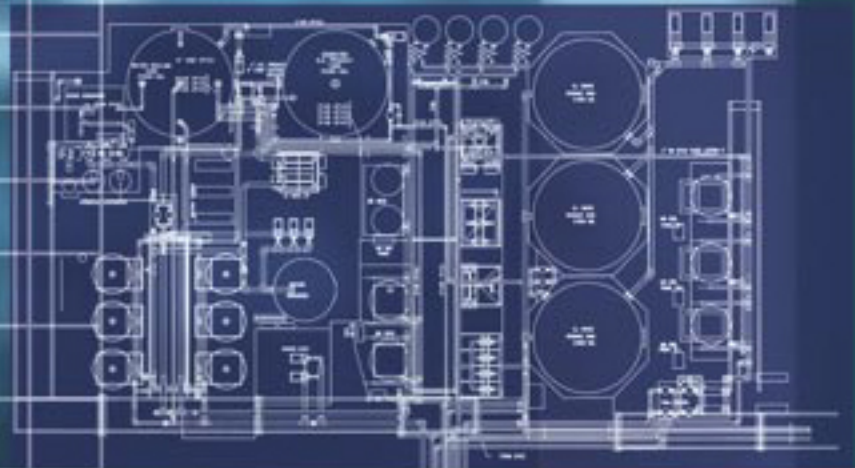




When experience, knowledge and innovation matter most.





***Mechanical, Electrical, Chemical and Process Engineering  
Environmental, Hazardous Materials  
and Code Consulting***





**CHEMICAL AND PROCESS ENGINEERING**  
**HVAC DESIGN**  
**ELECTRICAL DESIGN**  
**HAZARDOUS MATERIALS CONSULTING**  
**PROJECT MANAGEMENT**

### **INTEGRATED ENGINEERING SERVICES**

Incorporated in 1995, Integrated Engineering Services (IES) was established to satisfy industry demands in facility development, process engineering and code compliance. Since inception, the IES team of specialists has been delivering the knowledge and expertise for successful project completion while ensuring compliance with the various regulatory requirements — significantly reducing the plan review and approval cycle. In the end, our customers benefit from cost-effective and timely solutions.

- Mechanical, Electrical, Chemical and Process Design Engineers
- Hazardous Materials Specialists
- Inspectors and Plan Reviewers
- Environmental, Health and Safety Specialists

Whether you have a specialty project or require a turnkey solution, IES delivers a versatile service to address each step of the process. From initial planning and design through construction and installation — IES provides the confidence and assurance to exceed customer expectations.





## CHEMICAL AND PROCESS ENGINEERING

Our engineering staff's experience in the design, construction and operation of manufacturing facilities, and their knowledge of the latest codes and regulations, constitute the basis for successful process systems' designs.

### Specialty and Toxic Gas Distribution Piping

- High Purity Gas Applications
- Flammable and Pyrophoric Gases
- Toxic and Highly-Toxic Gases
- Specialized and Developmental Process Materials

### Process & Bulk Chemical Distribution Systems

- Corrosive & Aggressive Fluids
- Fermentation
- Chemical Delivery Systems
- Cryogenic Fluids
- "House" Systems
- Chemical Synthesis, Separation and Purification

### High Purity Water & Wastewater Treatment Systems

- Deionized Water
- W.F.I.
- Reclaim, Re-Use & Recycling
- Acid Waste Neutralization
- Waste Segregation
- Metals Recovery and Abatement

### Manufacturing and Utility Systems

- Clean Steam, CIP, SIP
- Oil Free and Clean, Dry Air
- Process Cooling Water
- Process Chilled Water
- House Vacuum, Wet House Vacuum and Process Vacuum

## HVAC DESIGN

Our engineers' collective experience ensures the design of functional, efficient and cost effective mechanical systems, thereby minimizing systems' failure and reducing operating costs.

### Cleanroom Design

- Class 1 through 10,000
- Modular Cleanrooms
- Mini-Environments
- Raised Floor, Sub-fab, or Low Side Wall Return Designs

### Product Conveying Exhaust Systems

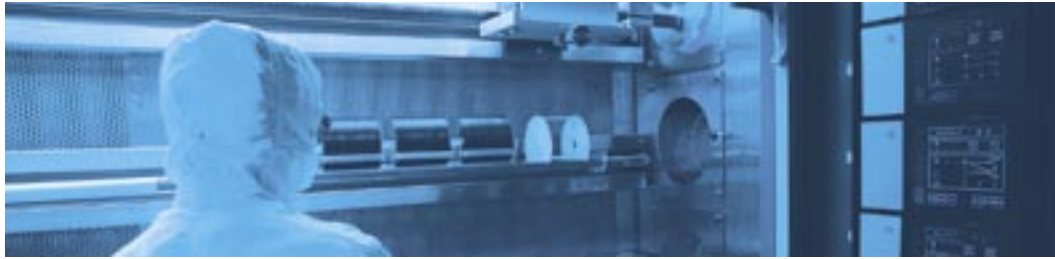
- Corrosive Fume Exhaust and Scrubbers
- Solvent Exhaust and VOC Abatement
- Flammable and Pyrophoric Exhausts
- Hazardous Process Exhaust
- Toxic Air Contaminants and Treatment
- Particulate and Dust Capture and Control Systems

### Industrial and Laboratory Ventilation

- General Ventilation
- Point-of-use Exhaust
- Laboratory Fume Hoods
- Process Ventilation
- Exhausted Enclosures

### Heating and Air Conditioning

- Central Utility Plant Design
- Chilled and Hot Water Systems
- General Office and Facility Air Conditioning



## ELECTRICAL DESIGN

IES has an experienced electrical engineering staff providing “state of the art” designs to help our clients fulfill their electrical engineering design requirements. Our expertise reaches across a variety of industries including: hi-technology manufacturing, commercial, education, government, and medical facilities. IES prides itself on having in-depth knowledge of the most recent design codes, standards, and requirements. This allows us to provide our clients with timely, cost-effective, and creative design solutions that meet their complex electrical engineering design requirements.

