



POLITÉCNICA

**Universidad Politécnica de Madrid**  
**School of Computer Engineering**  
**2024-25**



**BACHELOR COURSES TAUGHT IN ENGLISH**

CODE	COURSE TAUGHT IN ENGLISH	ECTS	YEAR	SEMESTER	Program	LEARNING GUIDE (CONTENT, TEACHERS...ETC.)	RESTRICTIONS	OBSERVATIONS
<b><u>BACHELOR DEGREE IN INFORMATICS (COMPUTER) ENGINEERING</u></b>								
105000002	Logic	6	1	1S	10II	<a href="#">Learning Guide Link</a>		Learning guide in Spanish
105000013	Programación I	6	1	1S	10II	<a href="#">Learning Guide Link</a>		
105000005	Calculo	6	1	2S	10II	<a href="#">Learning Guide Link</a>		
105000159	Human-Computer Interaction	6	1	2S	10II	<a href="#">Learning Guide Link</a>		
105000015	Programación II	6	1	2S	10II	<a href="#">Learning Guide Link</a>		
105000007	Probabilidades y estadística I	6	1	2S	10II	<a href="#">Learning Guide Link</a>		
105000046	Building up communications skills	3	3	1S	10II	<a href="#">Learning Guide Link</a>		
105000394	Programming project	3	3	2S	10II	<a href="#">Learning Guide Link</a>		
105000443	Programming Scalable Systems	3	4	2S	10II	<a href="#">Learning Guide Link</a>		Learning guide in Spanish
105000395	Introduction to bioinformatics and biocomputing	3	4	1S	10II	<a href="#">Learning Guide Link</a>		
105000011	English for Professional and Academic Communication	6	4	1S	10II	<a href="#">Learning Guide Link</a>		
105000011	English for Professional and Academic Communication	6	4	2S	10II	<a href="#">Learning Guide Link</a>		
105001046	Spanish for foreigners	3	3	1S	10II	<a href="#">Learning Guide Link</a>	[1]	Learning guide in Spanish
105001046	Spanish for foreigners	3	3	2S	10II	<a href="#">Learning Guide Link</a>	[1]	Learning guide in Spanish
105000045	Español Profesional Y Academico	3	3	2S	10II	<a href="#">Learning Guide Link</a>	[4]	Learning guide in Spanish
<b><u>LEARNING GUIDES OF BACHELOR COURSES TAUGHT IN SPANISH</u></b>								
<b>BACHELOR DEGREE IN COMPUTER SCIENCE</b>						<a href="#">Learning Guide Link</a>	<a href="#">General information and schedules</a>	
<b>BACHELOR DEGREE IN MATHEMATICS AND COMPUTER</b>						<a href="#">Learning Guide Link</a>	<a href="#">General information and schedules</a>	
<b>BACHELOR DEGREE IN DATA SCIENCE AND ARTIFICIAL INTELLIGENCE</b>						<a href="#">Learning Guide Link</a>	<a href="#">General information and schedules</a>	
<b>DOUBLE DEGREE IN COMPUTER SCIENCE AND BUSINESS ADMINISTRATION AND MANAGEMENT</b>						<a href="#">Learning Guide Link</a>	<a href="#">General information and schedules</a>	

**MASTER COURSES TAUGHT IN ENGLISH:  
AVAILABLE ONLY FOR MASTER STUDENTS AND UNDERGRADUATE WITH MORE THAN 180 ECTS PASSED**

[EUROPEAN MASTER DEGREE IN SOFTWARE ENGINEERING; Link for schedules and evaluations dates https://emse.fi.upm.es/en/](https://emse.fi.upm.es/en/)

