  
- Configuring Recipients and Public Folders  
- Configuring the Exchange Infrastructure  
- Monitoring and Reporting  
- Configuring Disaster Recovery  
Time: 10 hours

Lab Name: Deploying Messaging Solutions with Microsoft Exchange Server 2007  
Lab Number: 70-238  
Description: The 70-238 -Lab will provide you with the necessary platform to gain hands on skills in Exchange Server 2007. By completing the lab tasks, you will improve your practical skills in upgrading to Microsoft Exchange Server 2007, storage group deployment, server role deployment, Antivirus / Antispam protection, transport rules, messaging compliance and monitoring & reporting.  
These same tasks will help you understand the objectives and competencies required by the PRO: Deploying Messaging Solutions with Microsoft Exchange Server 2007 certification exam.  
- Microsoft Exchange Server 2007 Upgrades and Migrations  
- Upgrading to Microsoft Exchange Server 2007  
- Storage Group Deployment  
- Server Role Deployment  
- Antivirus and Antispam Implementation  
- Transport Rules Implementation  
- Messaging Compliance Implementation  
- Monitoring and Reporting  
Time: 10 hours

Lab Name: Administering and Deploying System Center 2012 Configuration Manager  
Lab Number: 70-243  
Description: The 70-243 -Lab will provide you with the necessary platform to gain hands on skills in Microsoft System Centre Configuration Manager 2012. By completing the lab tasks, you will improve your practical skills in planning and designing System Centre Configuration Manager infrastructure, managing operating system deployment (OSD) deploying application and software updates, managing compliance settings, sites, clients, inventory, reports and queries.
These same tasks will help you understand the objectives and competencies required by the Microsoft 70-243 certification exam.

- Planning System Center Configuration Manager
- Configuring an OS deployment in System Center 2012 Configuration Manager
- Creating and Deploying VHD In Progress
- Monitor Application Deployment
- Manage Software Library and Application Catalog
- Create and Monitor Software Updates
- Administering and Deploying Endpoint Protection
- Configuration Items and Baselines
- Manage Collections
- Configure Software Updates
- Manage Site Communications
- Manage Boundary Groups
- Manage Role-based Security
- Deploy Clients
- Manage Client Agent Settings
- Manage Hardware Inventory
- Manage Software Inventory
- Monitor Inventory Data Flow Module
- Building Queries in SCCM

**Time:** 19 Hours

**Lab Name:** Monitoring and Operating a Private Cloud with System Center 2012

**Lab Number:** 70-246

**Description:**
The 70-246 Lab will provide you with the necessary platform to gain hands on skills in Microsoft System Centre 2012 components. By completing the lab tasks you will improve your practical skills in workflow Runbooks & Route Incidents; End to End Monitoring including Overrides, Web Applications, .NET Application Performance Monitoring (APM) & Distributed Applications; Implement service offerings; Monitoring Reports and Dashboards; Service Level Management; Manage Problems in Service Manager and Managing Cloud Resources; Manage compliance, configuration and updates.

These same tasks will help you understand the objectives and competencies required by the MCSE: 70-246 Monitoring and Operating a Private Cloud with System Center 2012 certification exam.

- Implement Workflow
- Implement Service Offerings
- Configure End to End Monitoring
- Create Monitoring Reports and Dashboards
- Implement Service Level Management
- Monitor Application Health
- Manage Problems and Incidents
- Manage Cloud Resources
- Manage Updates
- Implement Backup and Recovery

**Time:** 15 Hours

**Lab Name:** Configuring and Deploying a Private Cloud with System Center 2012

**Lab Number:** 70-247

**Description:**
The 70-247 Lab will provide you with the necessary platform to gain hands on skills in Microsoft System Centre 2012 components. By completing the lab tasks you will improve your practical skills in the following areas: Install System Center components, Configure System Center components, Configure Portals and Dashboards, Configure the Storage fabric, Configure the Network fabric, Configure the Deployment and Update Servers, Configure Clouds and Virtualization Hosts, Configure Private Cloud

**Document Date:** May 15, 2020: MAS Solicitation #47QSMD20R0001
Integration, Configure Integration of Private and Public Cloud, Create and Configure Server APP-V Packages, Update a Service

These same tasks will help you understand the objectives and competencies required by the MCSE: 70-247 Monitoring and Operating a Private Cloud with System Center 2012 certification exam.

- Install System Center Components
- Configure System Center Components
- Configure Portals and Dashboards
- Configure the Storage Fabric
- Configure the Network Fabric
- Configure the Deployment and Update Servers
- Configure Clouds and Virtualization Hosts
- Configure Private Cloud Integration
- Configure Integration of Public and Private Cloud
- Create and Configure Server APP-V Packages
- Update a Service
- Configure and Deploy a Service

Time: 12 Hours

Lab Name: Administering Microsoft Windows XP Professional
Lab Number: 70-270
Description:
The 70-270 -Lab will provide you with the necessary platform to gain hands on skills in Windows XP professional. By completing the lab tasks, you will improve your practical skills in implementing, administering, and troubleshooting Windows XP Professional as a desktop operating system.

These same tasks will help you understand the objectives and competencies required by the Installing, Configuring, and Administering Microsoft Windows XP Professional certification exam.

- Administration of Resources
- Managing files folders and printers
- Implementing, Managing, Monitoring, and Troubleshooting Hardware Devices and Drivers
- Monitoring and Optimizing System Performance and Reliability

Time: 8 hours

Lab Name: Supporting Users and Troubleshooting Windows XP
Lab Number: 70-271
Description:
The 70-271 -Lab will provide you with the necessary platform to gain hands on skills in Windows XP professional. By completing the lab tasks, you will improve your practical skills in performing and troubleshooting attended installation of a Windows XP operating system, configuring and troubleshooting I/O devices, configuring and troubleshooting hardware devices and drivers, configuring and troubleshooting the desktop and User environments and troubleshooting network protocols and services.

These same tasks will help you understand the objectives and competencies required by the Supporting Users and Troubleshooting a Microsoft Windows XP Operating System certification exam.

- Managing and Troubleshooting Access to Resources
- Configuring and Troubleshooting Hardware Devices and Drivers
- Configuring and Troubleshooting the Desktop and User Environments
- Troubleshooting Network Protocols and Services
- Managing files folders and printers in XP

Time: 8 hours
Lab Name:  Supporting Users and Troubleshooting Desktop Applications in Windows XP
Lab Number:  70-272
Description:  
The 70-272 -Lab will provide you with the necessary platform to gain hands on skills in Windows XP professional. By completing the lab tasks, you will improve your practical skills in configuring and troubleshooting applications, resolving issues related to usability, resolving issues related to application customization, configuring and troubleshooting connectivity for applications and configuring application security.

These same tasks will help you understand the objectives and competencies required by the Supporting Users and Troubleshooting Desktop Applications on a Microsoft Windows XP Operating System certification exam.

- Configuring and Troubleshooting Applications
- Resolving Issues Related to Usability
- Resolving Issues Related Application Customization
- Resolving Issues Related Application Customization

Time:  8 hours

Lab Name:  Implementing and Managing Microsoft Exchange Server 2003
Lab Number:  70-284
Description:  
The 70-284 -Lab will provide you with the necessary platform to gain hands on skills in Exchange Server 2003. By completing the lab tasks, you will improve your practical skills in installing, configuring and troubleshooting Exchange Server 2003, Exchange server computers and Exchange organization, managing security in the Exchange environment, managing recipient objects and address Lists, managing and monitoring technologies that support Exchange Server 2003.

These same tasks will help you understand the objectives and competencies required by the Implementing and Managing Microsoft Exchange Server 2003 certification exam.

- Installing Configuring and Troubleshooting Exchange Server 2003
- Managing Monitoring and Troubleshooting Exchange Server Computers
- Managing Monitoring and Troubleshooting the Exchange Organization

Time:  8 hours

Lab Name:  Managing and Maintaining a Microsoft Windows Server 2003 Environment
Lab Number:  70-290
Description:  
The 70-290 -Lab will provide you with the necessary platform to gain hands on skills in Windows Server 2003. By completing the lab tasks, you will improve your practical skills in managing and maintaining physical and logical devices, managing users, computers and groups, managing and maintaining access to resources, managing and maintaining a server environment, managing and implementing disaster recovery.

These same tasks will help you understand the objectives and competencies required by the Managing and Maintaining a Microsoft Windows Server 2003 Environment certification exam.

- Managing and Maintaining Physical and Logical Devices
- Managing Users Computers and Groups
- Managing and Maintaining Access to Resources
- Managing and Maintaining a Server Environment

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
• Managing and Implementing Disaster Recovery

**Time:** 8 hours

<table>
<thead>
<tr>
<th><strong>Lab Name</strong></th>
<th>Maintaining a Microsoft Windows Server 2003 Network Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lab Number:</strong></td>
<td>70-291</td>
</tr>
</tbody>
</table>

**Description:**
The 70-291 -Lab will provide you with the necessary platform to gain hands on skills in Windows Server 2003. By completing the lab tasks, you will improve your practical skills in implementing, managing, and maintaining IP addressing, name resolution, network security, routing and remote access and network infrastructure.

These same tasks will help you understand the objectives and competencies required by the Implementing, Managing, and Maintaining a Microsoft Windows Server 2003 Network Infrastructure certification exam.

• Maintaining IP Addressing  
• Maintaining Name Resolution  
• Implementing and Managing Network Security  
• Implementing and Managing RRAS  
• Managing and Maintaining Routing and Remote Access

**Time:** 8 hours

<table>
<thead>
<tr>
<th><strong>Lab Name</strong></th>
<th>Planning and Maintaining a Microsoft Windows Server 2003 Network Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lab Number:</strong></td>
<td>70-293</td>
</tr>
</tbody>
</table>

**Description:**
The 70-293 -Lab will provide you with the necessary platform to gain hands on skills in Windows Server 2003. By completing the lab tasks, you will improve your practical skills in planning, implementing, and maintaining a network infrastructure, routing and remote access, server availability, network security and security infrastructure.

These same tasks will help you understand the objectives and competencies required by the Implementing, Managing, and Maintaining a Microsoft Windows Server 2003 Network Infrastructure certification exam.

• Planning and Implementing Server Roles and Server Security  
• Planning and Implementing and Maintaining a Network Infrastructure  
• Planning and Implementing and Maintaining Routing and Remote Access  
• Planning and Implementing and Maintaining Server Availability  
• Planning and Maintaining Network Security  
• Planning and Implementing and Maintaining Security Infrastructure

**Time:** 8 hours

<table>
<thead>
<tr>
<th><strong>Lab Name</strong></th>
<th>Maintaining Microsoft Windows Server 2003 Active Directory Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lab Number:</strong></td>
<td>70-294</td>
</tr>
</tbody>
</table>

**Description:**
The 70-294 -Lab will provide you with the necessary platform to gain hands on skills in Windows Server 2003 Active Directory. By completing the lab tasks, you will improve your practical skills in Implementing an Active Directory Infrastructure, Managing & Maintaining an Active Directory
Infrastructure, Implementing User, Computer & Group Strategy and Implementing & Maintaining Group Policy.

These same tasks will help you understand the objectives and competencies required by the Planning, Implementing, and Maintaining a Microsoft Windows Server 2003 Active Directory Infrastructure certification exam. Planning and Implementing an Active Directory Infrastructure Managing and Maintaining an Active Directory Infrastructure Planning and Implementing User and Computer and Group Strategies Planning and Implementing Group Policy Managing and Maintaining Group Policy

**Time:** 8 hours

---

**Lab Name:** Implementing and Administering Security in a Microsoft Windows Server 2003 Network

**Lab Number:** 70-299

**Description:**
The 70-299 -Lab will provide you with the necessary platform to gain hands on skills in Windows Server 2003 security. By completing the lab tasks, you will improve your practical skills in security policies, patch management infrastructure, security for network communications and authentication, authorization and PKI.

These same tasks will help you understand the objectives and competencies required by the Implementing and Administering Security in a Microsoft Windows Server 2003 Network certification exam.

- Implementing Managing and Troubleshooting Security Policies
- Implementing and Managing and Troubleshooting Patch Management Infrastructure
- Implementing and Managing and Troubleshooting Security for Network Communications
- Planning and Configuring and Troubleshooting Authentication and Authorization and PKI

**Time:** 8 hours

---

**Lab Name:** Core Solutions of Microsoft SharePoint Server 2013

**Lab Number:** 70-331

**Description:**
The 70-331 -Lab will provide you with the necessary platform to gain hands on skills in Microsoft SharePoint Server 2013. By completing the lab tasks, you will improve your practical skills in building/managing web applications and site collections, configure managed metadata service and manage content databases. You will also plan and configure authentication, manage user permissions and configure SharePoint security.

These same tasks will help you understand the objectives and competencies required by the MCSE: 70-331 Core Solutions of Microsoft SharePoint Server 2013 certification exam.

- Design Information Architecture
- Design a Logical Architecture
- Plan and Configure Authentication
- Plan and Configure Authorization
- Plan and Configure Platform Security
- Plan and Configure Farm Level Security
- Create and Configure a Managed Metadata Service Application
- Create and configure a User Profile Service (UPA) application
• Provision and configure web applications
• Create and maintain site collections
• Manage site and site collection security
• Manage search
• Manage taxonomy
• Monitor a SharePoint environment
• Tune and optimize a SharePoint environment
• Troubleshoot a SharePoint environment

Time: 16 Hours

Lab Name: Advanced Solutions of Microsoft SharePoint Server 2013
Lab Number: 70-332
Description: The 70-332 -Lab will provide you with the necessary platform to gain hands on skills in Microsoft SharePoint Server 2013 components. By completing the lab tasks you will improve your practical skills in SharePoint High Availability including NLB and SQL Linked Server for SharePoint, Backup and Restore procedures; Social Workload activities including My site Host/Link, User Profile Service Applications and Personal and Social Features for Users or Group; Plan and Configure a Web Content Management (WCM) Workload and Plan an Enterprise Content Management Workload; Upgrade and Migrate a SharePoint Environment; Create and Configure Service Applications and Manage SharePoint Solutions, BI, and Systems Integration.

These same tasks will help you understand the objectives and competencies required by the MCSE/MSCM: 70-332 Advanced Solutions of Microsoft SharePoint Server 2013 certification exam.

• Plan SharePoint High Availability
• Plan Backup and Restore
• Plan a Social Workload
• Plan and Configure a Web Content Management (WCM) Workload
• Plan an Enterprise Content Management Workload
• Evaluate Content and Customizations
• Plan an Upgrade Process
• Upgrade Site Collection
• Create and Configure App Management
• Create and Configure Productivity Services
• Configure Service Application Federation

Time: 13 Hours

Lab Name: Core Solutions of Microsoft Exchange Server 2013
Lab Number: 70-341
Description: The 70-341 -Lab will provide you with the necessary platform to gain hands on skills in Exchange Server 2013. By completing the lab tasks, you will improve your practical skills in Microsoft Exchange Server 2013 transport services, manage protection against malware and unsolicited messages, install and configure the Mailbox Role including recovery and HA solutions. You will also create and configure mail-enabled Objects including access permissions. Finally, you will develop your practical skills in Exchange Server mobility solutions and role-based access control.

These same tasks will help you understand the objectives and competencies required by the MCSE.MCSM: Core Solutions of Microsoft Exchange Server 2013 certification exam.
- Configure and Manage Transport
- Configure and Manage Hygiene
- Plan the Mailbox Role
- Configure and Manage the Mailbox Role
- Deploy and Manage HA Solutions for the Mailbox role
- Develop Backup and Recovery Solutions for the Mailbox Role and Public Folders
- Create and Configure Mail-Enabled Objects
- Manage Mail-Enabled Object Permissions
- Plan and Configure Namespaces and Client Services
- Deploy and Manage Mobility Solutions
- Plan for Impact of Exchange on AD Directory Services
- Plan and Manage Role Based Access Control
- Troubleshoot Client Connectivity

**Time:** 12 Hours

**Lab Name:** Advanced Solutions of Microsoft Exchange Server 2013
**Lab Number:** 70-342
**Description:**
The 70-342 Lab will provide you with the necessary platform to gain hands on skills in Microsoft Exchange Server 2013. By completing the lab tasks, you will improve your practical skills in database availability groups, manage site resilience for Exchange transport services. Understand, implement and troubleshoot email security strategies as well as deploying and managing an IRM with AD RMS. You will cover message archiving, DLP and messaging records management. Finally, you will implement a compliance solution and work with migrating legacy systems.

These same tasks will help you understand the objectives and competencies required by the MCSE: Advanced Solutions of Microsoft Exchange Server 2013 certification exam.
- Manage a Site Resilient DAG
- Design Deploy Manage Site Resilience for Transport
- Troubleshoot Site Resilience Issues
- Select an Appropriate Security Strategy
- Deploy and Manage an IRM with AD RMS
- Configure and Implement Mailbox and Administrative Auditing
- Troubleshoot Security Related Issues
- Configure and Manage an Archiving Solution
- Design and Configure a Data Loss Prevention Solution
- Configure and Administer Messaging Records Management
- Perform eDiscovery
- Implement a Compliance Solution
- Establish Coexistence with Exchange Online
- Migrate Legacy Systems

**Time:** 15 Hours

**Lab Name:** Designing and Deploying Microsoft Exchange Server 2016
**Lab Number:** 70-345
**Description:**
The 70-345 Lab will provide you with the necessary platform to gain hands on skills in Designing and Deploying Microsoft Exchange Server 2016. By completing the lab tasks, you will improve your practical skills in database availability groups, manage site resilience for Exchange transport services. Understand, implement and troubleshoot email security strategies as well as deploying and managing an IRM with AD RMS. You will cover message archiving, DLP and messaging records management. Finally, you will implement a compliance solution and work with migrating legacy systems.
- Manage a Site Resilient DAG
- Design Deploy Manage Site Resilience for Transport
- Troubleshoot Site Resilience Issues
- Select an Appropriate Security Strategy
- Deploy and Manage an IRM with AD RMS
- Configure and Implement Mailbox and Administrative Auditing
- Troubleshoot Security Related Issues
- Configure and Manage an Archiving Solution
- Design and Configure a Data Loss Prevention Solution
- Configure and Administer Messaging Records Management
- Perform eDiscovery
- Implement a Compliance Solution
- Establish Coexistence with Exchange Online
- Migrate Legacy Systems

**Time:** 15 Hours

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
skills in planning, deploying, managing and troubleshooting mailbox databases, client access services and transport services as well as planning, deploying and managing exchange infrastructure, recipients, security, compliance, archiving, eDiscovery, and auditing.

These same tasks will help you understand the objectives and competencies required by the 70-345 Designing and Deploying Microsoft Exchange Server 2016 certification exam.

