

## MIPET Operative & Thematic Modules

The evolution in Industrial Plant Engineering requires constant updating and continuous training of qualified personnel, in this context Genoa University developed the MIPET Professional Modules that represent an important element of MIPET (Master on Industrial Plant Engineering & Technologies - [www.itim.unige.it/mipet](http://www.itim.unige.it/mipet)); MIPET is organized by the Engineering Faculty of Genoa University in collaboration with numerous companies operating in this sector (ABB, Bombardier, Danieli Centro Combustion, Duferco Engineering, Fisia Italmobiliari, Paul Wurth, Prism systems, Tenova) and Confindustria and the Society of Professional Engineers. The proposed modules are open to engineers and company technicians, and are defined as Operative Modules; each Operative Module is focused on a specific topic: Project Operational Management, Constructions, Standards & Regulations, Safety & Risks, each Operative Module is characterized by a duration of 35 hours organized over an intensive week of lectures, tutorials, case studies, simulations and Role Play Games; the Instructors are a mix of Academics and Engineering Experts and all the lectures are in English; the attendees will receive all the support material; currently these Modules are already scheduled, however, on the basis of the received applications further editions could be organized, even in Italian if requested. Companies and individuals are entitled to register and participate by filling out the MIPET Operative Course Form and sending it to Perform ([mipet@itim.unige.it](mailto:mipet@itim.unige.it)); a special fee is reserved for employers of companies associated Confindustria and/or engineers members of the Professional Engineering Society (Ordine degli Ingegneri); in addition, this year it will be possible for MIPET Sponsor Companies & Institutions to register participants even on MIPET Thematic Modules.

In every MIPET module, Professors from University as well as Experts from industry provide direct and interactive opportunities to learn the state of art of Industrial Plant Engineering & Technologies; each single module includes foreground assessments and tests for evaluating the students.

MIPET includes lectures, case studies, examples, testimony, exercises, role play games, simulations as well as tours and visits to real plants and R&D Labs

### Module Outcome

MIPET Modules are devoted to develop skills in System and Process Engineers, Technical Coordinators operating effectively in Project Teams in Global Engineering and Construction. These Modules provide deep technical skills in Industrial Plant Engineering & Technologies over specific thematic and operative areas.

### Who Should Attend

The MIPET Modules are Continuous Professional Education for people with Engineering experience and/or new graduates; so MIPET Modules are addressing:

- Young Engineers with strong technical background
- Engineers interested in attending specific thematic educational modules of the Master Program that are already working in Companies involved in Construction and Engineering of Industrial Plant and related sectors

### Module Registration Forms

MIPET Modules include special discounts for Confindustria Members, Associates to Ordine degli Ingegneri and MIPET Sponsors; Registration Form are available at the end of this document, for further info on fees and special offers please contact Ilaria Burlando by email:[mipet@itim.unige.it](mailto:mipet@itim.unige.it).

## MIPET OPERATIVE MODULES

The Operative Modules are organized within 1 week (5 days, ~35 hours); all Interested Companies, Engineers & Institutions are entitled to register for participation.

### **Operative Module 1: Standards & Regulations (Coordinator: Prof.Giribone, Ing.Tremori & Ing.Cerruti)**

- Large Industrial Plants: an Overview on Standards, Regulations and Administration Authorization Processes along Project Life Cycle
- Case Study on Impact of International Regulations on Industrial Plants with Special Attention to Directive 2006/42/CE, ATEX, PED.
- Quality Assurance and Control in Industrial Plants
- Quality, Safety and Environment Integrated Management in term of standards and regulations
- Environmental Impact Evaluation
- Introduction on Fire Safety and Explosion Risk for Industrial Plants. Risk Analysis for Fires and Explosions: methods, documents and classification
- Safety Concept. Innovative Engineering Solutions for Fire and Explosions in Industrial Plants. Combination of Explosion/Fire Risks
- Fire Safety and Explosion Simulation
- Actions: organization, prevention, protection and mitigation solutions
- EXPLOSAD (Experience on Process Plant Safety Design): Case Study based on Simulation applied to fire and explosion protection applied to an industrial plant

