Virtual Exchange Global Alliance

Universidad Carlos III de Madrid (UC3M)	BIA.2b THE CONQUEST OF SPACE: SPACE EXPLORATION AND ROCKET SCIENCE			
Course description	Space exploration plays a major role in the history of humankind. The cultural, political and sociological repercussions are extraordinary, and the amount of resources dedicated to space exploration is enormous. This aerospace course is a first step for those interested in learning more about the history of the space and the impact of space exploration on our daily lives. Each week we will focus on a major chapter in the history of space exploration. We will follow the technical, political and cultural contexts that lead to the birth of the space age, uncover the evolution of space exploration from competition to cooperation in the Apollo and post-Apollo era. Finally, we will analyze current trends in space exploration.			
Domain	Engineering			
Keywords	Space Exploration	Aerospace Engineering	keyword	keyword
Prerequisites	None.			
Level	Bachelor			
Language	English (including English subtitles)			
Number of credits and workload	**3 credits**	**4 hrs per week**	**24 hrs in total**	
Semester period and Start date course	**Semester** 2	**Start date**: 28-Jan-19 Or indicate a period.		
Application deadline	15-Jan-19			
Full course description	**Week 1: The first dreamers and visionaries. Frau im Mond (1929)** Towards space travel. When the story begins. Imagining space travel. Spaceflight literature. Promoting space travel. Pioneers and visionaries. The motion of celestial bodies. **Week 2: The first missiles. The vengeance weapon V-2 (1944)** Times of Weimar Republic and the Third Reich. Principles of rocket operation. V-2. Rockets and the birth of the Cold War. Chemical rockets. **Week 3: The dawn of the Space Age. Sputnik (1957)**			

	Treaty of Rome and Sputnik. Intercontinental Ballistic Missiles. International Astronautical Federation. Rockets and Atmospheric exploration. IGY. The Space Environment. Sputnik and the birth of the space era. **Week 4: The Giant Leap. Apollo 11 (1969)** The Giant Leap. First Man in Orbit. Moon Race. Apollo. Introduction to Space Systems I. **Week 5: Space Cooperation. Birth of ESA (1975)** Post-Moon-race cooperation. Soyuz-Apollo programme. ESA example of cooperation. The International Space Station (ISS). Introduction to Space Systems II. Life in space. Accessing space. **Week 6: Using space for Humankind. The exploitation of space** Today's life needs space. Telecommunications. Earth Observation. GNSS. Space Situational Awareness. Space technologies back on the Earth. **Week 7: Looking ahead. Ambition** What's next? Human Exploration of the Solar System. Robotic Exploration of the Solar System. Scientific Exploration of the Universe. Space Tourism. Getting farther and beyond: electric propulsion.		
Platform and link to course description	Open edX. There is a preview as a MOOC	https://www.edx.org/es/course/the-conquest-of-space-space-exploration-and-rocket-science	
Course description in study guide	https://aplicaciones.uc3m.es/cpa/generaFicha?est=223&asig=12781&idioma=2		
Lecturer(s)	Manuel Sanjurjo Rivo		
Extra Course information	Information relevant for selection process or for students		
Picture of course			
Final examination date and time /period	31-May-19	Examination time UTC + or -	Exam: 20 May-4 June 2019

Examination registration deadline or drop-out deadline	Examination registration before N/A No registration deadline needed. Drop- out deadline N/A No drop-out deadline needed.	
Type of examination	Continuous evaluation: 100% of the grade	
Midterm examination?	☐ **yes** ☒ **no**	Additional information on midterm exam
Previous exam papers available	☒ **yes** ☐ **no**	
Specific rules for examinations	Give details if particular rules apply like no use of calculator, watches etc	
Resit? and date	☒ **yes** ☐ **no**	Enter resit date. 17-28 June 2019
Grade release and transcript release	Grade release date	Transcript release within 1 week after grade release.

Avalaible Places	**Total number of places**	
	Interested	**(Maximum) places per university** *(either 5 per institution or maximum 30 in total)*
UPMC	☒ **yes**	5
UC LOuvain	☒ **yes**	5
EPFL	☒ **yes**	5
UC3M	☐ **yes**	N/A
Leiden	☒ **yes**	5
Wageningen	☒ **yes**	5
TU Delft	☒ **yes**	5
	☐ **yes**	Click or tap here to enter number
	☐ **yes**	Click or tap here to enter number

General information	Universidad Carlos III de Madrid (UC3M)
Date start academic year:	3-Sep-18
Semester periods:	1st from 3-Sep-18 to 27-Jan-19 Exam date: 8-23 January 2019 / Exam resit: 17-28 June 2019 2nd from 28-Jan-19 to 19-May-19 Exam: 20 May-4 June 2019 / Exam resit: TBD 17-28 June 2019
Application deadline semester 1:	10-Sep-18 or enter text
Application deadline semester 2:	15-Jan-19 or enter text
Holiday periods:	Christmas: 24 Dec 18-7 Jan 19 Easter: 15-22 Apr 19 Summer: 1 Jul-2 Sep 19
Student data required for application:	Last Name, First Name Gender Personal ID (Passport, National ID…) Birth Date Personal address Email address (that of home institution) Programme title Programme year
General web site	https://www.uc3m.es/Inicio
Virtual Exchange web site	https://www.uc3m.es/ss/Satellite/UC3MDigital/es/TextoMixta/1371226560608/European_Virtual_Ex
Virtual Exchange contact person(s) operational	Raúl Aguilera Goyo Celada Rosa Sánchez

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Virtual Exchange Email address	eve@listserv.uc3m.es
List of courses available per semester	Variable