- Create mailbox databases
- Configure mailbox databases
- Manage mailbox databases
- Add the Exchange Trusted Subsystem group to the local Administrator group.
- Install the FileServer feature on the file share witness.
- Install the Windows Cluster feature.
- Turn off Windows Firewall.
- Create a Database Availability Group (DAG).
- Manage a DAG.
- Add the Exchange Trusted Subsystem group to the local Administrator group.
- Install the FileServer feature on the file share witness.
- Install the Windows Cluster feature.
- Turn off Windows Firewall.
- Create a Database Availability Group (DAG).
- Manage mailbox database copies.
- Disable a mailbox
- Connect a mailbox
- Delete and restore a mailbox
- Create a certificate request for a certification authority.
- Create a new self-signed certificate.
- Export a certificate from an Exchange Server.
- Import a certificate on Exchange Server.
- Configure certificate-based authentication for Outlook on the Web and ActiveSync.
- Create Global Address Lists (GALs).
- Manage GALs.
- Create address lists.
- Manage address lists.
- Create Offline Address Books (OABs).
- Manage OABs.
- Create Hierarchical Address Books (HABs).
- Manage HABs.
- Create Address Book Policies (ABPs).
- Manage ABPs.
- Configure Exchange Server 2016 for mobile devices.
- Create and configure mail-enabled objects in Exchange Server 2016.
- Configure transport services.
- Configure and manage POP3 and IMAP4 services.
- Enable and configure antispam and antimalware functionality.
- Create and configure receive and send connectors
- Manage RBAC
- Configure MRM.
- Create and edit DLP policies
- Manage Policy Tips
- Delete DLP policies
- Assign Discovery Management role to users
- Create and edit eDiscovery searches
- Estimate, preview, and copy the search results
- Delete eDiscovery searches
- Manage litigation hold on mailboxes
- Configure restrictions and custom MailTips
- View the MailTips
- Create and deploy message classifications
- Configure mailbox and admin audit logging
- Perform the mailbox actions to be logged
- View the mailbox and admin audit logs
- Install and configure the BitLocker feature on Exchange servers
- Install Exchange Server 2016 on Windows Server 2012 R2
- Test the client connectivity in Exchange Server 2016

Time: 18 hours 45 minutes

Lab Name: Installing and Configuring Windows Server 2012
Lab Number: 70-410
Description:
The 70-410 -Lab will provide you with the necessary platform to gain hands on skills in Windows Server 2012. By completing the lab tasks you will improve your practical skills in Configure local storage, Configure file and share access, Configure servers for remote management, Create and configure virtual machine settings, Create and configure virtual networks, Deploy and configure Dynamic Host Configuration Protocol (DHCP) service, Deploy and configure DNS service, Install domain controllers, Create and manage Active Directory users and computers, Create and manage Active Directory groups and organizational units (OUs) and Create & Manage Group Policy.

These same tasks will help you understand the objectives and competencies required by the 70-410 Installing and Configuring Windows Server 2012 certification exam.

- Configure Local Storage
- Install and Configure Servers
- Configure Disk Pools
- Managing Failover Clustering and Storage Pools
- Configure File and Share Access
- Create and Configure Virtual Machine Settings
- Create and Configure Virtual Machine Storage
- Create and Configure Virtual Networks
- Configure Network Interface Card Teaming in VMs
- Create and Managed AD Groups and OUs
- Deploy and Configure DHCP Service
- Configure IPv4 and IPv6 Addressing
- Create and Manage Active Directory Users and Computers
- Deploy and Configure DNS Service
- Configure Print and Document Services
- Configure Security Policies
- Install Domain Controllers
- Configure Application Restriction Policies
- Create Group Policy Objects
- Install AD DS on Server Core
- Configure Windows Firewall

Time: 21 hours

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
Lab Name: Administering Windows Server 2012
Lab Number: 70-411
Description:
The 70-411 -Lab will provide you with the necessary platform to gain hands on skills in Windows Server 2012. By completing the lab tasks you will improve your practical skills in Monitoring servers, Distributed File System (DFS), File Server Resource Manager (FSRM), advanced audit policies, DNS zones and records, VPN and routing, Network Policy Server (NPS), Network Access Protection (NAP), Maintain Active Directory, account policies, Group Policy settings and Group Policy preferences.

These same tasks will help you understand the objectives and competencies required by the 70-411 Administering Windows Server 2012 certification exam.

- Install and Configure Windows Deployment Services
- Implement Patch Management
- Monitor Servers
- Configure Distributed File System
- Configure File Server Resource Manager
- Configure File and Disk Encryption
- Configure Advanced Audit Policy
- Configure DNS Zones
- Configure DNS Records
- Configure VPN and Routing
- Configure a Network Policy Server
- Configure Network Access Protection
- Configure Service Authentication
- Configure Domain Controllers
- Maintain Active Directory
- Configure Account Policies
- Configure Group Policy Processing
- Configure Group Policy settings
- Configure Group Policy Preferences
- Manage Group Policy objects

Time: 20 hours

Lab Name: Configuring Advanced Windows Server 2012 Services
Lab Number: 70-412
Description:
The 70-412 -Lab will provide you with the necessary platform to gain hands on skills in Windows Server 2012. By completing the lab tasks, you will improve your practical skills in Configure Network Load Balancing, Configure Failover Clustering, Configure and Optimize Storage, configuring a Forest or Domain, AD Certificate Services, Manage Certificates, Configuring Sites and Manage Active Directory - SYSVOL Replication.

These same tasks will help you understand the objectives and competencies required by the 70-412 Configuring Advanced Windows Server 2012 Services certification exam.

- Configure Network Load Balancing
- Configure Failover Clustering
- Configure Advanced File Services
- Configure and Optimize Storage
- Implement an Advanced DHCP Solution
- Implement an Advanced DNS Solution
- Deploy and Configure IPAM
- Configure a Forest or a Domain
- Configure Sites
- Manage Active Directory and SYSVOL Replication
- Implement Active Directory Federation Services
- Install and Configure AD Certificate Services
- Manage Certificates
- Configure AD Rights Management Services
- Configure and Manage Backups
- Recover Servers
- Configure Trusts

Time: 17 hours
Lab Name: Implementing a Desktop Infrastructure
Lab Number: 70-415
Description:
The 70-415 -Lab will provide you with the necessary platform to gain hands on skills in building, maintaining and deploying Microsoft Windows operating systems. By completing the lab tasks, you will improve your practical skills in creating and managing images, Windows Deployment Services, deployment using System Center 2012 Configuration Manager, user state migration tool, remote desktop session host and desktop security.

These same tasks will help you understand the objectives and competencies required by the 70-415 Implementing a Desktop Infrastructure certification exam.

- Plan Images
- Capture Images
- Design a Deployment Method
- Implement the Deployment Infrastructure
- Implement a Lite Touch Deployment
- Design and Implement User State Migration
- Implement a Zero Touch Deployment
- Plan and Configure a Remote Desktop Session Host
- Configure Desktop Security
- Plan and Implement a Remote Desktop Virtualization Host Infrastructure
- Design and Configure User State Virtualization
- Implement an Update Infrastructure
- Create and Configure Virtual Collections
- Plan and Configure a Remote Desktop Gateway
- Plan and Configure a Remote Desktop Web Access
- Monitor the Virtual Desktop Infrastructure

Time: 10 Hours

Lab Name: Microsoft SQL Server 2005 Implementation and Maintenance
Lab Number: 70-431
Description:
The 70-431 -Lab will provide you with the necessary platform to gain hands on skills in SQL Server 2005. By completing the lab tasks, you will improve your practical skills in installing and configuring SQL server 2005, implementing high availability and disaster recovery, supporting data consumers, maintaining databases, monitoring and troubleshooting SQL server performance and implementing database objects.

These same tasks will help you understand the objectives and competencies required by the MSTS: Microsoft SQL Server 2005 Implementation and Maintenance certification exam.

- Installing and Configuring SQL Server 2005
- Implementing High Availability and Disaster Recovery
- Supporting Data Consumers
- Maintaining Databases
- Monitoring and Troubleshooting SQL Server Performance
- Creating and Implementing Database Objects

Time: 8 hours
Lab Name: Microsoft SQL Server 2008 Implementation and Maintenance  
Lab Number: 70-432  
Description: The 70-432 -Lab will provide you with the necessary platform to gain hands on skills in SQL Server 2008. By completing the lab tasks, you will improve your practical skills in installing SQL Server 2008 and related services, maintaining a SQL Server Databases, Managing SQL Server Security, Data Management Tasks, Troubleshooting and Optimizing SQL Server and High Availability.

These same tasks will help you understand the objectives and competencies required by the MCTS: Microsoft SQL Server 2008, Implementation and Maintenance certification exam.

- Installing SQL Server 2008  
- Configure SQL Server 2008 and related services  
- Maintaining SQL Server Instances  
- Maintaining a SQL Server Database  
- Managing SQL Server Security  
- Performing Data Management Tasks  
- Monitoring Troubleshooting and Optimizing SQL Server  
- Implementing High Availability  

Time: 10 hours

Lab Name: Microsoft SQL Server 2008 Database Development  
Lab Number: 70-433  
Description: The 70-433 -Lab will provide you with the necessary platform to gain hands on skills in SQL Server 2008. By completing the lab tasks, you will improve your practical skills in Tables & Views, Constraints Data Types & partitioning Solutions, Programming Objects, Query Fundamentals, XML Data and Performance Information.

These same tasks will help you understand the objectives and competencies required by the TS: Microsoft SQL Server 2008, Database Development certification exam.  

- Implementing Tables and Views  
- Implementing Constraints Data Types and Partitioning Solutions  
- Implementing Programming Objects  
- Working with Query Fundamentals  
- Applying Additional Query Techniques  
- Working with Additional SQL Server Components  
- Working with XML Data  
- Gathering Performance Information  

Time: 10 hours

Lab Name: Microsoft SQL Server 2008 BI Development and Maintenance  
Lab Number: 70-448  
Description: The 70-448 -Lab will provide you with the necessary platform to gain hands on skills in SQL Server 2008. By completing the lab tasks, you will improve your practical skills in Deploying, Configuring & Maintaining SSIS solutions, SSRS Reports, Caching & Snapshots, Deploying, Implementing & Configuring SSAS solutions.
These same tasks will help you understand the objectives and competencies required by the MCTS: Microsoft SQL Server 2008, Business Intelligence Development and Maintenance certification exam.

- Implementing an SSIS Solution
- Configuring and Deploying and Maintaining SSIS
- Creating reports in SSRS
- Parameters Caching and Snapshots in SSRS
- Extending SSRS reports with code
- Deploying and Configuring SSAS
- Implementing an SSAS Solution

**Time:** 10 hours

**Lab Name:** Designing Optimizing and Maintaining a Database Administrative Solution Using Microsoft SQL Server 2008  
**Lab Number:** 70-450  
**Description:**  
The 70-450 -Lab will provide you with the necessary platform to gain hands on skills in SQL Server 2008. By completing the lab tasks, you will improve your practical skills in SQL server instances and database solutions, database server security solutions, database solutions for high availability, backup and recovery solutions, monitoring Strategies and data distribution.

These same tasks will help you understand the objectives and competencies required by the PRO: Designing, Optimizing and Maintaining a Database Administrative Solution Using Microsoft SQL Server 2008 certification exam.

- Designing a SQL Server Instance and a Database Solution
- Designing a Database Server Security Solution
- Designing SQL Server Instances
- Designing a migration strategy
- Recovery models
- Database monitoring

**Time:** 10 hours

**Lab Name:** Designing Database Solutions and Data Access Using Microsoft SQL Server 2008  
**Lab Number:** 70-451  
**Description:**  
The 70-451 -Lab will provide you with the necessary platform to gain hands on skills in SQL Server 2008. By completing the lab tasks, you will improve your practical skills in database strategies, database tables, programming objects, transaction / concurrency strategies, XML strategies and database performance.

These same tasks will help you understand the objectives and competencies required by the PRO:

- Designing a Database Strategy
- Designing Database Tables
- Designing Programming Objects
- Designing a Transaction and Concurrency Strategy
- Designing an XML Strategy
- Designing Queries for Performance
- Designing a Database for Optimal Performance
Time: 10 hours

Lab Name: Querying Microsoft SQL Server 2012
Lab Number: 70-461
Description:
The 70-461-Lab will provide you with the necessary platform to gain hands on skills in Microsoft SQL Server 2012. By completing the lab tasks you will improve your practical skills in Create and alter tables, Querying data by using SELECT statements, Implement sub-queries, Design views, Implement data types, modifying data (INSERT, UPDATE, and DELETE statements), Combine datasets, Work with functions and Manage transactions.

These same tasks will help you understand the objectives and competencies required by the Querying Microsoft SQL Server 2012 certification exam.

- Create and alter tables using Transact SQL syntax
- Create and alter views
- Create and modify constraints
- Create and alter DML triggers
- Query data by using SELECT statements
- Implementing Sub queries
- Implementing Data Types
- Implementing Aggregate Queries
- Query and Manage XML Data
- Modifying Data
- Working with Functions
- Optimizing Queries
- Troubleshooting Queries

Time: 16 hours

Lab Name: Administering Microsoft SQL Server 2012 Databases
Lab Number: 70-462
Description:
The 70-462-Lab will provide you with the necessary platform to gain hands on skills in Microsoft SQL Server 2012 Databases. By completing the lab tasks, you will improve your practical skills Configuring SQL Server components, Manage SQL Server Agent, Manage and configure databases, Configure and Manage SQL Server instances, Collect and analyze troubleshooting data, Configure and maintain a backup strategy and Manage database permissions.

These same tasks will help you understand the objectives and competencies required by the Administering Microsoft SQL Server 2012 Databases certification exam.

- Install SQL Server and related services
- Implement a migration strategy
- Configure additional SQL Server components
- Manage SQL Server Agent
- Manage and configure databases
- Configure SQL Server instances
- Manage SQL Server Instances
- Identify and Resolve Concurrency Problems
- Audit SQL Server Instances
- Manage Logins and Server Roles
- Manage Database Permissions
- Troubleshoot Security
- Manage Users and Database Roles

Time: 16 hours

Lab Name: Implementing a Data Warehouse with Microsoft SQL Server 2012
Lab Number: 70-463
Description:
The 70-463 -Lab will provide you with the necessary platform to gain hands on skills in Microsoft SQL Server 2012 Data Warehouse concepts. By completing the lab tasks, you will improve your practical skills in implementing Microsoft SQL Server data warehouse, managing connection managers, data flows, deploy SSIS solutions, control flows, data loads, data quality services, data management solutions and managing data quality.

These same tasks will help you understand the objectives and competencies required by the Implementing a Data Warehouse with Microsoft SQL Server 2012 certification exam.

- Design and Implement a Data Warehouse
- Define Connection Managers
- Implementing Data Flow
- Managing SSIS Package Execution
- Implementing Script Tasks
- Implement Control Flow
- Implement Data Load Options
- Troubleshoot Data Integration Issues
- Install and Maintain SSIS Components
- Implement Auditing Logging and Event Handling
- Deploy SSIS Solutions
- Install and maintain Data Quality Services
- Implement Master Data Management Solutions
- Manage Master Data Management Solutions
- Create a Data Quality Project to Clean Data
- Manage Data Quality Project to Clean Data

Time: 16 hours

Lab Name: Developing Microsoft SQL Server 2012 Databases
Lab Number: 70-464
Description:
The 70-464 -Lab will provide you with the necessary platform to gain hands on skills in Microsoft SQL Server 2012. By completing the lab tasks, you will improve your practical skills in managing tables with complex statements, implementing database security and manage transactions and isolation levels. You will also maintain indexes, implement different data types, modifying constraints and working with XML data. Finally, you will create automation scripts, manage views and indexes, tune queries and use estimation plans.

These same tasks will help you understand the objectives and competencies required by the MCSE: Developing Microsoft SQL Server 2012 Databases certification exam.

- Create and alter tables
- Design, implement, and troubleshoot security
- Design the locking granularity level
- Maintain indexes
- Implement data types
- Create and modify constraints
- Work with XML data
- Write automation scripts
- Design and implement stored procedures
- Design T-SQL table-valued and scalar functions
- Create, use, and alter user-defined functions (UDFs)
- Create and alter views
- Create and alter indexes
- Optimize and tune queries
- Troubleshoot and resolve performance problems
- Optimize indexing strategies
- Capture and analyze execution plans
- Collect performance and system information

Time: 19 Hours

Lab Name: Implementing Data Models and Reports with Microsoft SQL Server
Lab Number: 70-466
Description:
The 70-466 Lab will provide you with the necessary platform to gain hands on skills in Microsoft SQL Server 2012 Databases. By completing the lab tasks you will improve your practical skills on the following: Describe the components, architecture, and nature of a BI solution, create a multidimensional database with Analysis Services, implement dimensions in a cube, implement measures and measure groups in a cube, use MDX Syntax, customize a cube, implement a Tabular Data Model in SQL Server Analysis Services, use DAX to enhance a tabular model, create reports with Reporting Services, enhance reports with charts and parameters, manage report execution and delivery and use Data Mining for Predictive Analysis.

These same tasks will help you understand the objectives and competencies required by the 70-466 Implementing Data Models and Reports with Microsoft SQL Server certification exam.

- Design Dimensions and Measures of a Cube
- Design a Schema to Support Cube Architecture
- Create and Configure Measures
- Implement a Cube
- Create Multidimensional Expressions (MDX) Queries
- Implement Storage Design in a Multidimensional Model
- Deploy SSAS databases
- Design a Report

Time: 8 Hours

Lab Name: Designing Business Intelligence Solutions with Microsoft SQL Server
Lab Number: 70-467
Description:
The 70-467 Lab will provide you with the necessary platform to gain hands on skills in Microsoft SQL Server 2012 Databases. By completing the lab tasks you will improve your practical skills in planning for performance and scalability, planning upgrades, maintaining server health, designing a security, partitioning and logging and audit strategies, designing a high availability disaster recovery strategy, planning and managing reporting services configurations, designing a BI reporting solution architecture, designing a data warehouse and cube architecture, designing fact tables and designing and creating MDX calculations.

These same tasks will help you understand the objectives and competencies required by the Microsoft 70-467 certification exam.