### **Operative Module 2: Project Management (Coordinator: Prof.Bruzzone, Ing.Fassone)**

- Project Management and specific issues related to Industrial Plants
- Project Life Cycles
- Reporting & Metrics for Project Management: PMB & KPIs
- Cost and Time Management, Techniques and Methodologies for supporting planning and control
- Risk Analysis & Risk Management: Risk Source Identification, Quantification, Decisional Trees, Statistical Methods and Simulation
- Communications: Technological Solutions, Information Distribution Policies
- HR in Project Management, organizational planning, People Management
- Quality Management: methods, constraints and critical issues in Industrial Plants
- Project Management Networks and Certification Processes
- Coordination Engineering, Purchasing, Erection, Commissioning
- PM Certification, Societies and International Overview
- Role Play Game: Celebes (Cooperative Engineering Plant, Project Business Exercise and Simulation), work to be completed by coordinated teams concurrently working on a complex industrial plant under coordination of real Project Managers and operating on a distributed simulation

### **Operative Module 3: Construction (Coordinator: Prof.Tonelli, Ing.Donetti)**

- Construction of Industrial Plants
- Industrial Plant Construction from Project Start, Precommissioning, Commissioning, Closing
- Case Studies on Project Logistics in National International Frameworks
- Interaction between Engineering and Purchasing
- Case Study on Engineering Purchasing interactions
- Managing Construction Projects on Site
- Case Studies on Construction Yard Management
- Planning and Control on Site Construction
- Case Study on Construction Yard Activities
- Safety on Erections, Heavy Transport and Heavy Lifting during Construction
- Babel Experience: competition between two teams each one divided between Site and Office on a Construction Project; the experience is devoted to outline the critical issues related to coordination/cooperation between engineering and constructions as well as aspects related to communication, human resource management and project documentation

### **Safety & Risks (Coordinator: Prof.Taramasso, Ing.Tremori)**

- General Safety concepts related to Industrial Plants Life Cycle (accident pyramid, cause effect analysis, risk analysis, training and information, BBS, main indexes and matrixes, organization)
- Specific safety characteristics on Process Plants
- General Risks on Industrial Plants
- Methodologies and behavioral aspects related to safety and risks to be considered in plant design and construction
- Behavioral aspects influence on accident frequency
- Safety Design
- Quantitative and Qualitative methods to support risk evaluation and management
- Introduction to integrated safety and risk evaluation systems
- Case Study on Safety Integrated Solutions
- Introduction to SBRA Methodology
- Exercise: application of SBRA (Scenario Based Risk Assessment) Methodology on a Construction Yard
- Case Study Resolution on the Construction and Debriefing on SBRA (Scenario Based Risk Assessment) application
- Introduction to Industrial Plant Service impact on Safety along Plant Life Cycle: Availability and indexes, Alternative Approaches, EOH, Impact of Engineering on Service and Safety, Service Inventory, Consistency and Optimization of Inspection and Revision Policies
- Service for Complex Industrial Plants

## MIPET THEMATIC MODULES

The Thematic Modules are focusing on different industrial plant engineering sectors; the Thematic Modules are open for registration just to MIPET Sponsors & Institutions

### Power Plants (Coordinators: Ing.Barabino & Ing. Traverso)

- Power Plants
- Fossil Plants & Conventional Plants
- Combined Cycle Plants
- Combined Cycle Plant Configuration
- Mechanical Plants
- Environmental Impact of Power Plants
- Electrical Plants
- Piping design
- Power Production Market
- Gas Turbine Plants
- Steam Turbine Plants
- Alternators
- Boilers
- Water Treatment Plants
- Tour: Visit to Power Plant

