Label	EUR-ACE®
Higher Education Institution	*UNIVERSIDAD CARLOS III DE MADRID*
Country	*SPAIN*
State/Province	*MADRID*
Name of the Programme	*BACHELOR'S DEGREE IN BIOMEDICAL ENGINEERING*
Degree Awarded	*BACHELOR'S DEGREE IN ENGINEERING*
Qualification Level	*First Cycle*
Programme Objectives; Profile	*The aim of the degree is to train professionals in the field of biomedical engineering who will be able to address the challenges of today's society in the areas of health and biomedicine. They will be well prepared to become biomedical engineers practicing their profession in the clinical setting, in the biomedical industry, in research institutions and in the public administration.* *The graduate program conveys the specific knowledge, skills, abilities and attitudes of the profession which are detailed below:* - *Provides the graduates with a solid scientific background that allows them to address the professional challenges of the biomedical sector.* - *Promotes skills and competences oriented to problem solving, autonomy, critical analysis and reasoning.* - *Provides the necessary technological skills to enable the graduates to address problems in the field of biomedicine.* - *Enables the graduate to carry out a unified scientific treatment on issues related to biology, medicine and technology.* - *Trains professionals able to apply the concepts of engineering to the field of biology and health.* - *Awards the graduate a full set of social, interpersonal and emotional competences, needed to work in multidisciplinary and international environments.* - *Endows the graduate with technical abilities and an awareness that enables the promotion, organization and development innovations in the field of biomedical engineering.* - *Teaches the graduate to make use of clinical and biomedical instruments in order to obtain, organize and interpret scientific and clinical information.* - *Provides the necessary background to facilitate autonomous learning and to study postgraduate courses that allow acquiring deeper or/and more specialized knowledge in the different areas of the biomedical engineering.* - *Promotes a balanced development of the personality in all its dimensions: scientific, cultural, ethical, etc., in a way that reinforces critical reasoning and awareness of the human-related issues of their profession, all this with the*

	goal of educating citizens able to exercise their freedom while respecting the legitimate pluralism, being sensitive to demonstrations of solidarity and helping to build spaces of equality, coexistence and friendship. - *Promotes the social values of a peaceful culture, contributing to the democratic coexistence, the respect of the human rights and fundamental principles such as the equality and the non-discrimination.* *It is noteworthy that this degree provides the students with a set of capabilities that have an increasing demand both nationally and internationally. Remarkably, these capabilities require long-life training, international cooperation, multidisciplinary communication and ethical compromise with the society.* *Depending of the particular track chosen, the degree provides more specific capabilities, namely on biomedical instrumentation, biomedical imaging or tissue engineering and regenerative medicine.* *The described graduate profile gives capacities to work in different areas including hospitals, bioengineering and biotechnology companies, biomedical research centres and the public administration.*
Programme Duration	*8 Semesters*
Total Number of ECTS Credits Awarded	*240 ECTS*
Brief Description of the Programme	*Biomedical engineering is a branch of engineering that focuses on the application of the principles and techniques of classical engineering to the fields of biology and medicine. Consequently, this is an interdisciplinary degree that applies the tools given by the electronics, mechanics, chemistry, computer science, telecommunications and materials engineering, together with those given by the life sciences, to the analysis and resolution of issues related to the biology and the medicine of the XXI century. For these reasons, the program of the Bioengineering Degree is structured from a core curriculum including basic scientific and technological knowledge on physics, mathematics, computer programming, statistics and chemistry (60 ECTS). This core curriculum is complemented with fundamentals in bioengineering that comprise biology, anatomy, physiology, biomaterials and biological systems (42 ECTS) and engineering fundamentals that cover relevant knowledge on electronics, instrumentation, signals and systems, mechanics, control engineering and robotics (60 ECTS).* *In the last year, the degree allows intensification on three different branches that the students can choose or combine according to their preferences: Biomedical Instrumentation, Medical Imaging, and Tissue Engineering and Regenerative Medicine (24*

	ECTS). *The undergraduate studies also comprise a transversal training in humanities and professional skills (18 ECTS), a complementary training in engineering that can be replaced by practices in the industry or external laboratories, (12 ECTS), and a final degree thesis developed either in the engineering school or in research laboratories, hospitals or industry collaborating with the program (12 ECTS). The degree totalizes 240 ECTS over four years.* *Teaching language is English. The teaching methods are adapted to the European Space of Higher Education. Continuous assessment, work in groups and laboratory projects assure that the student work is evaluated as a whole, considering not only the tasks carried out in the classroom or the exams.* *The degree has a strong practical component: well-equipped laboratories in medical instrumentation, medical imaging, anatomy and physiology, molecular biology and cell culture are available for the students use. Besides, there are a number of computers rooms with specialized programs available.* *The contact with the industrial environment enables that each year approximately 40% of the undergraduate students take internships in companies as part of their training curriculum. The possibility of studying abroad through Erasmus and other non-European mobility programs is also offered, thanks to the many existing exchange agreements with academic institutions around the world.* *UC3M actively supports students with learning difficulties: the learning activities are integrated in a program of attention to disability, which aims to ensure equal opportunities and access to education as well as the integration of all the students in the university community.*
Examples of Very Good Practice	
Accredited without / with Adjustment Requirements	*Accredited*
Adjustment Requirements	
Accredited by	***ANECA-IIE***
Accredited	*From the 14th of July 2016 to the 14th of July 2022*