- ETL in SSIS and Processing in Analysis Services
- Proactive Caching in SQL Server Analysis Services (SSAS)
- Understanding Performance of Named Queries in Data Source View
- Analyzing Performance Consequences of MDX and DMX Queries
- Creation of Multiple Partitions to improve Query and Load Performance
- Implement Appropriate Indexing Strategy on Fact Tables
• Aggregations in SSAS
• Partitions and Storage Modes in SSAS
• Creating Automated Backup of SQL Server
• Configure Kerberos Constrained Delegation for Analysis Services
• Dynamic Dimension Security in SSAS
• Configure HTTP Access to Analysis Services on IIS
• Design Roles for Calculated Measures
• Parallel Bulk Loading Using Partition Switching
• High Availability and Disaster Recovery
• Configure Logging for ETL Package
• Designing a Reporting Services Dataset
• Manage Excel Services and Reporting for SharePoint
• Plan and Manage Reporting Services Configuration
• Design BI Reporting Solution Architecture Updated
• Design the Data Warehouse
• Design Cube Architecture
• Many to Many Multidimensional Database (SSAS)
• Design and Create MDX Calculations
• Deploy SSIS Solutions
• Design Package Configurations for SSIS Packages

**Time:** 24 Hours

---

**Lab Name:** Microsoft Office SharePoint Server 2007 Application Development  
**Lab Number:** 70-542  
**Description:**

The 70-542 -Lab will provide you with the necessary platform to gain hands on skills in SharePoint Server 2007. By completing the lab tasks, you will improve your practical skills in managing enterprise content, BI solutions, business data catalogue (BDC), application platform services and search service.

These same tasks will help you understand the objectives and competencies required by the MCTS: Microsoft Office SharePoint Server 2007 - Application Development certification exam.

• Managing Enterprise Content  
• Creating Business Intelligence Solutions by Using Office SharePoint Server 2007  
• Integrating Business Data with Office SharePoint Server 2007 by Using the BDC

**Time:** 8 hours

---

**Lab Name:** Configuring Microsoft Office SharePoint Server 2007  
**Lab Number:** 70-630  
**Description:**

The 70-630 -Lab will provide you with the necessary platform to gain hands on skills in SharePoint Server 2007. By completing the lab tasks, you will improve your practical skills in configuring Microsoft office SharePoint Server 2007, managing search, configuring content management, configuring business forms, managing BI and managing administration.

These same tasks will help you understand the objectives and competencies required by the MCTS: Microsoft Office SharePoint Server 2007, Configuring certification exam.

• Configuring Microsoft Office SharePoint Server 2007
• Managing Search
• Configuring Content Management
• Configuring Business Forms
• Managing Business Intelligence
• Managing Administration
• Deploying or Upgrading Microsoft Office SharePoint Server 2007

**Time:** 10 hours

---

**Lab Name:** Configuring Windows Server 2008 Active Directory

**Lab Number:** 70-640

**Description:**
The 70-640 -Lab will provide you with the necessary platform to gain hands on skills in Windows Server 2008. By completing the lab tasks, you will improve your practical skills DNS for Active Directory, configuring Active Directory, Active Directory roles & services, maintaining Active Directory objects and Active Directory Certificate Services.

These same tasks will help you understand the objectives and competencies required by the MCTS: Windows Server 2008 Active Directory, Configuring certification exam.

- Configuring Domain Name System for Active Directory
- Configuring the Active Directory infrastructure
- Configuring Active Directory Roles and Services
- Creating and maintaining Active Directory objects
- Maintaining the Active Directory environment
- Configuring Active Directory Certificate Services

**Time:** 10 hours

---

**Lab Name:** Configuring Windows Server 2008 Network Infrastructure

**Lab Number:** 70-642

**Description:**
The 70-642 -Lab will provide you with the necessary platform to gain hands on skills in Windows Server 2008. By completing the lab tasks, you will improve your practical skills in IP addressing & services, Name resolution, Windows Firewall with Advanced Security, Network access, File & print services and Monitoring & managing a network infrastructure.

These same tasks will help you understand the objectives and competencies required by the MCTS: Windows Server 2008 Network Infrastructure, Configuring certification exam.

- Configuring Addressing and Services
- Configure Windows Firewall with Advanced Security
- Configuring Name Resolution
- Configuring Network Access Server
- Configuring File and Print Services
- Monitoring and Managing a Network Infrastructure

**Time:** 10 hours

---

**Lab Name:** Configuring Windows Server 2008 Applications Infrastructure

**Lab Number:** 70-643

**Description:**
The 70-643 -Lab will provide you with the necessary platform to gain hands on skills in Windows Server 2008 R2. By completing the lab tasks, you will improve your practical skills in deploying servers, remote desktop services, web services infrastructure and network application services.

These same tasks will help you understand the objectives and competencies required by the MCTS: Windows Server 2008 Applications Infrastructure, Configuring certification exam.

- Deploying Servers
- Configuring Remote Desktop Services
- Configuring a Web Services Infrastructure
- Deploying Servers - Storage

Time: 10 hours

Lab Name: Windows Server 2008 Server Administrator
Lab Number: 70-646
Description:
The 70-646 -Lab will provide you with the necessary platform to gain hands on skills in Windows Server 2008 R2. By completing the lab tasks, you will improve your practical skills in server deployments, server management, monitoring & maintaining servers, backup & recovery and application & data provisioning.

These same tasks will help you understand the objectives and competencies required by the Pro: Windows Server 2008, Server Administrator certification exam.

- Planning for Server Deployment
- Planning for Server Management
- Monitoring and Maintaining Servers
- Planning Application and Data Provisioning
- Planning for Business Continuity and High Availability

Time: 10 hours

Lab Name: Windows Server 2008 Enterprise Administrator
Lab Number: 70-647
Description:
The 70-647 -Lab will provide you with the necessary platform to gain hands on skills in Windows Server 2008 R2. By completing the lab tasks, you will improve your practical skills in Network & application services, Identity & access management, Active Directory administrative model and business continuity & data availability.

These same tasks will help you understand the objectives and competencies required by the Pro: Windows Server 2008, Enterprise Administrator certification exam.

- Planning network and application services
- Designing core identity and access management components
- Designing support identity and access management components
- Design the Active Directory Administrative Model
- Designing for business continuity and data availability

Time: 10 hours

Lab Name: Configuring Exchange Server 2010
Lab Number: 70-662
Description:
The 70-662 -Lab will provide you with the necessary platform to gain hands on skills in Exchange Server 2010. By completing the lab tasks, you will improve your practical skills in upgrading to Microsoft Exchange Server 2010, storage group deployment, server role deployment, Antivirus / Antispam protection, transport rules, messaging compliance and monitoring & reporting.

These same tasks will help you understand the objectives and competencies required by the MCTS: Microsoft Exchange Server 2010, Configuration certification exam.

- Installing and Configuring Exchange 2010 Servers
- Configuring Exchange Recipients and Public Folders
- Configuring Client Access
- Configuring Message Transport
- Monitoring and Reporting
- Implementing High Availability and Recovery
- Configuring Message Compliance and Security

Time: 10 hours

Lab Name: Configuring Microsoft SharePoint 2010
Lab Number: 70-667
Description:
The 70-667 -Lab will provide you with the necessary platform to gain hands on skills in Microsoft SharePoint 2010. By completing the lab tasks, you will improve your practical skills in managing user access, managing web applications, backup/restore procedures and optimize the performance of a SharePoint environment.

These same tasks will help you understand the objectives and competencies required by the TS: Microsoft SharePoint 2010, Configuring certification exam.

- Manage Operational Settings
- Managing Accounts and User Roles
- Managing Authentication Providers
- Managing Web Applications
- Managing Site Collections
- Backup and Restore a SharePoint Environment
- Monitor and Analyze a SharePoint Environment
- Optimizing the Performance of a SharePoint Environment

Time: 12 hours

Lab Name: Windows 7 Configuring
Lab Number: 70-680
Description:
The 70-680 -Lab will provide you with the necessary platform to gain hands on skills in Windows 7. By completing the lab tasks, you will improve your practical skills in Installing, Upgrading, & Migrating to Windows 7, Configuring Hardware & Applications, Configuring Network Connectivity, Configuring Access to Resources, Configuring Mobile Computing & Monitoring, Maintaining Systems that Run Windows 7 and Configuring Backup & Recovery Options.

These same tasks will help you understand the objectives and competencies required by the TS: Windows 7, Configuring certification exam.

- Deploying Windows 7
- Configuring Hardware and Applications
- Configuring Network Connectivity
- Configuring Access to Resources
- Configuring Mobile Computing
- Monitoring and Maintaining Windows 7
- Configuring Backup and Recovery

**Time:** 10 hours

**Lab Name:** Windows 7 Enterprise Desktop Support Technician

**Lab Number:** 70-685

**Description:**
The 70-685 -Lab will provide you with the necessary platform to gain hands on skills in Windows 7. By completing the lab tasks, you will improve your practical skills in Identifying Cause of and Resolving Desktop Application Issues, Identifying Cause of and Resolving Networking Issues, Managing and Maintaining Systems That Run Windows 7 and Supporting mobile users.

These same tasks will help you understand the objectives and competencies required by the Pro: Windows 7, Enterprise Desktop Support Technician certification exam.

- Identifying Cause of and Resolving Desktop Application Issues
- Identifying Cause of and Resolving Networking Issues
- Managing and Maintaining Systems That Run Windows 7 Client
- Supporting Mobile Users

**Time:** 10 hours

**Lab Name:** Windows 7 Enterprise Desktop Administrator

**Lab Number:** 70-686

**Description:**
The 70-686 -Lab will provide you with the necessary platform to gain hands on skills in Windows 7. By completing the lab tasks, you will improve your practical skills in Managing software updates, Standard system settings, client security standards, Internet Explorer settings and Identify & Resolve Group Policy Issues.

These same tasks will help you understand the objectives and competencies required by the Pro: Windows 7, Enterprise Desktop Administrator certification exam.

- Plan and Manage Client Licensing and Activation
- Managing and Planning Software Updates
- Designing Standard System Settings
- Define client security standards
- Define Windows Internet Explorer Settings
- Identify and Resolve Group Policy Issues

**Time:** 10 hours

**Lab Name:** Configuring Windows 8.1

**Lab Number:** 70-687

**Description:**
The 70-687 -Lab will provide you with the necessary platform to gain hands on skills in Windows 8.1. By completing the lab tasks you will improve your practical skills in Migrate and configure user data for Windows 8.1, Install and configure desktop applications, Configure Internet Explorer, Configure and
maintain network security, Configure shared resources, Configure local security settings, Configure remote connections, Monitor system performance and Backup and Recovery Options.

These same tasks will help you understand the objectives and competencies required by the Configuring Windows 8.1 certification exam.

- Install and Upgrade to Windows 8
- Migrate and Configure User Data
- Install and Configure Desktop Applications
- Configure Internet Explorer
- Configure IP Settings
- Configure and Maintain Network Security
- Configure Remote Management
- Configure Shared Resources
- Configure File and Folder access
- Configure Local Security Settings
- Configure authentication and authorization
- Configure Remote Connections
- Configure mobility options
- Configure and Manage Updates
- Monitor system performance
- Configure Backup and Recovery Options

Time: 16 hours

Lab Name: Supporting Windows 8.1
Lab Number: 70-688
Description:
The 70-688 -Lab will provide you with the necessary platform to gain hands on skills in Windows 8.1. By completing the lab tasks, you will improve your practical skills in Operating System Installation Strategies, Application Strategies for Desktop Applications, Managing User Settings, Manage Network Connectivity, Remote Access, Authentication and Authorization Strategies, Manage Data Storage, Manage Data Security, Manage Hardware and Printers and Manage Endpoint Security.

These same tasks will help you understand the objectives and competencies required by the Managing and Maintaining Windows 8.1 certification exam.

- Support Operating System and Application Installation
- Support Desktop Apps
- Support Windows Store and Cloud Apps
- Design a Solution for User Settings
- Support Network Connectivity
- Support Remote Access
- Support Authentication and Authorization
- Support Data Storage
- Support Data Security
- Support Operating System and Hardware
- Resolve HW and Device Issues
- Design a Recovery Solution
- Support Client Compliance
- Manage Clients by Using Windows Intune

Time: 14 hours

Lab Name: Configuring Windows Devices
Lab Number: 70-697
Description:
The 70-697 -Lab will provide you with the necessary platform to gain hands on skills in Windows 10. By completing the lab tasks you will improve your practical skills in migrating and configuring user data, configuring Hyper-V, supporting authentication and authorization, configuring IP and network settings, configuring and maintaining network security, supporting data storage and security, configuring file and folder access, configuring shared resources and remote connections, configuring system and file recovery and managing updates.
These same tasks will help you understand the objectives and competencies required by the Microsoft 70-697 certification exam.

- Managing a Homegroup
- Migrate and Configure User Data
- Managing File System Security and Auditing
- Configure EFS and Disk Quota
- Configure BitLocker
- Supporting Application Compatibility Using ACT
- Managing Applications Using App-V
- Managing Files in OneDrive
- Configuring Hyper-V
- Managing Remote Access Connections
- Supporting Mobile Access Using Work Folders
- Managing Network Connectivity
- Configuring IPSec
- Sign up for Microsoft Office 365 Trial
- Install and Configure User Experience Virtualization (UE-V)
- Configuring Data Storage with Distributed File System
- Configure Mobility Options with Offline Files
- Configure and Manage Updates
- Managing System Recovery

**Time:** 19 Hours

**Lab Name:** Installing and Configuring Windows 10

**Lab Number:** 70-698

**Description:**
The 70-698 Lab will provide you with the necessary platform to gain hands on skills in installing and configuring Microsoft Windows 10. By completing the lab tasks, you will improve your practical skills in implementing Windows, configuring and supporting core services and managing and maintaining Windows 10.

These same tasks will help you understand the objectives and competencies required by the Microsoft 70-698 certification exam.

- Implementing Virtual Hard Disk Boot and Windows PE
- Understanding Windows ICD and Licensing
- Implementing Windows 10 Main Features
- Understanding Windows Media Creation Tool and Other Features
- Managing Windows 10 User Interface
- Installing Device Drivers
- Managing Device Drivers
- Implementing Storage Spaces
- Configuring Disk Partitions and VHDs
- Implementing Homegroups
- Managing Printers and File System Security
- Managing Windows Updates
- Monitoring Windows System Performance
- Managing Authorization and Authentication
• Managing Windows Event Logs
• Configure Advanced Management Tools
• Configure Networking
• Configuring Remote Assistance
• Managing Windows Apps
• Managing Windows with Remote Admin Tools
• Configure System and Data Recovery
• Configuring Virtual Private Networks

Time: 22 Hours

Lab Name: Installation Storage and Compute with Windows Server 2016
Lab Number: 70-740
Description: The 70-740 Lab will provide you with the necessary platform to gain hands on skills in Microsoft Windows Server 2016. By completing the lab tasks you will improve your practical skills in installing Windows Servers, implementing storage solution, Windows containers, high availability and Hyper-V and maintaining and monitoring server environments.

These same tasks will help you understand the objectives and competencies required by the Microsoft 70-740 certification exam.
• Installing Server Core
• Installing Windows Server 2016
• Configuring and Managing Nano Server
• Working with Microsoft Assessment and Planning (MAP) Toolkit
• Maintaining Operating System Images Using DISM
• Manage Operating System Images with Windows Deployment Services
• Managing Local Storage and Virtual Hard Disks
• Implementing Storage Pools
• Managing iSCSI Storage
• Implementing Centralized Event Logs
• Managing Virtual Machine Settings
• Managing Virtual Machine Storage
• Managing Virtual Machine Networks
• Implementing Hyper-V Replica
• Managing Hyper-V Fault Tolerance Using Failover Clustering
• Implementing Failover Clustering for Scale-out File Servers
• Managing Virtual Machine Movement
• Managing Server Performance
• Install and Configure Network Load Balancing
• Implementing Windows Server Update Services

Time: 20 Hours

Lab Name: Networking with Windows Server 2016
Lab Number: 70-741
Description: The 70-741 Lab will provide you with the necessary platform to gain hands on skills in Microsoft Windows Server 2016.
By completing the lab tasks, you will improve your practical skills in implementing DNS and DHCP, implementing IP address management, network connectivity and remote access solutions, implementing core and distributed network solutions and advanced network infrastructure.

These same tasks will help you understand the objectives and competencies required by the Microsoft 70-740 certification exam.

- Installing and Configuring DNS Servers Part 1
- Installing and Configuring DNS Servers Part 2
- Implementing DNSSEC
- Managing DNS Zones and Resource Records
- Installing and Configuring DHCP Server Part 1
- Installing and Configuring DHCP Server Part 2
- Implementing DHCPv6 Server
- Managing IPv4 and IPv6 Addresses
- Implementing VPN Solutions Part 1
- Implementing VPN Solutions Part 2
- Installing and Configuring VPN Reconnect
- Implementing Network Policy Server
- Configuring Routing and Network Address Translation
- Install and Configure IPAM
- Configuring Distributed File System
- Implementing BranchCache
- Configuring Advanced Hyper-V Networking Features
- Implementing DirectAccess

Time: 18 Hours

Lab Name: Identify with Windows Server 2016
Lab Number: 70-742
Description:
The 70-742 Lab will provide you with the necessary platform to gain hands on skills in Microsoft Windows Server 2016.

By completing the lab tasks, you will improve your practical skills in installing and configuring Active Directory Domain Services (AD DS), managing and maintaining AD DS, creating and managing group policy, implementing Active Directory Certificate Services (AD CS) and implementing identity federation and access solutions.

These same tasks will help you understand the objectives and competencies required by the Microsoft 70-742 certification exam.

- Install and Configure Enterprise Root CA
- Install and Configure Offline Root CA
- Manage Certificates Part 1
- Manage Certificates Part 2
- Deploy and Manage Domain Controllers Part 1
- Deploy and Manage Domain Controllers Part 2
- Deploy and Manage Domain Controllers Part 3
- Manage Operations Master Roles
- Configure Domain Controller Cloning

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
• Manage Active Directory Accounts Part 1
• Manage Active Directory Accounts Part 2
• Administer Active Directory Groups and OUs
• Manage Active Directory in an Enterprise Environment Part 1
• Manage Active Directory in an Enterprise Environment Part 2
• Maintain Active Directory Part 1
• Maintain Active Directory Part 2

**Time:** 21 Hours

**Lab Name:** Querying Data with Transact-SQL
**Lab Number:** 70-761
**Description:**
The 70-761 Lab will provide you with the necessary platform to gain hands on skills Microsoft SQL Server 2016. By completing the lab tasks, you will improve your practical skills in managing data with Transact-SQL, querying data with advanced Transact-SQL components and programming databases using Transact-SQL.

These same tasks will help you understand the objectives and competencies required by the Microsoft 70-761 Querying Data with Transact-SQL exam.

