

CATALOG FOR BASE CONTRACT
March 2006- March 2011



**GSA SCHEDULE 871
PROFESSIONAL ENGINEERING SERVICES (PES)**

Contract No. GS-23F-0126S

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CORPORATE EXPERIENCE

Mainstream Engineering Corporation has been providing Professional Engineering Services (PES) to the Federal Government and commercial organizations since 1986. At the time of this proposal, Mainstream's full-time technical staff includes chemical, electrical, and mechanical engineers and a technical support staff consisting of scientists, machinists, and technicians. Education includes Doctor of Philosophy degrees, Master of Science degrees, and Bachelor of Science degrees. Our engineers/scientists have accumulated over 100 years of experience working in an engineering capacity. Two engineers are Board-certified as Professional Engineers by the State of Florida.

Mainstream's strengths lie within specification, design, fabrication, integration, testing, evaluation, and logistical support of chemical, electrical, and mechanical systems. We specialize in multi-disciplinary engineering of advanced thermal systems, energy conversion systems, turbomachinery, power generation, electro-mechanical systems, electro-chemical systems, dynamic systems, controls, sorption systems, alternative working fluids, nano-sciences, and sensors. Mainstream has developed, tested, and supported systems for military, commercial, and industrial applications in ground, airborne, sea, and space environments. We have tested and evaluated individual components and complete systems in both controlled laboratory environments and uncontrolled field environments.

Our primary customer for Professional Engineering Services is the Federal Government, including but not limited to the Department of Defense, NASA, Department of Energy, and Department of Commerce. In 2005 our total revenue exceeded \$3.8M. PES generates approximately 50% of Mainstream's revenue. The remaining 50% of this revenue is generated from our commercial product line, with all products being developed by our engineers.

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SPECIAL ITEM NUMBERS (SIN)

Contracts under the PES schedule provide engineering solutions through six Special Item Numbers (SINs). These SINs comprise the distinct phases of an engineering project. Mainstream's contract includes the following SINs.

871-2 Concept Development and Requirements Analysis

Services required under this SIN involve abstract or concept study and analysis, requirements definition, preliminary planning, and the evaluation of alternative technical approaches and associated costs for the development or enhancement of high-level general performance specifications of a system, project, mission, or activity. Typical associated tasks include but are not limited to requirements analysis, cost/cost-performance trade-off analysis, feasibility analysis, regulatory compliance support, technology conceptual designs, training, privatization, and outsourcing.

871-3 System Design, Engineering and Integration

Services required under this SIN involve the translation of a system (or subsystem, program, project, activity) concept into a preliminary and detailed design (engineering plans and specifications), performing risk identification/analysis/mitigation and traceability, and then integrating the various components to produce a working prototype or model of the system. Typical associated tasks include but are not limited to computer-aided design, design studies and analysis, high-level detailed specification preparation, configuration management and document control, fabrication, assembly and simulation, modeling, training, privatization, and outsourcing.

871-4 Test and Evaluation

Services required under this SIN involve the application of various techniques demonstrating that a prototype system (subsystem, program, project or activity) performs in accordance with the objectives outlined in the original design. Typical associated tasks include but are not limited to testing of a prototype and first article(s) testing, environmental testing, independent verification and validation, reverse engineering, simulation and modeling (to test the feasibility of a concept), system safety, quality assurance, physical testing of the product or system, training, privatization, and outsourcing.

871-5 Integrated Logistics Support

Services required under this SIN involve the analysis, planning and detailed design of all engineering-specific logistics support including material goods, personnel, and operational maintenance and repair of systems throughout their life cycles. Typical associated tasks include but are not limited to ergonomic/human performance analysis, feasibility analysis, logistics planning, requirements determination, policy standards/procedures development, long-term reliability and maintainability, training, privatization, and outsourcing.

PROFESSIONAL ENGINEERING DISCIPLINES (PED)

Mainstream provides professional engineering services in three professional engineering disciplines (PED). Definitions for the PEDs are provided below.

Chemical Engineering (CE):

Chemical engineering includes planning, development, evaluation, and operation of chemical, biochemical, or physical plants and processes; changes in composition, energy content, state of aggregation of materials. Forces that act on matter and relationships are examined and new/conventional chemical materials, products and processes are produced and/or manufactured. Chemical engineering also includes but is not limited to planning, evaluating, or operating chemical plants and petroleum refineries, pollution control systems, biochemical processes, plastics, pharmaceuticals, and fibers; analysis of chemical reactions that take place in mixtures; and determination of methodologies for the systematic design, control, and analysis of processes, evaluating economics, and safety.