### Combustion Technology (Coordinators: Ing.Mozzi, Ing. Raggio)

- **Combustion Technologies**
- Fluid Dynamics & Heat Exchanges in Industrial Plants
- Operational Procedures in Combustion
- Combustion Models for Industrial Plants
- Overview on Heating Furnaces
- Technological Trends in Industrial Furnaces
- Example: Hot Treatment Furnace Design

### Iron & Steel Plants (Coordinators: Ing.Fontana, Ing.Raggio, Ing.Mozzi)

- Iron & Steel Industry Processes
- Iron & Steel Market
- From Raw Material to Blast Furnace
- Fundamentals of Metallurgical Processes
- Metal Making
- Industrial Furnaces
- Blast Furnace
- Iron & Steel Plants: Sinter, Pellet, Steelworks
- Steel Rolling Processes & Heat Treatment
- Strip Processing
- Cold Milling Rolling
- Roll Shops
- Material Handling
- Coke Plants
- Tour: Visit to Steel Plant

**Processes & Machines in Industrial Plants (Coordinators: Prof.Lucifredi, Ing.Romairone)**

- Combustion Technologies
- Fluid Dynamics & Heat Exchanges in Industrial Plants
- Operational Procedures in Combustion
- Combustion Models for Industrial Plants
- Overview on Hot Treatment Furnaces
- Technological Trends in Industrial Furnaces
- Example: Hot Treatment Furnace Design
- Combustion Technologies for Gas Turbine
- Condition Monitoring, Diagnostics, Non destructive Controls and Plant Maintenance
- Vibration Analysis, Modal Analysis, FEM for vibration analysis, TPA, durability, inertial characteristics by experimental analysis, regulations for sustainable vibration analysis, qualification on vibration of mechanical components (sine, random, combined); criteria for requirement definition (mission synthesis), acoustic intensity and holography
- Simulation and Dynamic Analysis of Plants and Machines for Raw Material Handling and Manufacturing
- Industrial Plant Management & Maintenance
- Industrial Plant Services
- Safety & Security in Industrial Plants
- Project Document Flow related to Electrical Systems in Industrial Plants
- Project Document Flow related to Mechanical Drawings in Industrial Plants
- Example: Company Organization within a Power Plant Producer
- Example: Company Organization within a Iron & Steel
- Document Flow for Proposals and Tenders
- Panel Discussion on Documentation & Organization within Industrial Plant Business

**Desalination and Water Treatments (Coordinators: Ing.Fontana, Ing.Migliorini)**

- Waste Water Treatment Plants
- Municipal Solid Waste Treatment: Incineration Plants, Pyrolysis and Gasification
- Case Study: MSW Gasification Plant
- Desalination Plants
- Case Study: Case Study: Desalination Plant - Heat Exchange & Plant Processes
- Case Study: Case Study: Desalination Plant - Material Transfer and Pumping Operations, Alternative Technologies
- Desalination Plants
- Fuel Storage Facilities

**Environment and Sustainability for Industrial Plant Engineering (Coordinators: Prof.Del Borghi, Prof.Tonelli, Ing. Fontana)**

- Environmental Control Techniques within Industrial Plants
- Life Cycle Assessment
- Sustainable engineering: Engineering and the industrial sequence, Green chemistry, Green engineering, The process design challenge, Pollution prevention, The process life cycle, Green technologies
- Design for Environment and Sustainability: Plants and Infrastructure: Electric power infrastructure, Water infrastructure, Transportation infrastructure, Mechanical infrastructure, Infrastructure and building material recycling
- Analysis of technological systems: Industrial ecosystems, Material Flow Analysis, National material accounts, Energy and industrial ecology, Water and industrial ecology, Modeling in industrial ecology
- Industrial ecology and sustainable engineering in developing economies: The three grouping, RDC/SDC dynamic and perspectives, Industrial ecology and sustainable engineering practice in LCDs
- Flue Gas Treatment in Iron & Steel Industry
- Urban Solid Waste Treatments: Incineration Plants, Pyrolysis, Gasification Plants
- Case Study: Gasification Plant