103000482	Requirements Engineering	6	1	1S	10AM	<a href="#">Learning Guide Link</a>		
103000485	Software Project Management	4	1	1S	10AM	<a href="#">Learning Guide Link</a>	[2]	
103000486	Models and Methods for Process Improvement and Assessment	4	1	1S	10AM	<a href="#">Learning Guide Link</a>		
103000488	Software Metrics	4	1	1S	10AM	<a href="#">Learning Guide Link</a>		
103000489	Verification and Validation	6	1	1S	10AM	<a href="#">Learning Guide Link</a>	[2]	
103000739	Adaptative Systems	4	1	1S	10AM	<a href="#">Learning Guide Link</a>		
103001022	Deep Learning And Software Engineering	4	1	1S	10AM	<a href="#">Learning Guide Link</a>		
103001025	E-health: Promoting Active and Healthy Ageing	4	1	1S	10AM	<a href="#">Learning Guide Link</a>		
<del>103000540</del>	<del>Critical Software</del>	<del>3</del>	<del>1</del>	<del>1S</del>	<del>10AM</del>	<del><a href="#">Learning Guide Link</a></del>		Not available on 24-25
103000541	Data Mining: Data Engineering	4	1	1S	10AM	<a href="#">Learning Guide Link</a>		
103000603	Challenges for accessible computing for people with functional diversity	4	1	1S	10AM	<a href="#">Learning Guide Link</a>		
103000544	Management, Relationships and Communication in Working Groups	4	1	1S	10AM	<a href="#">Learning Guide Link</a>		
103000545	Agile Software Development: Agile Practices and Agile Usability	4	1	1S	10AM	<a href="#">Learning Guide Link</a>	[2]	
103000738	Computer Security	4	1	1S	10AM	<a href="#">Learning Guide Link</a>		
103000483	Software Design	4	1	2S	10AM	<a href="#">Learning Guide Link</a>		
103000484	Software Architecture	4	1	2S	10AM	<a href="#">Learning Guide Link</a>		
103000487	Software Quality Management	4	1	2S	10AM	<a href="#">Learning Guide Link</a>		
103000657	Correctness by Construction	6	1	2S	10AM	<a href="#">Learning Guide Link</a>		
103001023	Strategic Management & Entrepreneurship	4	1	2S	10AM	<a href="#">Learning Guide Link</a>		
103000542	Experimental Software Engineering	6	1	2S	10AM	<a href="#">Learning Guide Link</a>		
103000538	Agent Based Software Engineering	6	1	2S	10AM	<a href="#">Learning Guide Link</a>		
103000680	Fundamentals of Business Administration	4	1	2S	10AM	<a href="#">Learning Guide Link</a>		

**MASTER IN SOFTWARE AND SYSTEMS; Link for schedules and evaluations dates <https://muss.fi.upm.es/>**

103000380	Management Strategies and Non-classical Software Development Methodologies	4	1	1S	10AK	<a href="#">Learning Guide Link</a>		
103000816	Critical Software	4	1	1S	10AK	<a href="#">Learning Guide Link</a>		
103000387	Cloud Computing And Big Data Ecosystems Design	4	1	1S	10AK	<a href="#">Learning Guide Link</a>		
103000394	Scientific Method	2	2	1S	10AK	<a href="#">Learning Guide Link</a>		
103000385	Software Verification and Validation	4	1	1S	10AK	<a href="#">Learning Guide Link</a>		
103000391	Knowledge Discovery in Databases	4	1	1S	10AK	<a href="#">Learning Guide Link</a>		
103000590	Computer Security	4	1	1S	10AK	<a href="#">Learning Guide Link</a>		
103000392	Intelligent Virtual Environments: Technologies, Architectures and Applications	4	1	1S	10AK	<a href="#">Learning Guide Link</a>		
103000393	Challenges of Accessible Computing for People with Functional Diversity	4	1	1S	10AK	<a href="#">Learning Guide Link</a>		
103000394	Scientific Method	2	1	1S	10AK	<a href="#">Learning Guide Link</a>		
103000379	Experimentation in Software Engineering	4	1	2S	10AK	<a href="#">Learning Guide Link</a>		
103000740	Correctness by Construction	6	1	2S	10AK	<a href="#">Learning Guide Link</a>		
103000389	Data Mining: Data Engineering	4	1	2S	10AK	<a href="#">Learning Guide Link</a>		
103000390	Image Processing and Analysis	4	1	2S	10AK	<a href="#">Learning Guide Link</a>		

**MASTER OF SCIENCE IN ARTIFICIAL INTELLIGENCE; Link for schedules and evaluations dates <http://www.dia.fi.upm.es/masteria/>**

103000363	Programmable Biology: DNA Computing and Biocircuits Engineering	5	1	1S	10AJ	<a href="#">Learning Guide Link</a>	[2]	
103000364	Logic Programming	5	1	1S	10AJ	<a href="#">Learning Guide Link</a>	[3]	Available for undergraduate students
103000371	Biomedical Informatics	5	1	1S	10AJ	<a href="#">Learning Guide Link</a>		
103000372	Seminars	10	1	2S	10AJ	<a href="#">Learning Guide Link</a>		<b><u>Each seminar has 1.5 ECTS, except S1 and S2 that have 2.0 ECTS. The student can choose freely among all the seminars available, with the condition that the total amount of ECTS must be at least 10. Any question regarding the seminars should be send to <a href="mailto:masteria.dia@fi.upm.es">masteria.dia@fi.upm.es</a>.</u></b>