Specialties within the scope of work for chemical engineering include:

- Advanced Energy Conversion
- Biotechnology
- Chemicals
- Chemical Processes
- Electronic Components and Chemicals
- Environmental Control and Clean up
- Emissions
- Fluids Engineering
- Heat Transfer
- New/Conventional Chemical Materials
- Petrochemicals
- Pharmaceuticals
- Reactions
- Refrigerants
- Safety Engineering and Risk Analysis
- Solvents
- Thermodynamics
- Other Chemical Engineering Specialties not listed in the "Services Not Included Paragraph"

Electrical Engineering (EE):

Electrical engineering includes planning, design, development, evaluation, and operation of electrical principles, models, and processes. It includes but is not limited to the design, fabrication, measurement, and operation of electrical

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devices, equipment, and systems (e.g., signal processing, telecommunication, sensors, microwave and image processing, micro-fabrication, energy systems and control, micro and nano electronics, plasma processing, laser and photonics, satellites, missiles and guidance systems, space vehicles, fiber optics, and robotics). Specialties within the scope of work for electrical engineering include:

Aerospace and Electronic Systems
Antennas and Propagation
Circuits and Systems
Communications
Components Packaging and Manufacturing Technology
Computer*
Consumer Electronics
Control Systems
Dielectrics and Electrical Insulation
Electromagnetic Compatibility
Engineering in Medicine and Biology
Engineering Management
Geosciences and Remote Sensing
Industrial Electronics
Industry Applications
Instrumentation and Measurement
Intelligent Transportation Systems
Lasers and Electro-Optics
Magnetics
Microwave Theory and Techniques
Power Engineering
Reliability
Robotics and Automation
Solid-State Circuits
Ultrasonics, Ferroelectrics, and Frequency Control
Vehicular Technology
Other Electrical Engineering Specialties not listed in the "Services Not Included Paragraph"

Mechanical Engineering (ME):

Mechanical engineering includes planning, development, evaluation, and control of systems and components involving the production and transfer of energy with the conversion of one form of energy to another. Mechanical engineering includes but is not limited to planning and evaluation of power plants, analysis of the economical combustion of fuels, conversion of heat energy into mechanical energy, use of mechanical energy to perform useful work, analysis of structures and motion in mechanical systems, and conversion of raw materials into a final product (e.g., thermodynamics, mechanics, fluid mechanics, jets, rocket engines, internal combustion engines, steam and gas turbines, continuum mechanics,

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dynamic systems, dynamics, fluid mechanics, heat transfer, manufacturing, materials, solid mechanics, and reactors). Specialties within the scope of work for mechanical engineering include:

Advanced Energy Systems
Aerospace Engineering
Applied Mechanics
ASME Heat Transfer/K16
Design Engineering*
Dynamic Systems and Control
Electrical and Electronic Packaging
Environmental Engineering*
Fluids Engineering
Fluids Power Systems and Technology Systems
Fuels and Combustion Technologies
Heat Transfer
Internal Combustion Engine
International Gas Turbine
Management
Manufacturing Engineering*
Materials
Materials Handling Engineering*
Microchannel Flow and Heat Transfer
Noise Control and Acoustics
Non-Destructive Evaluation Engineering
Petroleum
Plant Engineering and Maintenance
Power
Pressure Vessels and Piping
Process Industries
Safety Engineering and Risk Analysis
Solar Energy
Technology and Society
Tribology
Other Mechanical Engineering Specialties not listed in the "Services Not Included Paragraph"

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LABOR RATES
5-YEAR BASE PERIOD

