

Master of Science (M.Sc.) in:

**"Renewable Energy Systems: Design, Development and
Optimization"**

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Typical duration:

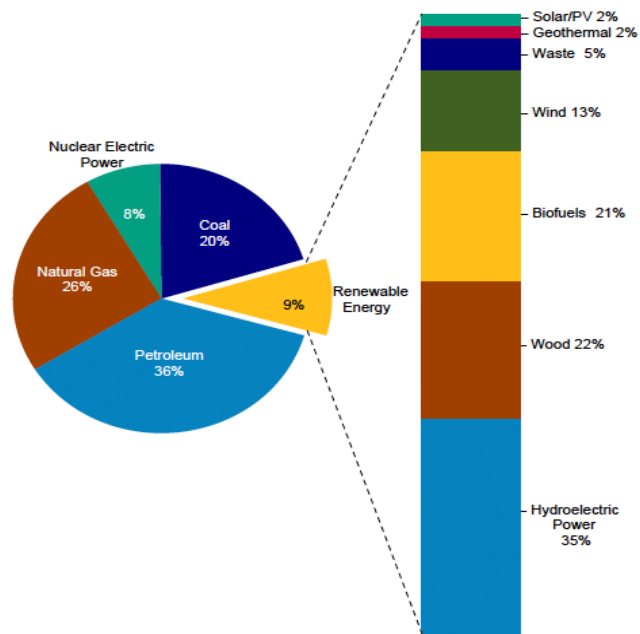
Three semesters, commencing in October

Dear visitors

Welcome to the Graduate Studies Program in **“Renewable Energy Systems: Design, Development and Optimization”**, offered by the Department of Mechanical Engineering of the Technological Education Institute of Central Macedonia, at Serres, Greece.

Renewable energy (RE) refers to the form of energy which is derived from natural processes, that are replenished also naturally. Currently, 9% of the total electricity generation worldwide is provided by RE sources and RE power generators are spread across many countries all over the world, offering a **unique opportunity for professional award**.

During the past few years, climate change concern in connection to high oil prices and a persistent threat of a worldwide energy crisis have lead to a constantly increasing support for **power generation from RE sources**. As a consequence, today, in most of the developed (and developing) countries new government policies arise (regarding both spending and legislation), helping RE industry and commercialization to grow in spite of the global economic crisis.



Nowadays, almost **2.3 million people worldwide** work either directly in RE industry (the large-scale hydroelectric power plants not being taken into account) or indirectly in supplier industries. In particular, the wind power industry employs some 300,000 people, the solar photovoltaics sector accounts for an estimated 170,000 jobs and the solar thermal industry at least 624,000. More than one million jobs are found in the biomass and biofuels sector. Small-scale hydropower and geothermal energy are smaller but also active employers (source: World-Watch Institute, February 2013).

The growth in the RE sector drives the **demand for qualified engineers**. It is now estimated that RE jobs will double every ten years, thus yielding to almost **5 million RE executives & employees** by the year 2020 (source: World-Watch Institute, February 2013).



In an effort to respond to the increasing demand of domestic (and foreign) industry for **specialized RE expertise**, the Department of Mechanical Engineering of the Technological Education Institute of Central Macedonia, at Serres, Greece, offers a new **Graduate Studies Program**, aiming to:

- prepare engineers for a truly global sector,
- train professionals to be resourceful problem solvers, and
- promote specialized competencies in the RE sector.



Our Department provides **extensive opportunities for graduate students**, to engage in advanced studies and collaborate with our faculty & colleagues, thus profoundly growing as RE executives and experts.

The Graduate Studies Program in **“Renewable Energy Systems: Design, Development & Optimization”** is completed in **three semesters**:

1. In the **first** semester the students acquire solid foundations in advanced elements of Mechanical Engineering.
2. In the **second** semester focus is set on the development of particular RE technologies.
3. In the **third** semester the students work out their Master’s Thesis.

The **M.Sc. Thesis** is considered to be the keystone of a student's graduate experience; hence, it must be an **original work** in the design, development and optimization of RE systems, performed under the supervision of a faculty member.



The M.Sc. Degree is received after successful accumulation of **ninety (90)** European Credit Transfer System (ECTS) units (1 unit = 28 hours study, according to ECTS).



Today, even with our best efforts to promote energy efficiency, the global demand for energy continues to increase. In this context, further study on RE systems & processes is needed. We believe that, upon deliverance of the M.Sc. Studies Program in **“Renewable Energy Systems: Design, Development and Optimization”**, we can set a path towards the future for RE expertise, and, building on our spirit, we can deliver the executives that will drive the next wave of economic growth.



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Please use the following links, to download:

- [The **Homepage** of the Program](#) (this document)
- [The **M.Sc. Program Course Guide**](#) (in English)
- [The **M.Sc. Program Course Outline**](#) (in English)
- [The **Academic Calendar** of the Third Session](#) (in English)
- [The **Weekly Schedule** of the Third Session](#) (in English)
- [The **Examinations Schedule** of the Third Session](#) (in English)
- [The **Application Form**](#) (in English)

The Director of the M.Sc. Studies Program,

Professor **Anastasios MOISSIADIS**