



**MILANO**  
**SUMMER SCHOOL**  
JUNE > AUGUST > 2009



COURSES / **ENVIRONMENT** /

## **ENERGY IN THE THIRD MILLENNIUM**

### **CHAIN AND INTERCONNECTIONS**

#### **OBJECTIVES**

Reliable access to, and the availability of, energy at reasonable costs and with low impact on the surrounding environment have been considered as strategic issues for the promotion of a sustainable economy for a decade.

On one hand, for example, Europe is launching a number of programmes with the objectives of developing scientific knowledge on the problem, benchmarking the different technologies and energy carriers, and searching for competent, multiplayer groups (Think Tanks) for support in the decisions essential in reaching the ambitious 20-20-20 target expressed by the European Strategic Energy Technology Plan.

On the other hand, developing countries are also having to face energy issues: energy access is limited for entire populations, and in many cases there is not enough power to fuel true industrial development.

The course is thus designed to provide students with a general and comprehensive vision of the energy issue in the third millennium.

General overviews on different aspects of energy issues are presented, linking the problem to that of environmental impact and sustainable development.

Analysis of energy needs and energy sources is developed in great detail, along with the current situation and trends in worldwide energy consumption. The reserves of fossil fuels and the potential of renewable sources and nuclear energy are discussed. The local and global effect of energy production will also be examined during the course. Cost of fuels; the cost of electrical energy. The energy chain and the value of the chain today is also treated as a relevant topic: all phases from extraction to production, distribution and final consumption are described and discussed.

#### **MAIN TOPICS**

The course is designed with the aim of defining the relationships between energy, social development and environment, providing a comprehensive view of the overall energy chain from extraction to production, distribution and final consumption. The potential of alternative solutions (from renewable sources to nuclear energy) will also be examined in a global context.

#### **LANGUAGE**

English



## CALENDAR AND ATTENDANCE

### 3-7 August, 2009

Lectures are both conventional – frontal – and based on participatory techniques, for a total of 20 classroom hours. Most of the course is devoted to discussing the subject and analyzing “case histories” in 10 laboratory sessions, in which real cases will be discussed.

#### Day 1: Energy, Environment and Development

2h: Introduction to worldwide energy needs in term of primary and electrical energy, the comparison between developed and developing countries.

1h: Energy source classification and global distribution: the present situation, and forecasts for the future

1h Introduction to development and energy indicators

1h Environmental impact

1h European policy

#### Day 2: Renewable potential

3h: Principles and trends in technology for energy and heat production.

3h: Trends in technology for cold energy production

1h: Case History - presentation

#### Day 3: Nuclear potential

2h: Principles and trends in technology for energy and heat production.

1h: The non-energetic usage of nuclear plant.

2h: The materials used for energy

1h: Case History - presentation

#### Day 4: Electrical energy

3h: Principles and trends in energy production technology: oil, gas and coal

#### Transportation

2h: Engine efficiency improvements within the transportation sector

1h: Case History - presentation

#### Lesson 5: Distribution and Regulation

2h: Security of supply and network stability

1h: Case History - presentation

#### Efficiency and End Use

2h: End use efficiency

1h: Best practice and social behaviour as an energy-saving tool.

## CANDIDATE PROFILE

The course is designed for undergraduate and graduate students, with a solid business/managerial



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or technological background, wishing to increase their knowledge of energy management and policy.

#### **ADMISSION PROCEDURE AND DEADLINE**

The course will be activated for a minimum of 20 students. Admission to the course is subject to selection. Before the interview, candidates must send a CV, with a brief description of their studies and any eventual professional experience.

The deadline for submission of the application documents is 30 June, 2009.

#### **ASSESSMENT AND FINAL QUALIFICATION**

The examination consists of presenting a discussion on one of the issues studied, with the appropriate degree of detail.

#### **FEES**

€ 300

The School may award up to 5 income-based scholarships covering the tuition fee.

#### **CONTACTS**

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