Labor Category	Base	Base	Base	Base	Base
	Y1	Y2	Y3	Y4	Y5
	2006	2007	2008	2009	2010
Executive Director	\$243.45	\$251.97	\$260.79	\$269.92	\$279.37
Engineering Director	\$111.79	\$115.70	\$119.75	\$123.94	\$128.28
Principal Chemical Engineer II	\$137.77	\$142.59	\$147.58	\$152.74	\$158.09
Principal Chemical Engineer I	\$124.84	\$129.21	\$133.73	\$138.41	\$143.26
Senior Mechanical Engineer III	\$102.93	\$106.53	\$110.26	\$114.12	\$118.11
Senior Mechanical Engineer II	\$92.74	\$95.98	\$99.34	\$102.82	\$106.42
Senior Mechanical Engineer I	\$84.36	\$87.31	\$90.37	\$93.53	\$96.81
Mechanical Engineer III	\$79.71	\$82.50	\$85.39	\$88.38	\$91.47
Mechanical Engineer II	\$75.06	\$77.69	\$80.41	\$83.22	\$86.14
Mechanical Engineer I	\$72.38	\$74.92	\$77.54	\$80.25	\$83.06
Junior Mechanical Engineer	\$67.55	\$69.92	\$72.37	\$74.90	\$77.52
Senior Electrical Engineer	\$89.16	\$92.28	\$95.51	\$98.86	\$102.32
Information Technologist	\$73.33	\$75.89	\$78.55	\$81.30	\$84.14
Scientist	\$67.76	\$70.13	\$72.58	\$75.13	\$77.75
Senior Machinist	\$80.73	\$83.56	\$86.48	\$89.51	\$92.64
Junior Machinist	\$40.74	\$42.16	\$43.64	\$45.17	\$46.75
Technician	\$32.67	\$33.81	\$34.99	\$36.22	\$37.49

Note: All labor rates in this pricelist are fully burdened and incorporate a 0.75% Industrial Funding Fee (IFF) IAW Solicitation FCXB-B2-990001-B dated July 11, 2005.

LABOR CATEGORIES

Note

A Masters degree may substitute for two years of experience.
A Doctorate degree may substitute for two years of experience.

Executive Director

The Executive Director must have a minimum of a Bachelor's degree in engineering. This position requires a demonstrated ability to successfully lead a major business activity and attain technical and business objectives. Through prior management experience, the executive director shall have shown the ability to successfully build a program and lead research personnel at all levels. Responsibilities include management and leadership of significant program areas in the company's technical, sales, marketing, financial, and administrative divisions; ownership for the overall quality of the technical and/or administrative work of the company; promotional activity; and financial well being of the company. The Executive Director is directly responsible for planning, organizing,

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and managing the work of the company and oversees all business operations including engineering.

Engineering Director

The Engineering Director must have a minimum of a Bachelor's degree in engineering. A Master's or Doctorate degree in engineering is preferred. A minimum of ten (10) years of relevant technical and management experience is required. This person shall have the ability to successfully build a program and lead research personnel at all levels. The Engineering Director is responsible for planning, organizing, and managing work of the engineering department. Responsibilities include technical review of all deliverables, management oversight for large projects handling the technical and business functions of the project, organization and integration of personnel from several disciplines (including subcontractors), and liaison with the client on technical and business matters related to the projects.

Principal Chemical Engineer II

A Principal Chemical Engineer level II must have a minimum of a Bachelor's degree in Chemical Engineering. A Doctorate degree in Chemical Engineering is preferred. A minimum of fifteen (15) years of relevant technical experience is required. This person shall have a demonstrated record of technical seniority and accomplishment on programs. Typically, a Principal Chemical Engineer level II will have demonstrated both task leadership and advisory capacity to senior customer officials.

Principal Chemical Engineer I

A Principal Chemical Engineer level I must have a minimum of a Bachelor's degree in Chemical Engineering. A Master's or Doctorate degree in Chemical Engineering is preferred. A minimum of ten (10) years of relevant technical experience is required. This person shall have a demonstrated record of technical seniority and accomplishment on programs. Typically, a Principal Chemical Engineer level I will have demonstrated both task leadership and advisory capacity to senior customer officials.

Senior Electrical Engineer

A Senior Electrical Engineer must have a minimum of a Bachelor's degree in Electrical Engineering. A Master's or Doctorate degree in Electrical Engineering is preferred. A minimum of five (5) years of technical experience associated with design, test and evaluation, or analysis of systems is required. This person shall have a demonstrated record of task leadership and accomplishment on programs.

Senior Mechanical Engineer III

A Senior Mechanical Engineer level III must have a minimum of a Bachelor's degree in Mechanical Engineering. A Master's or Doctorate degree in

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Mechanical Engineering is preferred. A minimum of nine (9) years of technical experience associated with design, test and evaluation, or analysis of systems is required. This person shall have a demonstrated record of task leadership and accomplishment on programs.

