



POLITÉCNICA



ABET Accreditation at ETSIT-UPM

Telecommunication Engineer Program (MS)



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ABET Accreditation at ETSIT-UPM

- *ABET: Accreditation Board for Engineering and Technology*
- Federation of 30 professional and technical societies:
- American Academy of Environmental Engineers (AAEE)
American Ceramic Society's National Institute of Ceramic Engineers (ACerS/NICE)
American Congress on Surveying and Mapping (ACSM)
American Institute of Aeronautics and Astronautics (AIAA)
American Institute of Chemical Engineers (AIChE)
American Industrial Hygiene Association (AIHA)
American Nuclear Society (ANS)
American Society of Agricultural and Biological Engineers (ASABE)
American Society of Civil Engineers (ASCE)
American Society for Engineering Education (ASEE)
American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE)
American Society of Mechanical Engineers (ASME)
American Society of Safety Engineers (ASSE)
Biomedical Engineering Society (BMES)
CSAB
- IEEE
Institute of Industrial Engineers (IIE)
International Council on Systems Engineering (INCOSE)
International Society of Automation (ISA)
International Society for Optics and Photonics (SPIE)
The Minerals, Metals, and Materials Society (TMS)
National Council of Examiners for Engineering and Surveying (NCEES)
National Society of Professional Engineers (NSPE)
Society of Automotive Engineers (SAE)
Society of Fire Protection Engineers (SFPE)
Society of Manufacturing Engineers (SME)
Society for Mining, Metallurgy, and Exploration (SME-AIME)
Society of Naval Architects and Marine Engineers (SNAME)
Society of Petroleum Engineers (SPE)



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- ABET is recognized by the Council for Higher Education Accreditation (**CHEA**)
- Organized in four Commissions:
 - Applied Science Accreditation Commission (ASAC)
 - Computing Accreditation Commission (CAC)
 - **Engineering Accreditation Commission (EAC)**
 - Technology Accreditation Commission (TAC).

- ABET performs specialized accreditation applied to specific programs (*planes de estudio*) in applied science, computing, engineering, and technology at specific levels :
 - Baccalaureate
 - Master
 - Telecommunication Engineer Program at UPM: Integrated Master (5 Years)*
- Up to 2007 ABET accreditation only available on USA and signatories of the 1989 *Washington Accord*: *Canada, United Kingdom, Ireland, Japan, Australia, South Africa, Malaysia, Singapore, New Zealand, Korea, Hong Kong, Taiwan (Seoul Accord in 2008 for computer science programs)*
- From 2007, ABET accreditation available in other countries through *mutual recognition agreements* or *memoranda of understanding* with national accreditation agencies.



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ABET Accreditation at ETSIT-UPM



ACCREDITATION PROCESS (18 months):

- ❑ Application on January (signed by national accreditation agency if it exists)
- ❑ The institution submits Self-Study Report by July 1st.
- ❑ Evaluation team (Team Chair + 1-2 Program Evaluators) visits the institution (3 days Sept-Nov)
- ❑ Draft statement sent to institution in February. The statement identifies strengths and weaknesses in the program and makes recommendations for improving the program
- ❑ Accreditation result decided on July. Final statement sent to institution in September
- ❑ Accreditation process valid for 6 years.
- ❑ Programs must have graduates at application time
- ❑ *All the accreditation process must be in English*



SELF-STUDY REPORT

- CRITERION 1. STUDENTS
- *CRITERION 2. PROGRAM EDUCATIONAL OBJECTIVES*
- *CRITERION 3. STUDENT OUTCOMES*
- *CRITERION 4. CONTINUOUS IMPROVEMENT*
- CRITERION 5. CURRICULUM
- CRITERION 6. FACULTY
- CRITERION 7. FACILITIES
- CRITERION 8. INSTITUTIONAL SUPPORT
- CRITERION 9. PROGRAM CRITERIA
- GENERAL CRITERIA FOR MASTERS LEVEL PROGRAMS
- APPENDICES



SELF-STUDY REPORT

■ CRITERION 3. STUDENT OUTCOMES

- ❑ (a) an ability to apply knowledge of mathematics, science, and engineering
- ❑ (b) an ability to design and conduct experiments, as well as to analyze and interpret data
- ❑ (c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- ❑ (d) an ability to function on multidisciplinary teams
- ❑ (e) an ability to identify, formulate, and solve engineering problems
- ❑ (f) an understanding of professional and ethical responsibility
- ❑ (g) an ability to communicate effectively
- ❑ (h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- ❑ (i) a recognition of the need for, and an ability to engage in life-long learning
- ❑ (j) a knowledge of contemporary issues
- ❑ (k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.



EVALUATOR TEAM VISIT TO THE INSTITUTION

- DAY 1:
 - Visit to the facilities
 - Examination of Program Material: courses (*asignaturas*) textbooks and study material, samples of student work, exams, evaluation procedures (the material for *all the courses* in the program must be available for the evaluation team)
- DAY 2:
 - Interviews with faculty, staff, students (in english)
 - Meeting with industry representatives
- DAY 3:
 - Interview with University officials (Rector, Academic and Financial responsables)
 - Final meeting ending with non written preliminary evaluation result



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ABET Accreditation at ETSIT-UPM



Our experience at ETSIT-UPM

- ABET accreditation is difficult for traditional programs:
 - (Criteria 2, 3 & 4)
 - Structure of Integrated Master (5 Years)

ABET procedure much easier for new programs, but they need to have graduates before application.

- *Benefits:* much easier recognition process of the diploma as *MSc* for the purposes of professional licensure and registration, employment, or admission to Universities in other countries.
- *Cons:* not recognized in Spain; expensive.