• Working with SELECT Queries
• Working with SET Operators
• Using Joins
• Implementing Functions
• Working with Aggregate Data
• Working with Built-in Functions
• Modifying Data
• Working with Subqueries
• Working with Apply Operators

• Working with Table Expressions
• Grouping and Pivoting Data
• Working with Temporal Table
• Working with Non-relational Data
• Working with Stored Procedures and Views
• Implementing Error Handling
• Working with Data Types and Null Values

**Time:** 16 Hours

**Lab Name:** Developing SQL Databases
**Lab Number:** 70-762
**Description:**
The 70-762 Lab will provide you with the necessary platform to gain hands on skills Microsoft SQL Server 2016. By completing the lab tasks, you will improve your practical skills in designing and implementing database objects, implementing programmability objects, managing database concurrency and optimizing database objects and SQL infrastructure.

These same tasks will help you understand the objectives and competencies required by the Microsoft 70-762 Developing SQL Databases exam.

• Designing a Relational Database Schema
• Creating Indexes
• Best s in Index Creation
• Creating and Implementing Views
• Creating Columnstore Indexes
• Maintaining Columnstore Indexes
• Creating Constraints
• Effects of Constraints on DML Statements
Creating Stored Procedures with Parameters
Error Handling and Streamlining Stored Procedures
Creating Triggers
Creating User-Defined Functions
Impact of Transactions on DML Statements
Implicit and Explicit Transactions - Creating Savepoints
Manage Isolation Levels
Serializable and Snapshot
Identifying and Analyzing Locking Issues
Implementing Memory-Optimized Tables and Native Stored Procedures
Optimizing Statistics
Optimizing Indexes
Optimizing Query Plans Part 1
Optimizing Query Plans Part 2
Monitoring Performance using SQL Trace and Extended Events
Optimizing Performance for Database Instances Part 1
Optimizing Performance for Database Instances Part 2

Time: 25 Hours

Lab Name: Administering a SQL Database Infrastructure
Lab Number: 70-764
Description: The 70-764 Lab will provide you with the necessary platform to gain hands on skills Microsoft SQL Server 2016.

By completing the lab tasks, you will improve your practical skills in configuring access to data and auditing, managing backups and restoring a database, managing and monitoring SQL Server instances, managing high availability and disaster recovery.

These same tasks will help you understand the objectives and competencies required by the Microsoft 70-764 Administering a SQL Database Infrastructure exam.

- Data Encryption
- Backup and Connection Encryption
- Manage Database Object Permissions
- Configuring Security Options
- Configuring Audits for SQL Server
- Backing Up Databases
- Piecemeal Restore of Database and File Groups
- Working with Restore Options
- Maintaining Database Integrity
- Monitoring the Database Activity
- Configuring Data Collection and UCP
- Managing a Query Store
- Using Trace and Extended Events
- Managing Indexes
- Managing Statistics
- Managing Operators
- Monitoring SQL Server
- Configuring Log Shipping

Time: 22 Hours

Lab Name: Microsoft Server Virtualization with Windows Server Hyper-V and System Center
Lab Number: 74-409
Description: The 74-409 Lab will provide you with the necessary platform to gain hands on skills in Windows Server Hyper-V and System Center. By completing the lab tasks, you will improve your practical skills in
configuring Hyper-V, configuring and managing virtual machine high availability, monitoring and maintaining a server virtualization infrastructure and implementing a server virtualization infrastructure

These same tasks will help you understand the objectives and competencies required by the Microsoft 74-409 certification exam.

- Managing Virtual Machine Settings
- Managing Virtual Machine Storage
- Managing Virtual Machine Networks
- Configure Network Interface Card Teaming
- Managing Virtual Machine Movement
- Managing Hyper-V Fault Tolerance Using Failover Clustering
- Configuring Hyper-V Replica
- Configuring System Center 2012 R2 Virtual Machine Manager
- Administering Network Infrastructure
- Managing Storage Infrastructure
- Managing Windows Update Infrastructure
- Creating and Administering Virtual Machines Using SCVMM
- Managing Virtual Machine Manager Library
- Managing Clouds in Virtual Machine Manager

**Time:** 14 Hours

---

**Lab Name:** Microsoft Office - Word 2016  
**Lab Number:** 77-725  
**Description:**  
The 77-725 Lab will provide you with the necessary platform to gain hands on skills in Word 2016. By completing the lab tasks you will improve your practical skills in creating, formatting and navigating documents, managing and customizing document options, settings and views, printing and saving documents, formatting text, paragraphs and sections, creating tables and lists, creating and managing references, inserting and formatting graphic elements including SmartArt, designing advanced documents and creating custom Word elements.

These same tasks will help you understand the objectives and competencies required by the Microsoft 77-725 and 77-726 certification exam.

- Create and Manage Documents  
- Navigating Word  
- Format a Document  
- Customize Options and Views for Documents  
- Print and Save Documents  
- Insert Text and Paragraphs  
- Format Text and Paragraphs  
- Order and Group Text and Paragraphs

- Creating Tables in a Document  
- Modifying Tables in a Document  
- Create and Modify a List  
- Create and Manage References  
- Insert and Use Content Building Blocks  
- Working with Graphic Elements  
- Format Graphic Elements  
- Insert and Format SmartArt Graphics

**Time:** 16 Hours

---

**Lab Name:** Microsoft Office - Excel 2016  
**Lab Number:** 77-727  
**Description:**  
The 77-727 Lab will provide you with the necessary platform to gain hands on skills in Excel 2016. By completing the lab tasks you will improve your practical skills in creating and managing Worksheets and

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
Workbooks, managing data cells and ranges, creating tables, performing operations with formulas and functions, creating charts and objects, applying custom data formats and layouts and creating advanced formulas, pivot tables and pivot charts.

These same tasks will help you understand the objectives and competencies required by the Microsoft 77-727 and 77-728 certification exam.

- Create Worksheets and Workbooks
- Navigating Excel
- Modifying a Worksheet
- Customizing Excel
- Printing Workbooks and Worksheets
- Understand Workbook Properties
- Manage Data Entry
- Format Cells and Ranges
- Summarize, Organize and Format Data
- Create and Manage Tables
- Manage Table Styles and Options
- Understand Cell References and Formulas
- Performing Calculations using SUM MIN MAX Functions
- Performing Conditional Operations Using Functions
- Format and Modify Text Using Functions
- Create Charts
- Insert and Format Objects

**Time:** 17 Hours

---

**Lab Name:** PowerPoint 2016 - Core Presentation Design and Delivery Skills  
**Lab Number:** 77-729  
**Description:**  
The PowerPoint 2016: Core Presentation Design and Delivery Skills Lab will provide you with the necessary platform to gain hands-on skills in PowerPoint 2016 fundamentals.

By completing the lab tasks, you will improve your practical skills in creating and managing presentations, inserting and formatting various features (including text, shapes, images, tables, charts, SmartArt and media), applying transitions and animations, and managing multiple presentations. These same tasks will help you understand the objectives required by the 77-729 certification exam.

- Start PowerPoint and look around its interface
- Use the PowerPoint interface to interact with the program and its presentations
- Navigate among the elements of the PowerPoint window
- Close the program
- Create a blank presentation and a presentation from a template
- Create and modify slide content by navigating the presentation
- Add slides
- Format slide objects as hyperlinks
- Insert shapes and images
- Save and close a presentation
- Modify the slide master
- Use the slide master to change a layout
- Add and modify a footer
- Apply layout to a slide
- Change a master title style and format some text on individual slides
- Apply background to a slide
- Modify the background applied
- Draw a shape
- Modify a shape
- Layer shapes on your slides
- Insert images
- Resize and crop images
- Add effects and styles to images
- Create a chart
- Change the type and layout of the chart
- Apply styles to the chart
- Import a chart directly from Excel
- Create a table
- Apply styles and formatting to the table
- Import an Excel spreadsheet as a table object
- Apply transition effects to all the slides in your presentation
- Apply transition effects to one or more selected slides
- Import a document outline and a PDF file
- Format text as WordArt
- Preview your presentation before printing
- Work with Print Options
- Adjust Print settings to print handouts, notes, and individual slides
- Add the Quick Print tool to the Quick Access toolbar
- Print your presentation
- Convert bulleted lists to SmartArt, including a process diagram
- Create an organization chart, add shapes to it, change its layout, and format it
- Create new slide masters and apply a slide-master layout to selected slides
- Create and work with animations in a presentation
- Set animation and transition timings by setting effect and timing options
- Insert and work with audio and video in your presentations
- Explore PowerPoint's proofing options, then check the presentation for spelling and grammar errors
- Use comments to review a document
- Compare two versions of a presentation, review the changes, then save the resulting merged version
- Save a presentation as a PDF file, and use it to create Word handouts
- Add and work with slide notes pages
- Explore Presenter view and PowerPoint's Rehearsal mode
- Create and run a custom slide show
- Make a presentation read-only, then password-protect it
- Run compatibility and accessibility check on a presentation, then apply media compression to it

**Time:** 5 hours 30 minutes

---

**Lab Name:** Outlook 2016 Core Communication, Collaboration and Email Skills  
**Lab Number:** 77-731  
**Description:**
The Outlook 2016: Core Communication, Collaboration and Email Skills Lab will take you step-by-step through a series of hands-on tasks to extend your core Outlook skills and build your confidence in using Outlook 2016. These same tasks will also help you understand the objectives required by the 77-731 certification exam.

- Outlook Fundamentals
- Email Basics
- Managing Contacts and Electronic Business Cards
- Create and Manage Tasks
- Manage and Customize your calendar
- Customizing Outlook
- Organizing Outlook Using Folders
- Organizing Outlook Using Categories and Filters
- Organizing Outlook Using Quick Steps
- Managing your mail
- Cleaning your Mailbox and Auto Archive
- Advanced Email Settings
- Customizing Message Appearance Using Styles and Themes
- Notes and Journal Entries
- Using Outlook as a Collaboration Tool

**Time:** 13 Hours 20 Minutes

---

**Lab Name:** Windows Operating System Fundamentals  
**Lab Number:** 98-349  
**Description:** Windows Operating System Fundamentals  
The 98-349 -Lab will provide you with the necessary platform to gain hands on skills in using Microsoft Operating Systems. By completing the lab tasks you will improve your practical skills in managing administrative tools, configuring desktop settings, understand native applications & tools, mobility, remote management, installation types, virtualized clients, manage user account control, manage services, file & print management, encryption, storage, backup and recovery and windows updates.  

These same tasks will help you understand the objectives and competencies required by the MTA: 98-349 Windows Operating System Fundamentals certification exam.

- Configure Control Panel Options  
- Configure Desktop Settings  
- Understand Native Applications and Tools  
- Understand Mobility  
- Understand Remote Management and Assistance  
- Identify Windows Operating System Editions  
- Understand Installation Types  
- Understand Virtualized Clients  
- Understand Application Installations  
- Understand User Account Control  
- Remove Malicious Software  
- Understand Services  
- Understand Application Virtualization  
- Understand File and Print Sharing  
- Understand Encryption  
- Understand Libraries  
- Connect Devices  
- Understand Storage  
- Understand Printing Devices  
- Understand System Devices  
- Understand Backup and Recovery Methods  
- Understand Maintenance Tools  
- Understand Updates

**Time:** 22 Hours

---

**Lab Name:** Windows Operating System Fundamentals - Windows 10 Update  
**Lab Number:** 98-349  
**Description:** The Windows Operating System Fundamentals Lab will provide you with the necessary platform to gain hands on skills in Windows Operating Systems fundamentals. By completing the lab tasks, you will improve your practical skills in operating system configurations, upgrading client systems, managing

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
applications, managing files and folders, managing devices and operating system maintenance. These same tasks will help you understand the objectives and competencies required by the Windows Operating System Fundamentals certification exam.

- Install and test Remote Server Administrative Tools in Windows 10
- Configure different settings for managing files in File Explorer
- Create local user profiles and roaming user profiles
- Customize Start Menu
- Configure settings and learn new features of Microsoft Edge
- Configure computer virtualization with Hyper-V
- Manage personal and common Startup folders in Windows 10
- Manage mobility settings for Sync Center
- Install Remote Server Administration Tools in Windows 10
- Run basic commands in Windows PowerShell such as
- creating PSDrives, setting environment variables, pipelining,
- understand parameters and start, stop, restart services
- Perform remote administration of another Windows computer using PowerShell
- Manage Windows Defender settings
- Create shared folders and modify NTFS permissions
- Configure the prerequisites to successfully create a Windows HomeGroup
- Configure BitLocker on Windows 10 to encrypt entire disk volumes – data and system drives
- Enable EFS on domain-joined Windows computers
- Enable libraries in Windows 10
- Configure the system prerequisites for a successful deployment of Windows 10 using Windows Deployment Services
- Configure the necessary prerequisites for a successful system image recovery of Windows 10
- Create and enable system to restore
- Perform a manual installation of a Windows update, view the different update options, manage update history
- Configure shared disk storage using iSCSI
- Create storage drive type like basic, primary, extended, logical, dynamic disk and VHDs
- Optimize disk subsystem with disk defragmentation and disk clean-up tools
- Start, stop, restart Windows Services using Services console and Windows PowerShell
- Verify SmartScreen settings for Microsoft Edge and Internet Explorer
- Configure the different settings in User Account Control

**Time:** 7 Hours

**Lab Name:** Software Development Fundamentals

**Lab Number:** 98-361

**Description:**
The Software Development Fundamentals Lab will provide you with the necessary platform to gain hands on skills in C#. By completing the lab tasks, you will improve your practical skills in Visual Studio, Data
Types, Decision Structures, Repetition, Error Handling, Classes, Inheritance and Polymorphism, Encapsulation, Algorithms, Data Structures and Web Page Development.

These same tasks will help you understand the objectives and competencies required by the 98-361 Software Development Fundamentals certification exam.

- Understand computer storage and data types
- Understand computer decision structures
- Identify the appropriate method for handling repetition
- Understand error handling
- Understand the fundamentals of classes
- Understand inheritance
- Understand Windows Services
- Understand relational database management systems
- Understand polymorphism
- Understand encapsulation
- Understand Algorithms and Data Structures
- Understand web hosting
- Understand web services
- Understand Windows Store apps
- Understand console-based applications
- Understand database query methods
- Understand database connection methods

**Time:** 15 Hours

<table>
<thead>
<tr>
<th>Lab Name:</th>
<th>Database Administration Fundamentals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lab Number:</strong></td>
<td>98-364</td>
</tr>
<tr>
<td><strong>Description:</strong></td>
<td>Database Administration Fundamentals</td>
</tr>
</tbody>
</table>

The 98-364 Lab will provide you with the necessary platform to gain hands on skills in Microsoft SQL Server 2008 R2. By completing the lab tasks, you will improve your practical skills in Relational Database Concepts, Data Manipulation Statements, Data Definition Language, Tables, Data types, Views, Stored Procedures, select statements, modifying data, Data storage, securing databases and Backing up / Restoring Database.

These same tasks will help you understand the objectives and competencies required by the MTA: 98-364 Database Fundamentals certification exam.

- Understanding Core Database Concepts
- Working with tables
- Choose Data Types
- Working with Views
- Create Stored Procedures
- Select Data
- Modify Data
- Understand Data Storage
- Administering Databases

**Time:** 8 Hours

<table>
<thead>
<tr>
<th>Lab Name:</th>
<th>Database Fundamentals - SQL Server 2016 Update</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lab Number:</strong></td>
<td>98-364</td>
</tr>
<tr>
<td><strong>Description:</strong></td>
<td>Database Fundamentals - SQL Server 2016 Update</td>
</tr>
</tbody>
</table>

The 98-364 Lab will provide you with the necessary platform to gain hands on skills in Microsoft SQL Server 2016. By completing the lab tasks, you will improve your practical skills in:

- Relational Database Concepts
- Data Manipulation Statements
- Data Definition Language
- Tables
- Data types
- Views
- Stored Procedures
- Select statements
- Modifying data
- Data storage
- Securing databases
- Backing up / Restoring Databases.
These same tasks will help you understand the objectives and competencies required by the MTA: 98-364 Windows Server Administration Fundamentals certification exam.

**Time:** 3 hours

**Lab Name:** Windows Server Administration Fundamentals

**Lab Number:** 98-365

**Description:**
The 98-365 -Lab will provide you with the necessary platform to gain hands on skills in Microsoft Windows operating systems. By completing the lab tasks, you will improve your practical skills in device drivers, Windows services, operating system installations, web servers, remote access services, file & print services, user account management, OU’s, Active Directory management, GPO’s, disk management, patch management and performance monitoring.

These same tasks will help you understand the objectives and competencies required by the MTA: 98-365 Windows Server Administration Fundamentals certification exam.

- Understand Device Drivers
- Understand Services
- Understand Server Installation Options
- Identify Application Servers
- Understand Web Services
- Understand Remote Access
- Understand Print Services
- Understand the File Services
- Understand Accounts and Groups
- Understand Organizational Units and Containers
- Understand Active Directory Infrastructure
- Understand Group Policy
- Understand RAID
- Understand Disk Types
- Understand Performance Monitoring
- Understand Business Continuity
- Understand Updates
- Understand Troubleshooting Methodology

**Time:** 13 Hours

**Lab Name:** Windows Server Administration Fundamentals - Windows 10 Update

**Lab Number:** 98-365r

**Description:**
The 98-365r Lab will provide you with the necessary platform to gain hands on skills in Microsoft Windows operating systems. By completing the lab tasks, you will improve your practical skills in: device drivers, Windows services, operating system installations, web servers, remote access services, file & print services, user account management, OU’s, Active Directory management, GPO’s, disk management, patch management and performance monitoring. This Lab has been updated to include a Windows 10 device.

These same tasks will help you understand the objectives and competencies required by the MTA: 98-365 Windows Server Administration Fundamentals certification exam.

**Time:** 30.5 hours

**Lab Name:** Networking Fundamentals

**Lab Number:** 98-366

**Description:**
The 98-366 Lab will provide you with the necessary platform to gain hands on skills in Microsoft Windows networking components. By completing the lab tasks you will improve your practical skills in understand local area networks, routing (Static routing, Dynamic routing, Default routes, etc.).
Configuring a NAT Firewall, IPv4 configuration and administration, IPv6 configuration and administration, name resolution (WINS & DNS), networking services and basic network troubleshooting tools.

These same tasks will help you understand the objectives and competencies required by the MTA: 98-366 Network Fundamentals certification exam.

- Understanding the Concepts of Internet, Intranet and Extranet
- Understand Local Area Networks (LANs)
- Configuring Routing
- Configuring a NAT Firewall

Time: 9 Hours

**Lab Name:** Security Fundamentals  
**Lab Number:** 98-367  
**Description:** The 98-367 Lab will provide you with the necessary platform to gain hands on skills in securing Microsoft Windows Server 2008 R2. By completing the lab tasks, you will improve your practical skills in securing web and email services, understand and manage user authentication / permissions. You will also cover password policies, encryption, network isolation and audit policies. Finally, you will complete labs relating to NAP, protocol security, client and server protection.