### Lighting Systems

- Interior Lighting
- Exterior Lighting
- Automatic Lighting
- Title 24 energy usage compliance

### Power Distribution Systems

- Medium voltage radial distribution
- Low voltage power distribution (less than 600V)
- Cleanroom Class 1 through 10,000
- Modular Cleanrooms
- Uninterruptible Power Supply
- Harmonic mitigating equipment
- Data Center power systems
- Grounding systems

### Standby Generator Power

- Power essential for life safety
- Legally required and optional standby systems

### Low Voltage Systems

- Fire Alarm Systems
- Hazardous Materials Monitoring Systems
- Telephone/Data support systems
- Clock and paging, intrusion and controlled access systems for educational and general facilities
- Nurse call systems

## HAZARDOUS MATERIALS CONSULTING

Our staff of experienced Chemical Engineers; Certified Hazardous Materials Specialists, Inspectors and Plan Reviewers; and Environmental, Health and Safety Professionals ensure comprehensive compliance with the multiplicity of regulations governing the storage, handling and use of hazardous materials.

### Uniform Building Code

- H-Occupancy & Special Uses
- Laboratory Planning & Development
- Allowable Area & Building Limitations
- Egress Requirements
- Smoke & Heat Venting
- Facility Design, Construction & Closures

### Uniform Fire and Mechanical Codes

- Semiconductor Fabrication Facilities
- Hazardous Materials Storage, Handling & Use
- Toxic, Highly-Toxic & Flammable Gases
- Explosion Control & Mitigation
- Product Conveying Exhaust Systems
- Hazardous Process Piping Systems

### Environmental Health & Safety

- Injury and Illness Prevention Program
- Hazard Communication & Training
- Emergency Response Plans
- Process Hazard & Operability Study
- CalOSHA & FedOSHA Compliance

### Regulatory Compliance & Permitting

- CUPA Compliance
- Hazardous Materials Business Plans
- Risk Management Plans
- Spill Prevention Control & Countermeasures
- Air Quality Management District
- Wastewater Discharge Permitting
- Hazardous Waste Treatment Tiered Permitting





## PROJECT MANAGEMENT

We offer unparalleled project management services coupled with extensive experience in construction management and manufacturing facilities design, construction and operation, thereby ensuring well planned and executed projects.

### Definition and Planning

- User Interface and Project Identification
- Data Collection and Programming
- Code Analysis and Occupancy Classification
- Scope of Work Identification
- Feasibility Studies and Budgetary Estimates
- Bid Solicitation and Turnkey Design Team
- Request for Proposal Preparation and Issuance

### Design

- Multi-discipline Engineering Management
- Global Perspective
- Alternate Engineering Designs and Evaluation
- Value Engineering and Cost Analysis

### Construction Management

- City Submittals and Construction Permits
- Environmental Permits
- Request for Quotation
- Bid Solicitation and Evaluation
- Construction Scheduling and Coordination
- Systems Startup and Commissioning

## THE IES TEAM

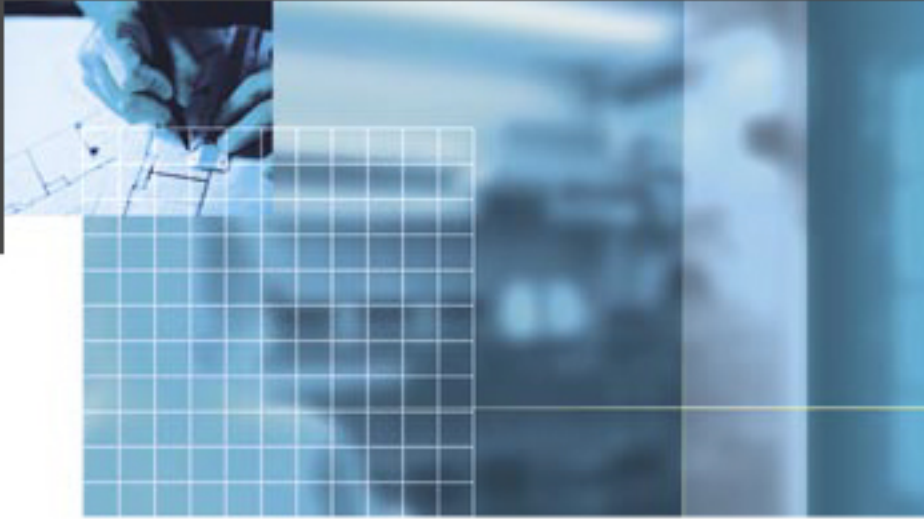
Our experienced team enables IES to meet the critical process demands of our customers by delivering the expertise and knowledge to successfully complete projects in a cost-effective and timely manner. These specialists in the areas of facilities engineering, planning, and design as well as in regulatory and environmental issues instill confidence and assurance for complete customer satisfaction.

## INDUSTRIES SERVED

Our broad range of expertise and experience allows us to effectively serve the following industries:

- Semiconductor Devices & Equipment Manufacturing
- Biotech and Pharmaceutical Laboratories
- Microelectronics
- Printed Circuit Board and Metal Finishing
- Specialized Chemical Manufacturing and Distribution
- Computer Peripherals Manufacturing
- Regulatory Agencies





**Integrated  
Engineering  
Services**

70 Saratoga Avenue Suite 200 Santa Clara, CA 95051-7301  
P: 408.261.3500 F: 408.261.4176  
<http://iesengineering.net>