**MIPET MODULES REGULATION & FEES**

<b>Operative Module</b>	<i>Discounted Fee</i>	<i>Regular Fee</i>	
Standards & Regulations - March 12-16, 2012 (5 days)	1,200.00	1,500.00	Euro (IVA Esente)
Construction -March 19-23, 2012 (5 days)	1,200.00	1,500.00	Euro (IVA Esente)
Safety & Risk - March 26-30, 2012 (5 days)	1,200.00	1,500.00	Euro (IVA Esente)
Project Management - May 7-11, 2012 (5 days)	1,200.00	1,500.00	Euro (IVA Esente)
<b>Thematic Modules</b>	<i>Discounted Fee</i>	<i>Regular Fee</i>	
Iron & Steel - April 2/3/4/5/16/17/19, 2012 (7 days)	2,100.00	2,625.00	Euro (IVA Esente)
Power Plants - April 20/May 2/3/4, 2012 (4 days)	1,200.00	1,500.00	Euro (IVA Esente)
Water Treatment & Desalination - May 15-17, 2012 (3 days)	900.00	1,125.00	Euro (IVA Esente)
Combustion Technology - May 21-22, 2012 (2 days)	600.00	750.00	Euro (IVA Esente)
Processes & Machines in Industrial Plants - May 23-25/28-30, 2012 (6 days)	1,800.00	2,250.00	Euro (IVA Esente)
Environmental Plants and Sustainability for Industrial Plants - June 4-7, 2012 (4 days)	1,200.00	1,500.00	Euro (IVA Esente)

**MODULE STRUCTURE**

Each Module includes a knowledge assessment and the attendees successfully completing each single Module receive a Certificate from Genoa University.

The Educational Material specific of the Module is provided to each attendee; all Modules are delivered in English by University Professors & Industrial Experts; Operative Modules are open to all companies and engineers interested, while Thematic Modules are offered just to MIPET Sponsor Companies & Institutions.

**FREE SEATS IN OPERATIVE MODULES**

In case of multiple registrations you will get for Free the 4th Operative Module Seat (4 seats available with 3 registrations on Operative Modules); please note that this offer requires prepayment in full and is non refundable & non changeable; these free seats cannot be combined with other discounts or benefits Each MIPET Sponsor will get two free seats for each Operative Module; to learn about MIPET Sponsor Benefits please contact [mipet@itim.unige.it](mailto:mipet@itim.unige.it)

**DISCOUNTED FEES**

Discounted Fees are eligible for MIPET Sponsors and Members of Confindustria and/or Ordine degli Ingegneri; please note that these Discounted Fees requires prepayment in full and it is non refundable.

**REGISTRATION DEADLINE**

Do not forget to register early to secure your place; therefore please remember to respect the deadline for registration (March 1st, 2012)

**MODULE SCHEDULE**

The Module Tentative Schedule is provided above, therefore changes are possible and all the attendees will be promptly informed; please note that additional editions of the Modules could be held if necessary; the dates of these additional editions will be communicated and agreed as soon as possible with attendees.

**REGISTRATION PROCEDURE**

Please send the MIPET Registration Form and the MIPET Attendee Form(s) to Ilaria Burlando by Email ([mipet@itim.unige.it](mailto:mipet@itim.unige.it)) or fax (+39 010 209 9469); please include the Registration Form with your Point of Contact for coordination and billing activities and attach as soon as possible the MIPET Attendee Forms; each registration entitle to have a seat in the corresponding Module and attendee names are changeable, therefore in order to obtain the MIPET Certificate an attendee should attend at least 70% of the course and pass the final foreground assessment.