These same tasks will help you understand the objectives and competencies required by the MTA: 98-367 Security Fundamentals certification exam.

- Understand Internet Security
- Understand User Authentication
- Understand Permissions
- Understand Password Policies
- Understand Encryption
- Understand Network Isolation
- Understand Audit Policies

Time: 12 Hours

**Lab Name:** Security Fundamentals  
**Lab Number:** 98-367r  
**Description:** Security Fundamentals

The 98-367r Lab will provide you with the necessary platform to gain hands on skills in securing Microsoft Windows Server 2008 R2. By completing the lab tasks, you will improve your practical skills in securing web and email services, understand and manage user authentication / permissions. You will also cover password policies, encryption, network isolation and audit policies. Finally, you will complete labs relating to NAP, protocol security, client and server protection.

These same tasks will help you understand the objectives and competencies required by the MTA: 98-367 Security Fundamentals certification exam.

- Understand Internet Security
- Understand User Authentication
- Understand Permissions

- Understand Password Policies
- Understand Encryption
- Understand Network Isolation
• Understand Audit Policies
• Understand Network Access Protection
• Understand Protocol Security

Time: 12 Hours

Lab Name: HTML5 Application Development Fundamentals
Lab Number: 98-375
Description:
The 98-375 Lab will provide you with the necessary platform to gain hands on skills in HTML application development. By completing the lab tasks, you will improve your practical skills in building a user interface using tags to display text content, media, tags to organize forms, input and validation, formatting a user interface using CSS and coding using JavaScript.

These same tasks will help you understand the objectives and competencies required by the Microsoft 98-375 certification exam.
• Configuring HTML5 Tags for Text Display
• Configuring HTML5 to Play Video and Audio Files
• Configuring HTML5 Tags to Organize Content and Forms
• Configuring HTML5 Tags for Input and Validation
• Using CSS to Format User Interface in HTML5
• Using CSS to Manage Content in HTML5
• Using CSS to Manage the Graphical Interface in HTML5
• Using JavaScript and JQuery in HTML5
• Using JavaScript to Manage User Interface Elements in HTML5
• Using JavaScript in HTML5 for Animation
• Using JavaScript in HTML5 for Data and File Access
• Using JavaScript in HTML 5 for Touch Screen Detection
• Using JavaScript with HTML5 APIs

Time: 13 Hours

Lab Name: Software Testing Fundamentals
Lab Number: 98-379
Description:
The 98-379 Lab will provide you with the necessary platform to gain hands on skills in Microsoft Visual Studio. By completing the lab tasks, you will improve your practical skills in creating software tests, automating software testing, testing fundamentals and methodologies, managing software testing projects and working with bugs.

These same tasks will help you understand the objectives and competencies required by the Microsoft 98-379 certification exam.
• Fundamentals of Software Programming
• Testing Methodologies
• Unit and Integration Testing
• Performance Testing and Testing Tools
• Creating Use Case Diagrams

Time: 15 Hours
Lab Name: Introduction to Programming Using Python

Lab Number: 98-381

Description:
The Introduction to Programming Using Python Lab will provide you with the necessary platform to gain hands on skills in programming using Python. By completing the lab tasks, you will improve your practical skills in performing operations using data types and operators, controlling flow with decisions and loops, performing input and output operations, documenting and structuring code, performing troubleshooting and error handling and performing operations using modules and tools.

These same tasks will help you understand the objectives and competencies required by the 98-361 Introduction to Programming Using Python certification exam.

- Create a program to store and print data of types string, integer, float, and Boolean
- Use the multiple assignment feature in Python programs
- Use the type () function to determine the data type of variables
- Write a program to create a list
- Write a program to update an item in a list
- Write a program to sort the items in a list
- Write a program to slice the items in a list
- Use the arithmetic, comparison, and logical operators in Python programs
- Write a program to use the identity and membership operators
- Use the if-else and nested if-else statements in Python programs
- Use compound conditional expressions in Python programs
- Use for loops, break and continue statements in Python programs
- Use for loops, while loops, and if...else statements in Python programs
- Use nested for loops in Python programs
- Open, read, and close text files in Python programs
- Copy the contents of one text file to another in Python programs
- Merge text files in Python programs
- Accept console inputs and print formatted output in Python programs
- Use command-line arguments in a Python program
- Structure Python programs by defining functions
- Define functions with default arguments in Python programs
- Define functions with keyword and positional arguments in Python programs

Time: 7 hours

Lab Name: Interconnecting Cisco Networking Devices Part 1
Lab Number: 100-101

Description: Interconnecting Cisco Networking Devices Part 1

The 100-101 ICND1 Lab will provide you with the necessary platform to gain hands on skills using real Cisco Routers and Switches. By completing the lab tasks you will improve your practical skills in installing, managing, monitoring, and troubleshooting basic router and switch configurations; securing switches and routers; configuring layer 2 technologies such as VLANs and Trunks; configuring routing protocols including static and default routing and OSPF; configuring IP related services such as DHCP, NTP and Syslog.

These same tasks will help you understand the objectives and competencies required by the Interconnecting Cisco Networking Devices Part 1 100-101 exam.

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
- Configure and verify initial switch configuration
- Configuring VLANs and Trunks
- Configure and verify initial router configuration
- Configure and verify routing configuration for static and default routes
- Configure and verify OSPF in a single area
- Configure and verify interVLAN routing using a router on a stick
- Configuring SVI interfaces and secondary IP addresses
- Configure and verify IP Services
- Configure and verify ACLs in a network environment
- Configure and verify switch port security features
- Configure and verify NAT for given network requirements
- Troubleshooting ACLs
- Troubleshooting interVLAN routing and host configuration issues
- Troubleshoot switch related technologies

**Time:** 14 Hours

**Lab Name:** Interconnecting Cisco Networking Devices (ICND1 v3.0)

**Lab Number:** 100-105

**Description:**
The 100-105 ICND1 Lab will provide you with the necessary platform to gain hands on skills using real Cisco Routers and Switches.

By completing the lab tasks you will improve your practical skills in installing, managing, monitoring, and troubleshooting basic router and switch configurations; securing switches and routers; configuring layer 2 technologies such as VLANs and Trunks; configuring routing protocols including static and default routing and OSPF; configuring IP related services such as DHCP, NTP and Syslog.

These same tasks will help you understand the objectives and competencies required by the Interconnecting Cisco Networking Devices (ICND1 v3.0) 100-105 exam.

- Performing Initial Device Configuration
- Troubleshooting Methodologies
- Configure, Verify, and Troubleshoot IPv4 Addressing and Subnetting
- Configure, Verify, and Troubleshoot IPv6 Addressing
- Configure and Verify Switching Concepts
- Interface Configuration and Cabling
- Configuring and Verifying VLANs
- Configure, Verify and Troubleshoot Interswitch Connectivity
- Configure, Verify and Troubleshoot Port Security
- Configure, Verify and Troubleshoot Inter-VLAN Routing
- Compare Static and Dynamic Routing
- Configure and verify RIPv2 for IPv4
- Configure and Verify DHCP and DNS
- Configuring and Verifying NTP Operation
- Configure and Verify Standard Access Lists
- Configure and Verify NAT
- Configure and Verify Device Management
- Device Maintenance Procedures
- Cisco IOS Troubleshooting Tools
**Lab Name:** Interconnecting Cisco Networking Devices Part 2  
**Lab Number:** 200-101  
**Description:**  
The 200-101 ICND2 -Lab will provide you with the necessary platform to gain hands on skills using real Cisco Routers and Switches. By completing the lab tasks you will improve your practical skills in installing, managing, monitoring, and troubleshooting basic router and switch configurations; configuring layer 2 technologies such as EtherChannels and spanning-tree; configuring the EIGRP routing protocol; configuring simple WAN links using HDLC, PPP and frame-relay; recognizing high availability including HSRP, VRRP and GLBP; managing Cisco IOS files; troubleshooting various layer2 and layer3 technologies.  

These same tasks will help you understand the objectives and competencies required by the Interconnecting Cisco Networking Devices Part 2 200-101 exam.  
- Spanning tree and EtherChannels  
- Configure and verify OSPF in a single area  
- Configure and verify EIGRP in a single AS  
- Manage Cisco IOS files  
- Recognize high availability  
- Configure and verify a basic WAN connection  
- Configure and verify Frame Relay connections  
- Troubleshooting the WAN  
- Troubleshoot OSPF routing related problems  
- Troubleshoot EIGRP routing related problems  
- Troubleshoot switch related technologies  
- Final review test lab  

**Time:** 19 Hours

---

**Lab Name:** Interconnecting Cisco Networking Devices (ICND2 v3.0)  
**Lab Number:** 200-105  
**Description:**  
The 200-105 ICND2 -Lab will provide you with the necessary platform to gain hands on skills using real Cisco Routers and Switches.  

By completing the lab tasks you will improve your practical skills in installing, managing, monitoring, and troubleshooting basic router and switch configurations; configuring layer 2 technologies such as EtherChannels and spanning-tree; configuring the EIGRP routing protocol; configuring simple WAN links using HDLC, PPP and frame-relay; recognizing high availability including HSRP, VRRP and GLBP; managing Cisco IOS files; troubleshooting various layer2 and layer3 technologies.  

These same tasks will help you understand the objectives and competencies required by the Interconnecting Cisco Networking Devices (ICND2 v3.0) 200-105 exam.  
- Configure, Verify, and Troubleshoot VLANs  
- Configure, Verify, and Troubleshoot Interswitch Connectivity  
- Configure, Verify, and Troubleshoot Spanning Tree Protocols  
- Configure, Verify, and Troubleshoot STP Related Features  
- Configure, Verify, and Troubleshoot EtherChannel  
- Configure, Verify, and Troubleshoot Inter-VLAN Routing  

**Time:** 12 Hours
Configure, Verify, and Troubleshoot Single Area OSPFv2 for IPv4
Configure, Verify, and Troubleshoot Multi Area OSPFv2 for IPv4
Configure, Verify, and Troubleshoot Single Area OSPFv3 for IPv6
Configure, Verify, and Troubleshoot Multi Area OSPFv3 for IPv6
Configure and Verify EIGRP for IPv4
Configure and Verify EIGRP for IPv6
Configure and Verify PPP on WAN Interfaces
Configure and Verify PPPoE Client-Side Interfaces
Configure, Verify, and Troubleshoot GRE Tunnel Connectivity
Configure and Verify Basic HSRP
Configure and Verify IPv4 and IPv6 Access Lists for Traffic Filtering
Configure and Verify Device-Monitoring Protocols
Troubleshoot Network Connectivity Issues Using ICMP Echo-Based IP SLA
Troubleshoot and Resolve problems using Local SPAN
Troubleshoot Basic Layer 3 End-to-End Connectivity Issues

Time: 22 Hours

Lab Name: Cisco Certified Network Associate
Lab Number: 200-120
Description:
The 200-120 CCNA -Lab will provide you with the necessary platform to gain hands on skills using real Cisco Routers and Switches. By completing the lab tasks you will improve your practical skills in installing, managing, monitoring, and troubleshooting basic router and switch configurations; securing switches and routers; configuring layer 2 technologies such as VLANs, Trunks, EtherChannels and spanning-tree; configuring routing protocols including static and default routing, EIGRP and OSPF; configuring simple WAN links using HDLC, PPP and frame-relay; configuring IP related services such as DHCP, NTP and Syslog.

These same tasks will help you understand the objectives and competencies required by the Cisco Certified Network Associate 200-120 exam.
- Configure and verify initial switch configuration
- Configuring VLANs and Trunks
- Configure and verify switch port security features
- Spanning tree and EtherChannels
- Configure and verify initial router configuration
- Configure and verify routing configuration for static and default routes
- Configure and verify interVLAN routing using a router on a stick
- Configure and verify OSPF in a single area
- Configure and verify EIGRP in a single AS
- Configuring SVI interfaces and secondary IP addresses
- Configure and verify IP Services
- Configure and verify ACLs in a network environment
- Configure and verify NAT for given network requirements
- Recognize high availability
- Configure and verify a basic WAN connection
- Configure and verify Frame Relay connections
- Manage Cisco IOS files
- IPv6 and OSPF V3
• Troubleshoot OSPF routing related problems
• Troubleshoot EIGRP routing related problems
• Troubleshooting interVLAN routing and host configuration issues
• Troubleshooting the WAN
• Troubleshooting ACLs
• Troubleshoot switch related technologies
• Final review test lab

Time: 20 Hours

Lab Name: Cisco Certified Network Associate (CCNA v3)
Lab Number: 200-125
Description:
The 200-125 CCNA -Lab will provide you with the necessary platform to gain hands on skills using real Cisco Routers and Switches.

By completing the lab tasks you will improve your practical skills in installing, managing, monitoring, and troubleshooting basic router and switch configurations; securing switches and routers; configuring layer 2 technologies such as VLANs, Trunks, EtherChannels and spanning-tree; configuring routing protocols including static and default routing, EIGRP and OSPF; configuring simple WAN links using HDLC, PPP and frame-relay; configuring IP related services such as DHCP, NTP and Syslog.

These same tasks will help you understand the objectives and competencies required by the Cisco Certified Network Associate 200-125 exam.
• Performing Initial Device Configuration
• Troubleshooting Methodologies
• Configure Verify and Troubleshoot IPv4 Addressing and Subnetting
• Configure Verify and Troubleshoot IPv6 Addressing
• Configure and Verify Switching Concepts
• Interface Configuration and Cabling
• Configuring and Verifying VLANs
• Configure Verify and Troubleshoot Interswitch Connectivity
• Configure Verify and Troubleshoot Inter-VLAN Routing
• Compare Static and Dynamic Routing
• Configure and Verify DHCP and DNS
• Configure and Verify Standard Access Lists
• Configure and Verify NAT
• Configure and Verify Device Management
• Device Maintenance Procedures
• Configure Verify and Troubleshoot Spanning Tree Protocols
• Configure Verify and Troubleshoot STP Related Features
• Configure Verify and Troubleshoot EtherChannel
• Configure and Verify RIPv2 for IPv4
• Configure Verify and Troubleshoot Single Area OSPFv2 for IPv4
• Configure Verify and Troubleshoot Multi Area OSPFv2 for IPv4
• Configure Verify and Troubleshoot Single Area OSPFv3 for IPv6
• Configure Verify and Troubleshoot Multi Area OSPFv3 for IPv6
• Configure and Verify EIGRP for IPv4
• Configure and Verify EIGRP for IPv6
• Configure and Verify PPP on WAN Interfaces
• Configure and Verify PPPoE Client-Side Interfaces
• Troubleshoot Network Connectivity Issues using ICMP Echo-Based IP SLA
• Cisco IOS Troubleshooting Tools

Time: 29 Hours

Lab Name: Implementing and Administering Cisco Solutions (CCNA)
Lab Number: 200-301
Description:
The Cisco 200-301 Cisco Certified Network Associate (CCNA) Lab is an entry level certification to provide you with the necessary hands-on skills on configuring and managing Cisco networking equipment. You will learn how to setup and configure switches and routers to ensure smooth functionality of the network. After completion, you will be able to plan and configure different IP ranges for a network and configure Cisco equipment accordingly. The tasks in the exercises are aligned to give you in depth knowledge of configuring and maintaining a network using Cisco networking equipment.

Time: 21 Hours

Lab Name: Implementing Cisco IOS Network Security
Lab Number: 210-260
Description:
The 210-260 IINS Lab will provide you with the necessary platform to gain hands on skills using real Cisco Routers, Switches and Firewalls. By completing the lab tasks, you will improve your practical skills in securing routers and switches and their associated networks, implementing the Cisco ASA firewall and creating SSL and IPSec based VPNs.

These same tasks will help you understand the objectives and competencies required by the Implementing Cisco IOS Network Security 210-260 exam.

• Implement security on Cisco routers using the CLI
• Securing the management plane on Cisco routers using the CLI
• Implement IOS features to mitigate threats in a network
• Implement VLANs and trunking
• Spanning tree and other layer 2 best s
• Implement zone-based policy firewall using the CLI
• Implement the Cisco Adaptive Security Appliance
• Implement Network Address Translation and Port Address Translation
• Configure Cisco IOS IPS using the CLI
• Implement an IOS IPSec site-to-site VPN with pre-shared key authentication
• Implement SSL VPN using ASA device manager

Time: 11 Hours

Lab Name: Implementing Cisco IP Routing (ROUTE)
Lab Number: 300-101
Description:
The 300-101 Lab provides you with Cisco router and switch hardware to gain hands on skills in Cisco routing technologies. By completing the lab tasks you will improve your practical skills in Configuring PPP, IPv4 addressing and subnetting, Static and default routing, Configuring routing protocols including RIPng, OSPF, EIGRP and BGP for both IPv4 and IPv6, Route redistribution techniques, Policy based
routing & IP SLA, tracking objects, NAT, device management and access-control and router security features.

These same tasks will help you understand the objectives and competencies required by the Cisco Certified Network Professional ROUTE exam.

- Configure and verify PPP
- Configure and verify IPv4 addressing and subnetting
- Configure and verify static and default routing
- Configure and verify VRF lite
- Route redistribution and filtering techniques
- EIGRP Route summarization
- OSPF Route summarization
- Configure and verify policy-based routing
- Configure and verify RIPng
- Configure and verify EIGRP
- Configure and verify EIGRP for IPv6
- Configure and verify OSPF
- Configure and verify OSPF for IPv6
- Configure and verify BGP
- Configure and verify BGP for IPv6
- Configure and verify GRE
- Configure device management and access control
- Configure and verify router security features
- Configuring network services
- Configure and verify IPv4 Network Address Translation
- Configure and verify IP SLA
- Configure and verify tracking objects

Time: 25 Hours

Lab Name: Implementing Cisco IP Switched Networks (SWITCH)
Lab Number: 300-115
Description:
The 300-115 -Lab provides you with Cisco switch and router hardware to gain hands on skills in Cisco switching technologies. By completing the lab tasks, you will improve your practical skills in Switch operation and administration, Switch port configuration, VLANs and Trunks, EtherChannels, spanning tree and protecting spanning-tree, Multi-Layer switching, High availability (first hop redundancy protocols), SPAN ports and Securing Switch Access.

These tasks will help you understand the objectives and competencies required by the Cisco Certified Network Professional SWITCH exam.