Senior Mechanical Engineer II

A Senior Mechanical Engineer level II must have a minimum of a Bachelor's degree in Mechanical Engineering. A Master's or Doctorate degree in Mechanical Engineering is preferred. A minimum of seven (7) years of technical experience associated with design, test and evaluation, or analysis of systems is required. This person shall have a demonstrated record of task leadership and accomplishment on programs.

Senior Mechanical Engineer I

A Senior Mechanical Engineer level I must have a minimum of a Bachelor's degree in Mechanical Engineering. A Master's or Doctorate degree in Mechanical Engineering is preferred. A minimum of five (5) years of technical experience associated with design, test and evaluation, or analysis of systems is required. This person shall have a demonstrated record of task leadership and accomplishment on programs.

Mechanical Engineer III

A Mechanical Engineer level III must have a minimum of a Bachelor's degree in Mechanical Engineering. A minimum of three (3) years of technical experience is required. This person shall be capable of performing a variety of engineering tasks, either independently or under supervision, concerned with design, test and evaluation, or analysis of systems.

Mechanical Engineer II

A Mechanical Engineer level II must have a minimum of a Bachelor's degree in Mechanical Engineering. A minimum of two (2) years of technical experience is required. This person shall be capable of performing a variety of engineering tasks, either independently or under supervision, concerned with design, test and evaluation, or analysis of systems.

Mechanical Engineer I

A Mechanical Engineer level I must have a minimum of a Bachelor's degree in Mechanical Engineering. A minimum of one (1) year of technical experience is required. This person shall be capable of performing a variety of engineering tasks, either independently or under supervision, concerned with design, test and evaluation, or analysis of systems.

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Junior Mechanical Engineer

A Junior Mechanical Engineer must have a minimum of a Bachelor's degree in Mechanical Engineering. This is an entry-level position. This person shall have demonstrated technical knowledge to function on either independent assigned tasks or as part of a technical team under senior leadership.

Information Technologist

An Information Technologist must have a minimum of a Bachelor's degree in information technology, computer science, or a related field. This is an entry-level position. This person shall have demonstrated technical knowledge to function on either independent assigned tasks or as part of a technical team under senior leadership.

Scientist

A Scientist must have a minimum of a Bachelor's degree in engineering, chemistry, biology, environmental sciences, or a related field. This person shall have demonstrated technical knowledge to function on either independent assigned tasks or as part of a technical team under senior leadership.

Senior Machinist

A Senior Machinist must have a minimum of a high school or equivalent education and fifteen (15) years of experience in a related technical field. Senior level background and experience in performing complex tasks using standard and non-standard equipment and techniques in specialized technical areas is required.

Junior Machinist

A Junior Machinist must have a minimum of a high school or equivalent education and completed an apprenticeship program. Junior level background and experience in performing tasks using standard equipment and techniques in general technical areas is required.

Technician

A Technician must have a minimum of a high school or equivalent education and knowledge of tasks associated with the technical work area, technical jargon, specialized equipment, use of hand-held calculator, use of PC to store and retrieve data, inventory maintenance, and ordering procedures. This person must be able to read and follow schematics, equipment manuals, blueprints and drawings, and sample preparation and testing procedures peculiar to the field of effort. A Technician shall be capable of setting up experimental apparatus; preparing samples, specimens, and test materials; conducting, observing, and obtaining data from standardized tests; and troubleshooting test equipment.

BENEFITS OF GSA SCHEDULE

GSA uses its aggregate purchasing power to obtain goods and services at the best value and passes these savings on to customers.

Flexibility

- Wide selection of service providers
- Wide diversity and variety of specializations among the service providers
- Cost and Time Savings
- Drastically reduced procurement lead-times and administrative costs
- Reduced internal manpower to obtain the services needed
- Pre-negotiated fair and reasonable pricing
- The ability to negotiate additional discounts during task order placements
- Streamlined ordering procedures
- NO maximum order limitation on any GSA Multiple Award Schedule. The Maximum Order (MO) Threshold was created to notify customers to ask for even greater discounts when their schedule order exceeds the MO amount.

Peace of Mind

- Service providers are compliant with all applicable regulations and competition requirements, including CICA and FAR Part 6
- All contractors are determined to be technically qualified.
- Task Orders count toward the ordering agency's socio-economic goals.

Control

- The ordering agency and the contractor have a direct relationship.
- Total engineering solutions are provided by experts to meet the customer's various needs.