The Master in Industrial Plant Engineering and Technologies of the Genoa University



# MIPET Form



## MIPET Registration Form

Name \_\_\_\_\_ Title: \_\_\_\_\_ Role: \_\_\_\_\_ Background: \_\_\_\_\_  
 Affiliation: \_\_\_\_\_ Department/Division: \_\_\_\_\_ VAT: \_\_\_\_\_  
 Office Address: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Town: \_\_\_\_\_ Country: \_\_\_\_\_  
 Email: \_\_\_\_\_ Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Mobile: \_\_\_\_\_

Operative Modules	Registrations	Free Seats <sup>(*)</sup>	Discounted	Regular	Total
<b>Standards &amp; Regulations - March 12-16, 2012 (5 days)</b>	—	—	1'200	1'500 [Euro]	—
<b>Construction - March 19-23, 2012 (5 days)</b>	—	—	1'200	1'500 [Euro]	—
<b>Safety &amp; Risk - March 26-30, 2012 (5 days)</b>	—	—	1'200	1'500 [Euro]	—
<b>Project Management - May 7-11, 2012 (5 days)</b>	—	—	1'200	1'500 [Euro]	—
<b>Thematic Modules</b>					
<b>Iron &amp; Steel - April 2/3/4/5/16/17/19, 2012 (7 days)</b>	—	Not Applicable	2'100	2'625 [Euro]	—
<b>Power Plants - April 20/May 2/3/4, 2012 (4 days)</b>	—	Not Applicable	1'200	1'500 [Euro]	—
<b>Water Treatment &amp; Desalination - May 15-17, 2012 (3 days)</b>	—	Not Applicable	900	1'125 [Euro]	—
<b>Combustion Technology - May 21-22, 2012 (2 days)</b>	—	Not Applicable	600	750 [Euro]	—
<b>Processes &amp; Machines in Industrial Plants - May 23-25/28-30, 2012 (6 days)</b>	—	Not Applicable	1'800	2'250 [Euro]	—
<b>Environment and Sustainability for Industrial Plants - June 4-7, 2012 (4 days)</b>	—	Not Applicable	1'200	1'500 [Euro]	—
<b>Total (VAT not included)</b>	—	—	—	[Euro]	—

Affiliated to Confindustria [Yes] [ No ]      Member of Ordine degli Ingegneri [Yes] [ No ]      Member of MIPET Sponsor [Yes][ No ]

Please send the form to **Ilaria Burlando** by Email [mipet@itim.unige.it](mailto:mipet@itim.unige.it) or by fax to +39 010 209 9469      Signature \_\_\_\_\_

Filling up this form is an explicit authorization to use these info for MIPET initiative (D.Lgs 196/2003)





The Master in Industrial Plant Engineering and Technologies of the Genoa University



# MIPET Form

## MIPET Attendee Form

Name: \_\_\_\_\_ Title: \_\_\_\_\_ Role: \_\_\_\_\_ Background: \_\_\_\_\_

Affiliation: \_\_\_\_\_ Department/Division: \_\_\_\_\_ Business Sector: \_\_\_\_\_

Office Address: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Town: \_\_\_\_\_ Country: \_\_\_\_\_

Email: \_\_\_\_\_ Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Mobile: \_\_\_\_\_

Operative Modules

Standards & Regulations (5 days)  Project Management (5 days)  Construction (5 days)  Safety & Risk (5 days)

Thematic Modules

Iron & Steel (7 days)  Processes & Machines in Industrial Plants (6 days)

Power Plants (4 days)  Water Treatment & Desalination (3 days)

Combustion Technology (2 days)  Environment and Sustainability for Industrial Plants (4 days)

Affiliated to Confindustria [Yes] [ No ] Member of Ordine degli Ingegneri [Yes] [ No ] Member of MIPET Sponsor [Yes][ No ]

**Please send the form to Ilaria Burlando by Email to [mipet@itim.unige.it](mailto:mipet@itim.unige.it) or by fax to +39 010 209 9469**

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