- Configure and verify switch administration
- Configure and verify Layer 2 protocols
- Configure and verify VLANs and Trunks
- Configure and verify EtherChannels
- Configure SPAN ports
- Configure and verify switch security features
- Configure and verify first-hop redundancy protocols
- Spanning tree
- Advanced Spanning tree
- Protecting Spanning tree
- Multi-Layer Switching
- Configuring VACLs

Time: 15 Hours

Lab Name: Troubleshooting and Maintaining Cisco IP Networks (TSHOOT)
Lab Number: 300-135
Description:
The 300-135 -Lab provides you with Cisco router and switch hardware to gain hands on skills in troubleshooting Cisco and general networking technologies. By completing the lab tasks, you will
improve your practical troubleshooting skills in routing protocols including EIGRP, OSPF, OSPFv3 and BGP, route redistribution, interface configuration, layer 2 problem solving including VTP, VLANs, trunks and port-channels, access-lists and traffic filters and many more networking technologies.

These same tasks will help you understand the objectives and competencies required by the Cisco Certified Network Professional TSHOOT exam.

- Troubleshooting and maintenance tools
- Troubleshooting PLABS set 1
- Troubleshooting PLABS set 2
- Troubleshooting PLABS set 3
- Troubleshooting PLABS set 4
- Troubleshooting PLABS set 5
- Troubleshooting PLABS set 6
- Troubleshooting PLABS set 7
- Troubleshooting PLABS set 8
- Troubleshooting PLABS set 9 IPv6
- Troubleshooting PLABS set 10 IPv6
- Troubleshooting PLABS set 11 IPv6

**Time**: 15 Hours

**Lab Name**: Implementing Cisco IOS Network Security

**Lab Number**: 640-554

**Description**: The 640-554 IINS -Lab will provide you with the necessary platform to gain hands on skills using real Cisco Routers, Switches and Firewalls. By completing the lab tasks, you will improve your practical skills in securing routers and switches and their associated networks, implementing the Cisco ASA firewall and creating SSL and IPSec based VPNs.

These same tasks will help you understand the objectives and competencies required by the Implementing Cisco IOS Network Security 640-554 exam.

- Implement security on Cisco routers using CCP
- Securing the management plane on Cisco routers using the CLI
- Implement IOS features to mitigate threats in a network
- Implement VLANs and trunking
- Spanning tree and other layer 2 best s
- Implement zone-based policy firewall using CCP
- Implement the Cisco Adaptive Security Appliance
- Implement Network Address Translation and Port Address Translation
- Configure Cisco IOS IPS using CCP
- Implement an IOS IPSec site-to-site VPN with pre-shared key authentication
- Implement SSL VPN using ASA device manager

**Time**: 12 Hours

**Lab Name**: Cisco Certified Network Associate

**Lab Number**: 640-802

**Description**: The 640-802 -Lab will provide you with the necessary platform to gain hands on skills using real Cisco Routers and Switches. By completing the lab tasks, you will improve your practical skills in installing, managing, monitoring, and troubleshooting basic router and switch configurations; configuring basic switch and router security; configuring VLANs and associated routing and protocols; and configuring simple WAN links.

These same tasks will help you understand the objectives and competencies required by the Cisco Certified Network Associate exam.

- Implement a small switched network

167

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
• Verifying interface operation
• Implement a small routed network
• Managing Cisco Devices
• Configure verify and troubleshoot a switch with VLANs and Interswitch communications
• Configure verify and troubleshoot OSPF
• Configure verify and troubleshoot EIGRP
• Implement verify and troubleshoot NAT and ACLs in a medium size Enterprise branch office network
• Implement and verify WAN links

**Time:** 12 Hours

**Lab Name:** Interconnecting Cisco Networking Devices Part 2  
**Lab Number:** 640-816  
**Description:**
The 640-816 -Lab will provide you with the necessary platform to gain hands on skills using real Cisco Routers and Switches. By completing the lab tasks, you will improve your practical skills in installing, managing, monitoring, and troubleshooting basic router and switch configurations; configuring basic switch and router security; configuring VLANs and associated routing and protocols; and configuring simple WAN links.

These same tasks will help you understand the objectives and competencies required by the Interconnecting Cisco Networking Devices Part 2 exam or as part of the Cisco Certified Network Associate exam.

• Configure verify and troubleshoot a switch with VLANs and Interswitch communications
• Configure verify and troubleshoot OSPF
• Configure verify and troubleshoot EIGRP
• Implement verify and troubleshoot NAT and ACLs in a medium size Enterprise branch office network
• Implement and verify WAN links

**Time:** 10 Hours

**Lab Name:** Interconnecting Cisco Networking Devices Part 1  
**Lab Number:** 640-822  
**Description:**
The 640-822 -Lab will provide you with the necessary platform to gain hands on skills using real Cisco Routers and Switches. By completing the lab tasks, you will improve your practical skills in installing, managing, monitoring, and troubleshooting basic router and switch configurations; managing configuration files; building basic RIP configurations; configuring basic NAT translations using SDM; and configuring simple WAN links.

These same tasks will help you understand the objectives and competencies required by the Interconnecting Cisco Networking Devices Part 1 exam or as part of the Cisco Certified Network Associate exam.

• Implement a small switched network
• Implement an IP addressing scheme and IP services to meet network requirements for a small branch office
• Verifying interface operation
• Implement a small routed network
• Managing Cisco Devices
- Implement and verify WAN links

**Time:** 10 Hours

**Lab Name:** Implementing Cisco IP Switched Networks (SWITCH)
**Lab Number:** 642-813

**Description:**
The 642-813 -Lab provides you with the relevant Cisco hardware to gain hands on skills in Cisco routing and Switching technologies. By completing the lab tasks, you will improve your practical skills in Switch operation, Switch port configuration, VLANs and Trunks, Advanced VLANs, configuring link aggregation, spanning tree, Advanced Spanning tree, Protecting Spanning tree, Multi-Layer Switching, High availability and Securing Switch Access.

These same tasks will help you understand the objectives and competencies required by the Cisco Certified Network Professional SWITCH exam.

- Switch operation
- Switch port configuration
- VLANs and Trunks
- Advanced VLANs
- Configuring link aggregation
- Spanning tree
- Advanced Spanning tree
- Protecting Spanning tree
- Multi-Layer Switching
- High availability
- Securing Switch Access

**Time:** 12 Hours

**Lab Name:** Troubleshooting and Maintaining Cisco IP Networks (TSHOOT)
**Lab Number:** 642-832

**Description:**
The 642-832 -Lab provides you with the relevant Cisco hardware to gain hands on skills in Cisco routing and Switching technologies. By completing the lab tasks, you will improve your practical skills in Maintenance tools, Switch / Routing / OSPF / BGP & Security Troubleshooting, managing router performance, IP Services, IP Communications configuration and IPv6 Addressing and OSPF configuration.

These same tasks will help you understand the objectives and competencies required by the Cisco Certified Network Professional TSHOOT exam.

- Maintenance and troubleshooting tools
- Basic Switch troubleshooting
- Advanced Switch troubleshooting
- Troubleshooting routing protocols
- OSPF route redistribution and troubleshooting
- BGP troubleshooting
- Troubleshooting router performance
- Security configuration and troubleshooting
- IP Services troubleshooting
- IP Communications configuration
- IPv6 Addressing and OSPF configuration
- Advanced services troubleshooting

**Time:** 12 Hours

**Lab Name:** Implementing Cisco IP Routing (ROUTE)
**Lab Number:** 642-902

**Description:**
The 642-902 -Lab provides you with the relevant Cisco hardware to gain hands on skills in Cisco routing and Switching technologies. By completing the lab tasks, you will improve your practical skills in

These same tasks will help you understand the objectives and competencies required by the Cisco Certified Network Professional ROUTE exam.

- Configuring EIGRP
- EIGRP Route Filtering and Summarization
- Configuring OSPF areas virtual links and authentication
- OSPF Route Filtering and Summarization
- Route redistribution
- Policy based routing and IP SLA
- BGP
- IPv6
- IPv6 Tunnels

**Time:** 12 Hours

---

**Lab Name:** CompTIA A + Support Skills  
**Lab Number:** 22-802  
**Description:**

The CompTIA A + -Lab will provide you with the necessary platform to gain hands on skills in Microsoft desktop operating systems. By completing the lab tasks, you will improve your practical skills in system administration, user account management, disk management, file management, application management, device management, system management utilities, Windows maintenance tasks and many more using Microsoft Windows Server, Microsoft Windows 7 and Microsoft Windows XP operating systems.

These same tasks will help you understand the objectives and competencies required by the CompTIA A + Support Skills (220-802) certification exam.

- Windows 7  
- System Administration  
- User Account Management  
- Disk Management  
- File Management  
- Application Management  
- Device Management  
- System Management Utilities  
- Windows Maintenance Tasks  
- Installing and Configuring Windows XP  
- Installing Windows Vista  
- Boot troubleshooting  
- Automated System Recovery  
- Event Viewer  
- Anti-Virus Software  
- Account and Password Policies  
- Network Adapter Properties  
- Windows Networking  
- Remote Desktop  
- Testing Network Connectivity

**Time:** 20 Hours

---

**Lab Name:** CompTIA A+ Core 2  
**Lab Number:** 220-1002  
**Description:**

The CompTIA A+ Core 2 Lab will provide you with the necessary platform to gain hands on skills in fundamental computer technologies.

The CompTIA A+ (220-1002) is an entry-level certificate aimed at IT professionals or those seeking to enter the industry. This Lab focuses on the practical aspects of the CompTIA A+ (220-1002) exam objectives. It is therefore advised to refer to your own course materials to gain a deeper understanding of any theoretical aspects of the exam objectives.

By completing the lab tasks, you will improve your practical skills in supporting, installing, configuring and maintaining Operating Systems, maintaining Microsoft Windows and troubleshooting Microsoft
Windows and networks, managing users, workstations and shared resources, security and implementing operational procedures. These same tasks will help you understand the objectives and competencies required by the CompTIA A+ Core 2 (220-1002) certification exam.

- Know the Interface Differences
- Use Search
- Remove a System from Domain
- Use Media Center
- Configure BranchCache
- Configure Encrypting File System (EFS)
- Change Interface Settings in PLABWIN10
- Know the Key Differences between 32-bit and 64-bit Operating Systems
- Verify a 64-bit Operating System
- Select a Workstation Operating System as per the Need
- Learn about Cell Phone Operating Systems
- Know the Vendor-specific Limitations of Operating Systems
- Know about the Same Vendor Compatibility and Different Vendor Compatibility
- Set up a Boot Device
- Perform a Clean Install
- Create a Recovery partition
- Prepare for an Unattended Installation
- Create a Dynamic Partition
- Create a Primary Partition
- Create an Extended and Logical Partition
- Convert to MBR or GPT Disk
- Create FAT32 and NTFS File Systems
- Configure the Network File System (NFS)
- View the Swap Partition on CentOS
- View the Swap File in Windows 10
- Update a Device Driver
- Configure time/date/region/language settings
- Perform Windows Refresh
- Prepare a Boot Drive
- Know about prerequisites/hardware compatibility
- Know about application compatibility
- Use the following commands:
  - Navigation commands
  - Ipconfig
  - Ping
  - Tracert
  - Netstat
  - Nslookup
  - Shutdown
  - Dism
  - SFC
  - Chkdsk
  - Diskpart
  - Taskkill
  - Gpupdate
  - Gpresult
  - Format
  - Copy
  - Xcopy
  - Robocopy
  - Net Use
  - Net User
  - Commands Available with the Standard vs. Administrative Privileges
  - Access Computer Management Tools
  - Configure Local Security Policy
  - Create a Task on the Task Scheduler
  - Explore Print Management Properties
  - Configure Windows Memory Diagnostics
  - Explore Component Services
  - Add a Data Source to a Listed Driver
  - Access the Event Viewer Logs
  - Specify the Startup Type for Computer
  - Set the Timeout Period on the Boot Tab
  - Disable a Service on the Services Tab
  - Enable Microsoft OneDrive as a Startup Service
  - End a Task on the Processes Tab
  - Explore the Performance Tab
  - Disconnect a User on the Users Tab
  - Initialize a Disk
  - Partition a Dynamic Disk
  - Explore Disk Management Operations
  - Re-initialize a Disk
  - Manage Storage Spaces
• Explore Registry Editor
• Use the Services Console
• Use the Microsoft Terminal Services Client (MSTSC)
• Use Notepad
• Use File Explorer
• Use MSinfo32
• Use the Microsoft Management Console (MMC)
• Use Dxdiag
• Use the Defragment and Optimize Drives Utility
• Use Windows Update
• Manage Connections
• Configure Settings on the Security Tab
• Configure Settings on General Tab
• Configure Settings on Privacy Tab
• Configure Settings on Programs Tab
• Configure Settings on Advanced Tab
• Configure a Local User Account
• Configure User Account Control Settings
• Configure Remote Connectivity Settings
• Configure Performance Settings
• Configure System Protection Settings
• Work with the General tab
• Work with the View Tab
• Work with the Search Tab
• Verify the Settings Configured in Folder Options
• Verify that network connection is enabled
• Create a Simple Windows Firewall Rule
• Test the Effectiveness of the Firewall Rule
• Reconfigure the Firewall Rule Created
• Manage Applications Using Programs and Features
• Customize an Existing Power Plan
• Create a Power Plan
• Demonstrate the working of HomeGroup
• Work with Troubleshooting Options
• Use the Network and Sharing Center
• Use Device Manager
• Verify the Drive Space and RAM Requirements
• Check Application Compatibility

• Perform a Network-based Installation
• Disable Auto Login
• Work with Elevated Privileges
• Execute basic Linux commands
• Follow the best s
• Use the backup and recovery tools
• Create a Shared Folder
• Create a GPO to Redirect the Documents Folder
• Test Folder Redirection
• Assign a Home Folder to a Domain User
• Assign a Home Folder to a Local User
• Test the Home Folder
• Configure Single-factor Authentication
• Learn About Multifactor Authentication
• Configure RADIUS-based Authentication
• Learn About TACACS
• Change the Default Password
• Configure Static IP Address on the Wireless Router
• Configure Web Utility Access
• Perform MAC Address Filtering
• Using the Recovery Console
• Use Backup and Restore (Windows 7) in Windows 10
• Educate the End User
• Learn about Malware
• Identify Different Types of Social Engineering
• Learn about the Denial of service attack
• Learn about the Distributed Denial-of-Service Attack
• Learn about Zero-day
• Learn about Man-in-the-middle Attack
• Learn about the Brute Force Attack
• Learn about the Dictionary Attack
• Learn about the Rainbow Table
• Learn About the Spoofing Attack
• Learn About Non–compliant Systems
• Learn about Zombie Systems
• Create a Sample Folder
• View Default Share Permissions on the New Folder
• Configure Share Permissions
• Configure Advanced Share Permissions
• Assign Remote Access Permissions
• Determine Effective Permissions
• Exploring a Shared folder and its Permissions
• Disable Auto Login
• Assign Remote Access Permissions
• Invoke Run As a feature
• Invoke Run As using the shortcut menu
• Create a Program Shortcut to use with Run as Feature
• Examine the Workings of UAC
• Change UAC Setting via Local Security Policy
• Test User Account Control Prompt
• Create a User Account
• Configure User Account Properties
• Configure a Password Policy
• Configure a Password Protected Screensaver
• Manage Guest and Admin Accounts via Group Policy
• Perform Low-Level vs. High-Level Format
• Perform Data Wipe
• Troubleshoot operating system issues
• Troubleshoot application issues
• Troubleshoot network issues
• Troubleshoot printing issues
• Troubleshoot device drivers’ issues
• Troubleshoot PC Security Issues
• Use Windows Defender
• Use an online anti-malware scanner
• Explore Internet Explorer browser security features
• Install an Antispyware

Run SUPERAntiSpyware
Implement Basic Change Management Best s
Perform Image-Level Backup
Use Cloud Storage for Backup
Perform an Online Account Recovery
Know about UPS
Know about Surge Protectors
Deal with Difficult Customers or Situations
Read Environment Variables
Set Environment Variables
Script with decision-making statements
Use loop statements in a script
Create a Windows Batch File
Create a PowerShell Script
Create and Secure a Remote Desktop Connection
Disable Public Network in PLABWIN10
Use Windows PowerShell to Manage Remote Computers
Perform Basic Configuration for the OpenSSH Server
Install PuTTY
Connect with the OpenSSH
Use Documentation and Licenses Best s
Use Proper Communication Techniques and Professionalism
Enable System Protection
Create a Restore Point
Perform a System Restore
Enable BitLocker without TPM Support

Lab Name: A + Essentials and Practical Application
Lab Number: A-Plus
Description:
The A + Essentials and Practical Application -Lab will provide you with the necessary platform to gain hands on skills in Microsoft desktop operating systems. By completing the lab tasks, you will improve your practical skills in configuring, maintaining and troubleshooting Microsoft Windows Server 2008, Microsoft Windows 7 and Microsoft Windows XP operating systems.

These same tasks will help you understand the objectives and competencies required by the CompTIA A+ Practical Application (220-701) and CompTIA A + Essentials (220-702) certification exams.
• Command Line Utilities
• Directory Structures
• System Utilities

Time: 24 hours 50 minutes
• System Recovery
• Windows Troubleshooting Diagnostics
• Networking
• Troubleshooting repair and maintenance
• Security
• Disk management

Time: 12 Hours

Lab Name: CompTIA Advanced Security Practitioner (CASP)
Lab Number: CAS-003
Description:
The CompTIA CASP+ -Lab will provide you with the necessary platform to gain hands-on skills in advanced IT security.

By completing the lab tasks, you will improve your practical skills in enterprise security, risk management and incident response, research, analysis and assessment, integration of computing, communications and business disciplines and technical integration of enterprise components. These same tasks will help you understand the objectives and competencies required by the CASP+ (CAS-003) certification exam.

Time:

Lab Name: CSA+ (or CySA+) CompTIA Cybersecurity Analyst +
Lab Number: CS0-001
Description:
The CompTIA Cybersecurity Analyst + Lab will provide you with the necessary platform to gain hands on skills in information security. By completing the lab tasks, you will improve your practical skills in configuring and using threat detection tools, data analysis, identifying vulnerabilities, identifying threats, and risks, and securing and protecting applications and systems within an organization. These same tasks will help you understand the objectives and competencies required by the CompTIA CySA + (CS0-001) certification exam.

The CompTIA CySA + (CS0-001) is an intermediate certificate aimed at IT security analysts, vulnerability analysts, threat intelligence analysts, or IT professionals seeking to advance into the industry.

This Lab focuses on the practical aspects of the CySA + (CS0-001) exam objectives. It is therefore advised to refer to your own course materials to gain a deeper understanding of any theoretical aspects of the exam objectives. It is also recommended that you have gained the following certification before attempting the CompTIA CySA + (CS0-001) exam:

Security + (SY0-401)

No prior hands-on experience is required to use or complete this Lab; however, we have assumed that you know how to use a computer and that you are familiar with basic networking technologies and information security concepts.

