

COLLEGE OF ENGINEERING
UNIVERSITY OF SOUTH FLORIDA - 2009/2010 UNDERGRADUATE CATALOG

CERTIFICATE PROGRAMS

Certificate in Biomedical Engineering

Biomedical Engineering is a highly interdisciplinary field where basic engineering principles are applied to problems in the biomedical sciences. Typical specific areas of interest include: understanding basic biochemical and physiological processes, designing and analyzing medical diagnostics and procedures, evaluation and design of health care systems and facilities, design and valuation of prosthetic devices, and general biomedical product development. The College of Engineering offers an undergraduate Enhancement Certificate in Biomedical Engineering. There are two main purposes for the certificate program

1) to accommodate students interested in entering medical school following graduation (this program satisfies most of the typical minimal admission standards for medical school); and 2) to prepare students for graduate education program, drawing from all engineering disciplines, biology, physical sciences, biomedical and clinical sciences. Undergraduate students anticipating graduate studies in the bioengineering area (or related fields such as medicine) are strongly encouraged to gain research experience as part of their program. Research possibilities exist in Engineering, the Health Sciences Center, Public Health, and Arts and Sciences.

The Certificate in Biomedical Engineering provides students an opportunity to get an introduction to a rapidly developing field of study and to receive recognition for their endeavors. Students in the program must fulfill all the requirements for an Engineering undergraduate degree, such as Bachelor of Science in Chemical Engineering and also meet the additional requirements of the Certificate program. Enrollment is through the Department of Chemical & Biomedical Engineering.

Certificate in Technology Management

A post baccalaureate student may enhance professional achievement by completing a Certificate in Technology Management. The required fifteen (15) semester hours in five (5) courses will enhance students' ability to succeed in a highly competitive global environment. This certificate is designed for individuals with technical backgrounds. Qualitative approaches with quantitative methods are emphasized to strengthen technical credentials and while developing managerial competencies. This program is offered by the Department of Industrial and Management Systems Engineering on the Tampa Campus or online via APEX.

Certificate in Total Quality Management

An undergraduate student, or graduate engineer, may enhance professional achievement by receiving a Certificate in Total Quality Management. The student must satisfactorily complete five courses (15 credit-hours beyond the BS degree) of the eight courses in Total Quality Management. Courses include Statistical Quality Control, Design of Experiments, Reliability, Total Quality Management, and Benchmarking. Enrollment is through the Department of Industrial and Management Systems Engineering.

Certificate in Materials Science and Engineering

The Materials Science and Engineering certificate requires 15 credit hours of theoretical and applied materials courses. The Materials Science and Engineering Certificate is designed to provide students with an opportunity to gain a focused introduction into a dynamic and explosively growing technological field. The certificate has been designed to be as flexible as possible thus allowing students from different disciplines to take advantage of the program. Enrollment is through the Department of Chemical & Biomedical Engineering.

Certificate of Wireless Engineering

This Certificate provides post-baccalaureate students with studies in engineering techniques of modern wireless circuits, antennas, and communication systems. Students must have successfully completed an

undergraduate course in Electromagnetics. The candidate should also have an earned B.S. in Electrical Engineering or Computer Engineering. Any other degree track must meet the Electrical Engineering department's approval.

Certificate of Enhancement

The Certificate of Enhancement in (a designated engineering discipline) provides students an opportunity to gain an enhanced experience in their chosen field while pursuing an engineering degree. Each department may offer a certificate of enhancement in the designated discipline. These include the Certificates of Enhancement in Chemical Engineering, Civil & Environmental Engineering, Computer Science, Computer Engineering, Electrical Engineering, Industrial and Management Systems Engineering, Information Systems and Mechanical Engineering. In addition, there are two specialized Certificates of Enhancement in Transportation Engineering and Wireless Engineering.

Requirements:

1. Enrolled in a Bachelor of Science degree program in a specified engineering discipline.
2. A minimum of 15 hours of additional specialization related courses, which have been approved by the department beyond those included as a part of the B. S. degree, from an approved list. Courses must be taken on a letter-grade basis, and a minimum of 9 hours must be College of Engineering courses.
3. A G.P.A. of 2.0 or greater for the additional hours.
4. The student must receive the B.S. degree to receive the Certificate of Enhancement. Please contact the appropriate department undergraduate coordinator to be accepted in the program.