

Why study Mechanical and Manufacturing Engineering at the University of Cyprus?

The pessimist complains about the wind; the optimist waits to change; the realist adjusts the sails. William Arthur Ward.

Change the realist to Mechanical Engineer and this reflects the mindset of a mechanical engineer. Whilst physicists and other natural scientists seek to explain and understand all the aspects of nature, mechanical engineers always devise ways to exploit it to solve problems. The tool of achieving this is design and innovation, for design takes into consideration the physical processes underlying a specific problem and proposes a solution and innovation generates the technology that is used to solve a problem. Mechanical engineers have harvested the power of the wind to solve the problem of long distance transportation. Along the way they created the technology to that enabled transportation to outer space. The modern history of mechanical engineering initiates with the invention and construction of steam engines. The repercussion of this was to put the steam power to manufacturing with consequence ... the industrial revolution.

The ability of mechanical engineers of analyzing a problem and synthesizing a working solution irrespective of the field of application rendered the discipline of mechanical engineering, if not the broadest, one of the broadest disciplines. As a consequence many, and often interdisciplinary, divisions of mechanical engineering were developed: for example automotive and airplane engineering, biomechanics, robotics, acoustics, materials, power plant engineering, renewable and conventional energy sources, automation, air-conditioning, refrigeration, mechatronics, manufacturing processes, manufacturing organization, fabrication, and nano(micro)-systems.

Overall mechanical engineers must have two main skills: 1) that of proper analyzing any given problem and 2) that of synthesizing a solution to the problem.

The first skill requires a solid understanding of the underlying basic general natural principles of the problems which when associated with mathematics transform the problem to a set of computable quantities.

The second skill requires the ability of utilizing the information that the numerical quantities convey about the problem to design a solution. This involves a great deal of creativity.

Important other skills that enhance the effectiveness of the two main ones are communication, team work, learnability and adaptability.

The Mechanical and Manufacturing Engineering BSc. Program offered at the University of Cyprus was designed and created having in mind in enabling the students to develop the potential of acquiring the necessary skills. To this end during the first two years of the studies along with basic theoretical and experimental engineering courses basic physics, chemistry and mathematics courses are given. As the program develops students learn: 1) the science and art of analyzing real problems through engineering analysis courses such as vibrations, fluid dynamics, heat transfer, material engineering and thermodynamics and (2) the values of creativity in synthesizing the information acquired from analysis to working procedures and devices as solutions to problems. During the final stages of the program students have the chance to take courses in wider areas of mechanical engineering such as robotics, tissue engineering, modern manufacturing or extend their knowledge in some of the engineering analysis courses.

The BSc. Program in Mechanical and Manufacturing Engineering is a four year program and it is delivered by relatively young faculty members with research interests in Mechanical and Manufacturing cutting edge areas. One of the priorities of the department is the quality of teaching that is assured by following the teaching map as it has been drafted by the University of Cyprus. The faculty members of the department encourage the involvement of students to research from the early years of their study and through the final year project there is a direct and frequent communication between faculty members and students. Many graduates continue their academic education at the postgraduate level at both our Department and to other reputable universities abroad.