• Topology Discovery Part 1
• Topology Discovery Part 2
• DNS Harvesting
• Social Engineering Reconnaissance
• Windows Command Line Tools
• Vulnerability Scanner Nessus
• Vulnerability Scanner MBSA
• Encryption and Hashing
• Passive Topology Discovery
• Packet Sniffing
• Compliance Patching
• Introduction to Syslog
• Monitoring Servers
• AlienVault Monitoring - SIEM and NetFlow
• AlienVault Monitoring - Threats Vulnerabilities and Reporting
• DVWA - Manual SQL Injection and Password Cracking
• IPv4 and IPv6 Access Lists for Traffic Filtering
• Configure Verify and Troubleshoot Port Security

Time: 25 Hours

Lab Name: CompTIA Cloud+
Lab Number: CV0-002
Description:
The Cloud+ Lab will provide you with the necessary platform to gain hands on skills in a Private cloud environment. By completing the tasks, you will increase your practical skills in administering, maintaining and managing different private cloud resources. In addition to these practical skills, you will also enhance your abilities to assess a current server infrastructure for cloud readiness and migration of physical or virtual servers to a public cloud platform.

• Install the Microsoft Assessment and Planning Toolkit
• Determine which virtual machines can be migrated to a Microsoft Azure Virtual machine by using the Microsoft Assessment and Planning Toolkit
• Interpret results from the data collected to get a better understanding of which types of virtual machines will be needed on the cloud platform
• Interpret results from the data collected to assess which machines are ready to be migrated to a Microsoft Azure Virtual machine
• Explain what OpenStack is
• Explain OpenStack usage in a cloud environment
• Explain the components of OpenStack
• Explain basic functions of each OpenStack component
• Verify the successful deployment of the OpenStack instance
• Implement IOS Features to Mitigate Threats
• Reconnaissance Attacks
• Securing the Management Plane on Cisco Routers
• Configure Verify and Troubleshoot GRE Tunnel Connectivity
• Implement SSL VPN using ASA Device Manager
• Implement the Cisco Adaptive Security Appliance
• Forensics - E-mail and Social Media Investigations
• Forensics – Understanding the Digital Forensics Profession and Investigations
• Create a security group for an instance and add a required rule to it
• Backup and restore the /etc/openstackdeploy/ directory
• Create a partition for the OpenStack instance
• Create a Flavor in the OpenStack instance
• Create an image for the OpenStack instance
• Create an internal network for the OpenStack instance
• Create a Security Group for an OpenStack instance
• Create Keypairs for an OpenStack instance
• Create an Instance in OpenStack
• Soft reboot an instance
• Hard reboot an instance
• Shut off an instance
• Create a snapshot of an instance
• Create a new instance in an OpenStack environment
• Verify the resource utilization in an OpenStack environment
• Verify the status of essential services in an OpenStack environment
• Create flavors in an OpenStack instance
• Create an image for an OpenStack instance
• Create an Internal Network for the flavors in the OpenStack instance
• Create a partition for an instance on OpenStack
• Create flavors in an OpenStack Instance
• Create an image in an OpenStack Instance
• Create an internal network in an OpenStack Instance
• Create a security group an OpenStack Instance

Time: 5 hours 50 minutes

Lab Name: CompTIA IT Fundamentals+
Lab Number: FC0-U61
Description:
The CompTIA IT Fundamentals (FC0-U61) exam focuses on the essential IT skills and knowledge needed to perform tasks commonly performed by IT professionals.

By completing the lab tasks, you will improve your practical skills such as installing software, establishing basic network connectivity, gain knowledge around security risks and troubleshooting.

These same tasks will help you understand the objectives and competencies required for CompTIA IT Fundamentals (FC0-U61) certification exams.

CompTIA IT Fundamentals (FC0-U61) is an entry-level certificate aimed at those seeking to enter the IT industry. This Lab focuses on the practical aspects of the CompTIA IT Fundamentals (FC0-U61) exam objectives. It is therefore advised to refer to your own course materials to gain a deeper understanding of any theoretical aspects of the exam objectives.

No prior hands-on experience is required to use or complete this Lab; however, we have assumed that you are familiar with basic networking concepts and technologies.

- Manage Operating System Tools
- Installing Windows
- Run Linux from a Live CD
- Configure Mobile Devices
- Manage File System Security
- Configure Network-based Anti-Malware
- Manage Operating System Updates

- Password Policies
- Multifactor Authentication and Run As
- Manage Backup and Restore
- Manage User Authentication with RADIUS
- Working with Basic HTML Tags
- Fundamentals of Software Programming

176

Document Date: May 15, 2020: MAS Solicitation #47QSMD20R0001
- Working with Primitive Data Types in JavaScript
- Working with Primitive Data Types in Python
- Converting Data Types in Python
- Core Database Concepts
- Data Storage
- Modify Data
- Administering Databases
- Social Engineering Reconnaissance
- Install Productivity Software
- Working with Business Software - Desktop Publishing and PDF Creator
- Manage Application Delivery Methods

- Troubleshoot Network Connectivity Issues
- Troubleshoot Windows Operating System Errors
- Manage Web Browser Settings Part 1
- Manage Web Browser Settings Part 2
- Managing Units of Measure - Disks, Network Throughput and Processor
- Implement Device Security with Anti-Malware Apps
- Implement Device Security with Host-Based Firewall and Password Policy
- Implement Device Security with Signed Software, Trusted Sites and Application Control

**Time:** 25 hours

**Lab Name:** Linux + Support Skills

**Lab Number:** LX0-102

**Description:**
The CompTIA Cloud+ (CV0-002) tasks will help you understand the objectives required by the CompTIA CV0-002 certification exam.
- System Architecture
- Linux installation and package management
- GNU and Unix Commands
- Devices Linux File Systems File System Hierarchy Standard
- Administrative Tasks
- Essential System Services
- Networking Fundamentals
- Editing Files in Linux

**Time:** 10 Hours

**Lab Name:** CompTIA Linux +

**Lab Number:** LX0-103

**Description:**
The Linux + LX0-103 Lab will provide you with the necessary platform to gain hands on skills in the Linux operating system. By completing the lab tasks, you will improve your practical skills in configuring the system architecture, installation and package management, devices and filesystems, filesystem hierarchy standard and using GNU and Unix commands.

These same tasks will help you understand the objectives and competencies required by the CompTIA Linux + LX0-103 certification exam.
- Determine and configure hardware settings
- Boot the System
- Change Runlevels and Shutdown or Reboot System
- Design hard disk layout

- Manage shared libraries
- Use RPM and YUM package management
- Work on the command line
- Process text streams using filters
- Perform Basic File Management
- Use Streams Pipes and Redirects
- Create, Monitor and Kill Processes
- Modify Process Execution Priorities
- Search Text Files using Regular Expressions
- Perform Basic File Editing Operations Using vi
- Create partitions and filesystems
- Maintain the integrity of filesystems
- Control mounting and unmounting of filesystems

**Time:** 23 Hours

**Lab Name:** CompTIA Linux +

**Lab Number:** LX0-104

**Description:**
The Linux + LX0-104 -Lab will provide you with the necessary platform to gain hands on skills in the Linux operating system. By completing the lab tasks, you will improve your practical skills in shells, scripting and data management, user interfaces and desktops, essential system services, networking fundamentals, security, plus other administrative tasks.

These same tasks will help you understand the objectives and competencies required by the CompTIA Linux + LX0-104 certification exam.

- Customize and use the shell environment
- Customize or write simple scripts
- SQL data management
- Accessibility
- Manage user and group accounts and related system files
- Automate system administration tasks by scheduling jobs
- Localization and internationalization
- Maintain system time
- System logging

**Time:** 20 Hours

**Lab Name:** CompTIA Linux+

**Lab Number:** XK0-004

**Description:**
The CompTIA Linux+ Lab will provide you with the necessary platform to gain hands on skills in Linux operating systems. By completing the lab tasks, you will improve your practical skills in configuring, monitoring and supporting servers running the Linux OS, applying/acquiring the appropriate permissions and ownership, summarizing best s, analyze and troubleshoot issues within Linux and deploying and executing scripts.

- Mail Transfer Agent (MTA) basics
- Manage printers and printing
- Internet Protocols and Basic Network Configuration
- Basic network troubleshooting
- Configure client-side DNS
- Perform security administration tasks
- Setup host security
- Securing data with encryption
• These same tasks will help you understand the objectives and competencies required by the CompTIA Linux+ (XK0-004) certification exam.
• Log into a Linux System
• Ensure the /boot partition conforms to the hardware architecture
• Manage MBR partition tables
• Manage GPT partition tables
• Create various filesystems
• View filesystems (lsblk)
• View the content of a block device (blkid)
• Use disk partitioning tools (fdisk, parted)
• Monitor Free Disk Space and Inodes using various commands and utilities
• Check Linux Kernel Version
• Work with Kernel and Module Files
• Differentiate between absolute and relative paths
• Use the if...else statement
• Use the while loop
• Use the until loop
• Use the for loop
• Manually mount and unmount filesystems
• Configure filesystem mounting on bootup
• Configure user mountable removable filesystems
• Use various methods to view hard drive details
• Use various methods to check and repair filesystems
• Manage Packages using YUM
• Obtain information on packages using YUM
• List the contents of a package
• Manage yum configuration options
• Browse RPM files
• Extract files from an RPM package
• Manage Debian binary packages
• Find packages containing specific files or libraries
• Obtain package information
• Configure Network on CentOS
• Install Nginx
• Create a Yum Repository
• Add, modify, and remove users and groups
• Access User/group password info
• Create and manage special purpose and limited accounts
• Use the whoami command
• Use the who command
• Use the w command
• Use the last command
• Set up a disk quota for a filesystem
• View user quota reports
• Understand the role of various bash related files
• Write a simple bash script
• Use commenting
• Use parameters
• Capture user inputs in scripts
• Shadow passwords
• Turn off network services not in use
• Role of TCP wrappers
• Create a document using vi
• Navigate a document using vi
• Manage a file using vi
• Search for specific text in a file
• Search for specific criteria through a file content or a filesystem
• Redirect Output
• Redirect Input
• Discard the Output
• Use the tee Command
• Configure network settings
• Install Apache Web Server
• Manage Apache Web Server
• Configure firewall to allow Apache traffic
• Test Apache Web Server traffic
• Perform basic file management
• Use wildcards for advanced file operations
• Use wildcards to manipulate data in a file
• Use the find command
• Use the tar and cpio commands
• Manage hard and/or symbolic links
• Use links to support system administrative tasks
• Locations of files under the FHS
- Find files and commands on a Linux system
- Install Apache2
- Use systemctl to manage services
- Use daemon-reload
- Use the update-rc.d utility
- Configure hostnames using hostnamectl
- Configure hostnames using nmcli
- Configure a runlevel
- Switch among runlevels
- Shutdown and reboot the system from the command line
- Alert users before switching runlevels or other major system events
- Understand terms and utilities
- Set the system date and time
- Set the hardware clock
- Configure the time zone
- Basic NTP configuration
- Run the ntpq command
- Configure a DNS server
- Configure client DNS
- Query remote DNS servers
- Configure DNS servers
- Modify the order in which name resolution is done
- Configure the syslog daemon
- Configuration of logrotate
- Configure Sendmail
- E-mail forwarding
- Access and create e-mails
- Manage cron and at jobs
- Configure user access to cron and at services
- Configure anacron
- Redirect Output
- Redirect Input
- Discard the Output
- Use the tee Command
- Perform basic CUPS configuration (for local and remote printers)
- Manage user print queues
- Troubleshoot general printing problems
- Configure Typing Assist (AccessX)
- Configure Various Accessibility Settings
- Manage access permissions
- Use various access modes to maintain security
- Change the umask of a file
- Manage file access to group members
- Find files with the suid/sgid bit set
- Manage user passwords and password-aging information
- List the users logged into the system
- Use the su command
- Use the sudo command
- Manage shell resources
- Discover open ports on a system
- Implement Access Control List
- Configure Network on CentOS
- View Current Status of SELinux
- Change the SELinux Mode
- View SELinux Contexts for Processes, Domain Transitions, and Users
- Install and use the policycoreutils-gui Package
- Monitor free disk-space
- Verify the integrity of a filesystem
- Repair simple filesystem problems
- Configure Network on CentOS
- Perform PAM Configuration
- Test PAM Configuration
- Configure Network on CentOS
- Perform Basic Configuration for the OpenSSH Server
- Connect with the OpenSSH Server
- Perform Basic OpenSSH 2 client configuration and usage
- Understand the role of OpenSSH 2 server host keys
- Perform basic GnuPG management
- Enable and disable TTYs
- View the logind.conf File
- Configure Network on CentOS
- Set up SFTP to Chroot Jail only for a Specific Group
- Configure Network on Ubuntu
- Verify the Chroot Configuration
- Disable Unnecessary Services
- Disable the root Login via SSH
- Change the Default SSH Port
- Verify the Last Logged in Users
- Know the Key Locations for logging
- Configure boot menu in Ubuntu
• Check boot events in the log files
• Configure Network on CentOS
• Install UFW
• Set UFW Default Policy
• Configure Advanced UFW Rules
• Block ICMP Requests
• Reset UFW
• Configure Network on Ubuntu
• Install and Configure DenyHosts
• Use gzip
• Use bzip2
• Use xz
• Use tar with various compression tools
• Process Text Files Using Text Utility Filters
• Configure client network
• Manage network interfaces
• Debug network configuration issues
• Redirect standard input, standard output, and standard error
• Pipe the output of one command to the input of the other command
• Use the output of one command as the input to another command
• Send the output to both stdout and a file
• Use various commands to monitor a CPU
• Install and use perf
• View virtual memory statistics using vmstat
• Verify the free and use memory for both physical and swap memory
• Use the swapon and swapoff commands
• Configure the Out of Memory killer
• View processes using /proc
• Work with the process monitoring commands (ps, pstree, top)
• Know the priority of a process

• Manage the priority of a new process
• Change the priority of a running process
• Set Access Modes
• Work with Immutable Files
• Configure Network on CentOS
• Connect with CentOS Using PuTTY
• Connect to Windows from CentOS
• Use default ACL for permission inheritance
• Copy ACL
• Archive and restore ACL
• Configure Network on CentOS
• Install update manually
• Enable Automatic Security Updates
• Update a single package or package group
• Configure Network on CentOS
• Install update manually
• Enable Automatic Security Updates
• Update a single package or package group
• List the profile scripts
• Set environment variables
• Write Bash functions
• Maintain skeleton directories for new user accounts
• Set the command search path with the proper directory
• Install MySQL
• Use standard sh syntax
• Use command substitution
• Use the test command
• Configure file permissions
• Change Permissions with Numbers
• Use commands to check permissions (chmod, chown, chgrp)
• Create a self-signed certificate

Time: 63 hours, 30 minutes

Lab Name: CompTIA Network+
Lab Number: N10-007
Description:
The CompTIA Network+ Lab will provide you with the necessary platform to gain hands-on skills in networking technologies.

By completing the lab tasks, you should be able to give a clear explanation of infrastructure, networking concepts, network operations, security, networking troubleshooting and tools.
These same tasks will help you understand the objectives and competencies required by the CompTIA Network+ (N10-007) certification exam.

- VPN Technologies and Services
- Network Services and Protocols - Part 1
- Network Services and Protocols - Part 2
- Network Services and Protocols - Part 3
- Install and Configure DHCP and DNS Servers
- Configure E-Mail Client Protocols
- Understanding and Configuring switching concepts
- Routing Concepts and Protocols
- Configure Gateway Redundancy Protocols
- Introduction to Software as a Service (SaaS)
- Troubleshooting Internet Connection and DNS Settings
- Understand Common Network Vulnerabilities
- Implement a Host-based Firewall
- Install Hyper-V
- Assessing Network Vulnerabilities and Threats using MBSA
- Install and Configure Network Load Balancing
- Configure Switching Features
- Install OS Updates and Configure Security Policy
- Understand Backup and Restore
- Configure and Verify Switch Security Features
- Controlling VPN Access with RADIUS
- Detecting System Bottlenecks and Log Management
- Troubleshooting Network Connectivity with Network Utilities
- Configure IPv4 and IPv6 Addressing
- Install and Configure SNMP
- Understanding the OSI Model
- Network Management - Diagrams, symbols and Documentation

**Time:** 26 hours

---

**Lab Name:** Server +

**Lab Number:** SK0-003

**Description:**
The Server + Lab will provide you with the necessary platform to gain hands on skills in server maintenance and support. By completing the lab tasks, you will improve your practical skills in server installation & configuration, network settings, Directory services, file shares, server security, virtualization and monitoring performance.

These same tasks will help you understand the objectives and competencies required by the CompTIA Server + 2011 (SK0-003) certification exam.

- Installing an NOS
- Configuring an NOS
- Configuring Network Settings
- Configuring Directory Services
- Configuring a File Share
- Configuring Server Security
- Installing VMs
- Configuring Server Applications
- Monitoring Performance
- Backups

**Time:** 12 Hours
Lab Name: CompTIA Server +
Lab Number: SK0-004
Description:
The Server + -Lab will provide you with the necessary platform to gain hands on skills in server maintenance and support. By completing the lab tasks, you will improve your practical skills in server architecture, server administration, storage, security, networking, disaster recovery and troubleshooting.

These same tasks will help you understand the objectives and competencies required by the CompTIA Server + SK0-004 certification exam.

- Retrieving System Information
- Install and Configure Operating Systems
- Server Optimization
- Applying Operating System Updates
- Configure IPv4 and IPv6 Addressing
- Cloning and Deploying Disk Images
- Remote and Unattended Installation of Windows OS
- Network Based OS Administration
- Install Server Roles
- Introduction to Failover Clustering
- Fault Tolerance and High Availability
- Understand File Compression Formats
- Routing and Remote Access Servers
- Installing a Directory Server
- Installing a Database Server
- Installing an E-mail Server
- Configuring a File Server
- Configuring a Print Server
- Storage Technologies using iSCSI
- Introduction to IPSec
- Controlling VPN Access with RADIUS
- Plan for Storage Capacity using Disk Quota
- Configuring Software RAID
- Understanding Public Key Infrastructure
- Understanding Malware
- Understand Server Backup and Restore
- Understand Computer Virtualization
- Troubleshoot Operating Systems

Time: 30 Hours

Lab Name: CompTIA Security+
Lab Number: SY0-501
Description:
The CompTIA Security+ -Lab will provide you with the necessary platform to gain hands on skills in IT security. By completing the lab tasks, you will improve your practical skills in identifying threats, attacks and vulnerabilities, access and identity management and risk management.

These same tasks will help you understand the objectives and competencies required by the CompTIA Security+ (SY0-501) certification exam.

The CompTIA Security+ is an intermediate level certificate aimed at IT security professionals, with a minimum of 2 years of IT administration (with a focus on security and day-to-day technical information security experience). This Lab focuses on the practical aspects of the CompTIA Security + (SY0-501) exam objectives. It is therefore advised to refer to your own course materials to gain a deeper understanding of any theoretical aspects of the exam objectives.

It is also recommended that you have gained the following certification before attempting the CompTIA Security+ exam:

CompTIA Network+
No prior hands-on experience is required to use or complete this Lab; however, we have assumed that you know how to use a computer and that you are familiar with basic networking concepts and technologies.

- Firewall Rule Based Management
- Firewalls and Evasion
- NAT and OpenSSH
- Network Vulnerabilities Part 1
- Network Vulnerabilities Part 2
- Application Data - Establish Host Security
- Configuring IDS and Honeypots
- Password Cracking Tools
- Implementing DNSSEC
- Social Engineering Reconnaissance
- Encryption and Hashing
- Understanding PKI Concepts
- Backup and Recovery
- Implement Patching using WSUS
- Managing Local Storage and Virtual Hard Disks
- Implementing a Network Policy Server
- Managing Certificates
- Protocols and Services - SNMP
- Data Encryption
- Implementing Software RAID
- Introduction to Digital Forensics
- Implementing AD Federation Services
- Configuring RADIUS
- Install and Configure Network Load Balancing
- Scanning and Remediating Vulnerabilities with OpenVAS

Time: 25 Hours

Lab Name: VMware Certified Professional vSphere 5
Lab Number: VCP510
Description:
The VCP510 -Lab will provide you with the necessary platform to gain hands on skills in VSphere 5. By completing the lab tasks you will improve your practical skills in securing vCenter server and ESXi, vSphere networking, configure shared storage, VMFS / NFS datastores, deploy / administer virtual machines and vApps, establish and maintain service levels, perform basic troubleshooting and monitor a vSphere implementation and manage vCenter server alarms.

These same tasks will help you understand the objectives and competencies required by the VCP510 certification exam.

- Configure VMware ESXi
- Perform Upgrades of vCenter Server and VMware ESXi
- Secure vCenter Server and ESXi
- Configure vNetwork Standard Switches
- Configure vNetwork Distributed Switches
- Configure vSS and vDS Policies
- Create and Deploy Virtual Machines
- Create and Deploy vApps
- Manage Virtual Machine Clones and Templates
- Administer Virtual Machines and vApps
- Create and Configure VMware Clusters
- Create and Administer Resource Pools
- Backup and Restore Virtual Machines
- Patch and Update ESXi and Virtual Machines
- Monitor ESXi System Health
- Perform Basic vSphere Troubleshooting
- vCenter Server Configuration

Time: 16 Hours

Lab Name: VMware Certified Professional 5 – Data Center Virtualization
Lab Number: VCP550
Description:
The VCP5-DCV (5.5) -Lab will provide you with the necessary platform to gain hands on skills in VSphere 5.5. By completing the lab tasks you will improve your practical skills in installing and
configure vCenter server, configuring VMware ESXi, securing vCenter Server and ESXi, configuring vNetwork standard switches, configuring vNetwork distributed switches, configuring vSS/vDS policies, managing VMFS datastores, managing shared storage for vSphere, create and deploy Virtual Machines, create and deploy vApps, managing VM clones/templates, administer VM's/vApps, manage VMware clusters, implement VMware fault tolerance, manage resource pools, patch management, troubleshooting, monitoring and server alarms.

These same tasks will help you understand the objectives and competencies required by the VCP5-DCV (5.5) certification exam.

- Install and Configure vCenter Server
- Basic VMware ESXi Configuration
- Perform Upgrades of vCenter Server and VMware ESXi Components
- Secure vCenter Server and ESXi
- Configure vNetwork Standard Switches
- Configure vNetwork Distributed Switches
- Configure vSS and vDS Policies
- Create and configure VMFS Datastores
- Configure Shared Storage for vSphere
- Create and Deploy Virtual Machines
- Create and Deploy vApps
- Manage Virtual Machine Clones and Templates
- Administer Virtual Machines and vApps
- Create and Configure VMware Clusters
- Plan and Implement VMware Fault Tolerance
- Create and Administer Resource Pools
- Patch and Update ESXi and Virtual Machines
- Perform Basic Troubleshooting
- Create and Administer vCenter Server Alarms
- Monitor ESXi and vCenter Server and Virtual Machine

**Time:** 20 Hours

**Lab Name:** VMWare Certified Professional – Desktop

**Lab Number:** VCPD-510

**Description:**
The VCPD-510 -Lab will provide you with the necessary platform to gain hands on skills in VMWare View and VSphere 5.5 technologies. By completing the lab tasks, you will improve your practical skills in Installling View components, Integrate VMware View with Active Directory, View Composer, VMware View Events Database, Configure View Server Components, Integrate ThinApp into a View Environment and Manage User Configurations. You will also configure Automated Pools, Troubleshoot View Composer, Monitor and Troubleshoot Events, Install and Configure vCenter Server, Manage VMware ESXi, Configure vSphere networking, Configure Storage for vSphere, Create and Deploy Virtual Machines, Create and Configure VMware Clusters, Create and Administer Resource Pools, Migrate Virtual Machines, Perform Basic Troubleshooting for ESXi Hosts and Perform Basic vSphere Network Troubleshooting.

These same tasks will help you understand the objectives and competencies required by the VCPD-510 exam.

- Install View Server Components
- Configure a View Environment
- Manage a View Environment
- Configure Desktop Settings
- Configure and Manage View Security
- Configure Local and Kiosk Mode
- Integrate ThinApp into a View Environment
- Manage User Configurations
- Configure Full Clone Automated Pools
- Create and Configure View Desktop Pools
- Troubleshoot a View Implementation
- Install and Configure vCenter Server
- Basic VMware ESXi Configuration
- Perform Upgrades of vCenter Server and VMware ESXi Components
- Configure vNetwork Standard Switches
- Configure vNetwork Distributed Switches
- Configure vSS and vDS Policies
- Create and Configure VMFS Datastores
- Configure Shared Storage for vSphere
- Create and Deploy Virtual Machines
- Create and Deploy vApps
- Manage Virtual Machine Clones and Templates
- Administer Virtual Machines and vApps
- Create and Configure VMware Clusters
- Plan and Implement VMware Fault Tolerance
- Create and Administer Resource Pools
- Patch and Update ESXi and Virtual Machines
- Perform Basic Troubleshooting
- Create and Administer vCenter Server Alarms
- Monitor ESXi and vCenter Server and Virtual Machines

**Time:** 26 Hours

**Lab Name:** VMware Certified Professional Cloud

**Lab Number:** VCPC-550

**Description:**
The VCPC-550 Lab will provide you with the necessary platform to gain hands on skills in VMware vCloud Suite components and vSphere 5.5 technologies. By completing the lab tasks you will improve your practical skills in installing and configuring vCenter server, configuring VMware ESXi, securing vCenter Server and ESXi, configuring vNetwork standard switches, configuring vNetwork distributed switches, configuring vSS/vDS policies, managing VMFS datastores, managing shared storage for vSphere, create and deploy Virtual Machines, create and deploy vApps, managing VM clones/templates, administer VM's / vApps, manage VMware clusters, implement VMware fault tolerance, manage resource pools, patch management, troubleshooting, monitoring and server alarms. You will also configure the components in the VMWare vCloud Suite.

These same tasks will help you understand the objectives and competencies required by the VCPC550 exam.

- Install and Configure vCenter Server
- Basic VMware ESXi Configuration
- Perform Upgrades of vCenter Server and VMware ESXi Components
- Configure vNetwork Standard Switches
- Configure vNetwork Distributed Switches
- Configure vSS and vDS Policies
- Create and configure VMFS Datastores
- Configure Shared Storage for vSphere
- Create and Deploy Virtual Machines
- Create and Deploy vApps
- Manage Virtual Machine Clones and Templates
- Administer Virtual Machines and vApps
- Create and Configure VMware Clusters
- Plan and Implement VMware Fault Tolerance
- Perform Basic Troubleshooting
- Create and Administer vCenter Server Alarms
- Monitor ESXi and vCenter Server and Virtual Machines
- Configure and Administer vCenter Chargeback
- Configure and Administer vCloud Networking
- Install and Configure vCloud Director
- Administer Users, Roles and Privileges in a vCloud
- Create and Administer vCloud Catalogs
- Monitor Cloud Utilization
- Configure and Administer vCloud Organizations
- Allocate and Manage vCloud Resources

**Time:** 25 Hours

---

**Lab Name:** VMware Certified Professional 6 – Data Center Virtualization  
**Lab Number:** VCP6DC  
**Description:**  
The VCP6-DV Lab will provide you with the necessary platform to gain hands on skills in VSphere 6. By completing the lab tasks you will improve your practical skills in configuring and administering VSphere 6 security, advanced networking, advanced storage, resources, upgrading a VSphere deployment to VSphere 6, backups and recovering a VSphere deployment, troubleshooting, deploying and consolidating a VSphere Data Center, configuring and administering VSphere availability solutions, administering and managing VSphere Virtual Machines.  

These same tasks will help you understand the objectives and competencies required by the VCP6-DCV certification exam.

- Manage Role-based Access Control
- Manage vSphere Security
- Manage a Cluster
- Manage Single Sign-On Users
- Configure and Administer Advanced VSphere 6 Networking
- Configure Distributed Switch Policies
- Configure dvPortGroups
- Upgrade a VSphere Deployment to 6.x
- Administer and Manage VSphere 6.x Resources
- Troubleshoot HA and DRS Configurations and Fault Tolerance
- Troubleshoot a VSphere Network, Storage, and Upgrade and Performance Issues
- Deploy ESXi Hosts Using Autodeploy
- Manage Host Profiles
- Consolidate Physical Workloads using VMware Converter
- Configure and Administer VSphere Availability Solutions
- Administer and Manage VSphere Virtual Machines
- Perform Storage Upgrades and Configurations

**Time:** 17 Hours
Lab Name: Ethical Hacker  
Lab Number: CUS-EH  
Description:  
The Ethical Hacker - Lab will provide you with the necessary platform to gain hands on skills understanding different hacking tools and techniques. You will cover areas like Foot printing & Reconnaissance, Scanning Networks, Device & Device Enumeration, Working with Keyloggers, System Hacking Concept and Port & Process Monitoring. As well as Sniffers and Denial of Service attacks.

These same tasks will help you understand the objectives and competencies required for Ethical Hacking certification exams.

- Foot printing and Reconnaissance
- Scanning Networks Part 1
- Scanning Networks Part 2
- Enumeration
- Keyloggers
- System Hacking Part 1
- System Hacking Part 2
- Port and Process Monitoring
- Viruses and Worms
- Sniffers
- Social Engineering
- Denial of Service
- Hacking Web Applications
- Network Vulnerabilities
- Vulnerability Scanning
- PKI Concepts
- Mitigation and Deterrent Techniques
- Transport Encryption

Time: 20 Hours

Lab Name: Oracle Database 12c - SQL Fundamentals  
Lab Number: 1Z0-061  
Description:  
The Oracle-1Z0-061 Lab will provide you with the necessary platform to gain hands on skills in Oracle. By completing the lab tasks you will improve your practical skills in Retrieving Data, Restricting and Sorting Data, Using Single-Row Functions to Customize Output, Using Conversion Functions and Conditional Expressions, Reporting Aggregated Data Using the Group Functions, Displaying Data from Multiple Tables Using Joins, Using Subqueries to Solve Queries and Managing Tables using DML Statements.

These same tasks will help you understand the objectives and competencies required by the Oracle 1Z0-061 certification exam.

- Features of Oracle Database 12c
- Retrieving Data Using SQL Statements
- Restricting and Sorting Data
- Using Single Row Functions to Customize Output
- Conversion Functions and Conditional Expressions
- Reporting Aggregated Data Using Group Function
- Displaying Data from Multiple Tables using JOIN
• Using Subqueries
• Managing Tables using DML Statements

**Time:** 10 Hours

**Lab Name:** Oracle Database 12c - Installation and Administration  
**Lab Number:** 1Z0-062  
**Description:**  
The Oracle-1Z0-062 Lab will provide you with the necessary platform to gain hands on skills in Oracle. By completing the lab tasks you will improve your practical skills in Database Management Tools, Database instances, Configuring Oracle Network Environments, Managing Database Storage Structures, Administering User Security, Managing Space, Undo Data and Data Concurrency, implementing Database Audits, Performing Database Maintenance, Configuring Backup and Recovery, Installing Oracle and Creating and Upgrading Oracle Databases.

These same tasks will help you understand the objectives and competencies required by the Oracle 1Z0-062 certification exam.

• Oracle Database Instances  
• Configuring an Oracle Network Environment  
• Managing Database Storage Structures  
• Administering User Security  
• Managing Space  
• Managing Data Concurrency and Undo  
• Implementing Oracle Database Auditing  
• Using Backup and Recovery Concepts  
• Performing Database Recovery  
• Moving Data  
• Managing Database Performance  
• Managing Resource Using Database Resource Manager  
• Automating Tasks Using Oracle Scheduler  
• Installing Oracle Grid Infrastructure and Using Oracle Restart  
• Installing Oracle 12c  
• Creating an Oracle Database Using DBCA  
• Upgrading to Oracle 12c  
• Migrating Data Using Oracle Data Pump

**Time:** 18 Hours

**Lab Name:** IC3 Digital Literacy Certification - Global Standard 5  
**Lab Number:** IC3-GS5  
**Description:**
The IC3-GS5 Lab will provide you with the necessary platform to gain hands on skills in computing fundamentals.

By completing the lab tasks, you will improve your practical skills in computing fundamentals, such as computer software architecture, backup and restore, file sharing, cloud computing, security, using web browsers and exploring the internet. You will also become familiar with applications used for document creation; word processing, spreadsheets, and presentations.
These same tasks will help you understand the objectives and competencies required by the IC3-GS5 certification exam.

- Configuring Mobile Devices
- Installing Windows 1 and Fedora Linux Workstation
- Applying Patches and Updates for Windows Desktops
- File and Print Sharing in Homegroup
- Understand Utility Software - Anti-Malware, Software Firewalls, Maintenance and Compression Tools
- Understand Phishing
- Explain Backup Concepts
- Using Collaboration Software - Cloud Storage and Online Apps
- Basic Functions of an Operating System
- Folder and File Permissions
- Using Productivity Software
- Support Windows Store and Cloud Apps
- Managing Web Browsers
- Calendaring and Scheduling Overview

**Time:** 14 Hours

**Lab Name:** Labs Introduction to Wireshark

**Lab Number:** PLAB-WS01

**Description:**
The Introduction to Wireshark Lab will provide you with the necessary platform to gain hands on skills in using Wireshark.

By completing the lab tasks, you will improve your practical skills in installing and customizing Wireshark and using Wireshark to capture and analyze traffic. You will also become familiar with the common ports and protocols used in networking.

- Understand Common Ports and Protocols
- Installing Wireshark
- Wireshark Functionality
- Customizing Wireshark
- Working with Captured Traffic
- Analyzing Captured Traffic
- Analyzing Protocols
- Packet Sniffing with Wireshark

**Time:** 8 Hours

**Lab Name:** Certified Information Systems Security Professional

**Lab Number:** ISC2-CISSP

**Description:**
The CISSP Lab will provide you with the necessary platform to gain hands on skills in security.


These same tasks will help you understand the objectives and competencies required by the ISC2 CISSP certification exam.
• Introduction to CISSP
• Security and Risk Management
• Encryption and Hashing
• Configuration Items and Baselines
• Implement OpenPGP
• Two factor Authentication with SSH
• Implement SSL VPN using ASA Device Manager
• Configure and Verify IPv4 and IPv6 Access Lists for Traffic Filtering
• Configuring IPTables
• Windows Command Line Tools
• Administering and Deploying Endpoint Protection
• Bitlocker on Portable Media
• Managing Remote Desktop
• Manage Role-based Security
• Configuration Scanner MBSA
• Compliance Patching
• Passive Topology Discovery
• Scanning and Remediating Vulnerabilities with OpenVAS
• Installing Kali
• Implement Backup and Recovery
• Installation and Verification of Snort
• Configuring and Securing IIS
• Upgrading and Securing SSH Connection
• DVWA - Manual SQL Injection and Password Cracking

Time: 25 Hours

Lab Name: Labs Ethical Hacker
Lab Number: PLAB-EH02
Description:
The Ethical Hacker Lab will provide you with the necessary platform to gain hands on skills in security. By completing the lab tasks, you will improve your practical skills in:

• Foot printing & Reconnaissance
• Scanning Networks
• Device & Device Enumeration
• Social Engineering
• System Hacking Concepts and Port & Process Monitoring.
• Performing a Check for Live Systems
• Performing a Check for Open Ports
• Implementing Scanning Techniques
• OS Fingerprinting
• Banner Grabbing
• Performing Malware Attacks
• Implementing Application-level Session Hijacking
• Hacking Web Applications
• Mapping Networks
• Planting a Backdoor
• Working with IPSec
• Using Enumeration Tools
• Implementing Network-level Session Hijacking
• Performing Offline Attacks
• Conduct Social Engineering Attack
• Trojan Protection
- Social Engineering Reconnaissance
- Packet Sniffing
- Vulnerability Scanner MBSA
- Encryption and Hashing
- Analyzing Captured Traffic
- Configuring IDS and Honeypots
- Resetting Windows Passwords
- Cracking Kerberos
**Time:** 24 Hours

**Lab Name:** Labs Orientation: Module Zero – Basics

**Lab Number:** PLAB-ZERO

**Description:**
The Introduction to Programming Using HTML and CSS Lab will provide you with the necessary platform to gain hands on skills in HTML and CSS. By completing the lab tasks, you will improve your practical skills in HTML fundamentals, CSS fundamentals, structuring documents using HTML, presenting multimedia using HTML and styling web pages using CSS.

These same tasks will help you understand the objectives and competencies required by the 98-383 Introduction to Programming Using HTML and CSS certification exam. Welcome to the Labs Orientation Lab. In this module, you will be provided with the instructions and devices needed to develop your hands-on skills.

The purpose of this module is to introduce you to the Labs platform.

The layout of this content is similar in our labs. Each module consists of an introduction, lab topology, exercises, tasks, steps and a review section.

- Footprinting and Reconnaissance
- Scanning Networks Part 1
- Scanning Networks Part 2
- Enumeration
- Keyloggers
- System Hacking Part 1
- System Hacking Part 2
- Port and Process Monitoring
- Viruses and Worms
- Sniffers
- Social Engineering
- Denial of Service
- Hacking Web Applications
- Network Vulnerabilities
- Vulnerability Scanning
- PKI Concepts
- Mitigation and Deterrent Techniques
- Transport Encryption

**Time:** 30 Minutes