**MASTER'S IN DATA SCIENCE; Link for schedules and evaluations dates <http://www.dia.fi.upm.es/mastercd>**

103000891	Research Methodology	1,5	1	2S	10BA	<a href="#">Learning Guide Link</a>		<b>Teached the first week of the semester</b>
103000907	Time Series Data Mining	3	1	2S	10BA	<a href="#">Learning Guide Link</a>		

**MASTER'S PROGRAMME IN DIGITAL INNOVATION; Link for schedules and evaluations dates <https://www.fi.upm.es/?pagina=2759&idioma=english>**

103001004	Data Visualization	3	1	1S	10AZ	<a href="#">Learning Guide Link</a>		
103001003	Big Data	3	1	1S	10AZ	<a href="#">Learning Guide Link</a>		
103000853	Data Processes	4.5	1	1S	10AZ	<a href="#">Learning Guide Link</a>		
103000826	Machine Learning	4,5	1	1S	10AZ	<a href="#">Learning Guide Link</a>	[2]	
103000825	Statistical Data Analysis	4.5	1	1S	10AZ	<a href="#">Learning Guide Link</a>		
103000866	Massively Parallel Machine Learning	4.5	1	1S	10AZ	<a href="#">Learning Guide Link</a>		
103000854	Cloud Computing And Big Data Ecosystems Design	4.5	1	1S	10AZ	<a href="#">Learning Guide Link</a>		
103000867	Open Data And Knowledge Graphs	4.5	1	1S	10AZ	<a href="#">Learning Guide Link</a>		
103000851	Intelligent Systems	4.5	1	1S	10AZ	<a href="#">Learning Guide Link</a>		
103000836	Data Management and Knowledge in Health	4	2	1S	10AZ	<a href="#">Learning Guide Link</a>		
103000885	E Health: Promoting Active And Healthy Ageing	4,5	2	1S	10AZ	<a href="#">Learning Guide Link</a>		
103000865	Data mining and time series	3	2	1S	10AZ	<a href="#">Learning Guide Link</a>		
103000839	Complex data in health	4,5	2	1S	10AZ	<a href="#">Learning Guide Link</a>	[3]	Available for undergraduate students
103000863	Data Analysis	4,5	2	1S	10AZ	<a href="#">Learning Guide Link</a>		
<del>103000840</del>	<del>Devices and Biometric Applications for e-Health</del>	<del>4</del>	<del>2</del>	<del>1S</del>	<del>10AZ</del>	<del><a href="#">Learning Guide Link</a></del>		Not available on 24-25
103000934	Software Verification and Validation	6	1	1S	10AZ	<a href="#">Learning Guide Link</a>		
103000933	Requirements Engineering	6	1	1S	10AZ	<a href="#">Learning Guide Link</a>		
<del>103000937</del>	<del>Fundamentals of Finance</del>	<del>6</del>	<del>1</del>	<del>1S</del>	<del>10AZ</del>	<del><a href="#">Learning Guide Link</a></del>		Not available on 23-24
<del>103000938</del>	<del>Blockchain And Services For Fintech Enterprise Integration</del>	<del>5</del>	<del>1</del>	<del>1S</del>	<del>10AZ</del>	<del><a href="#">Learning Guide Link</a></del>		Not available on 23-24
103001036	Hci: Introduction And Design Methods	6	1	1S	10AZ	<a href="#">Learning Guide Link</a>		
103000871	Programming Of User Interfaces	6	1	1S	10AZ	<a href="#">Learning Guide Link</a>		
103000877	Challenges For Accessible Computing For People With Functional Diversity	4	1	1S	10AZ	<a href="#">Learning Guide Link</a>		
103000874	User Experience And Mobile Interaction	6	1	1S	10AZ	<a href="#">Learning Guide Link</a>		

103000878	Human-computer Interaction Seminars I	2	1	1S	10AZ	<a href="#">Learning Guide Link</a>		
103000890	Human-computer Interaction Seminars II	2,5	2	1S	10AZ	<a href="#">Learning Guide Link</a>		
103000880	Accessible Design Of Interactive Systems	4,5	2	1S	10AZ	<a href="#">Learning Guide Link</a>		
103000881	Adaptive Systems	4,5	2	1S	10AZ	<a href="#">Learning Guide Link</a>		
103000882	Assistive Products	4,5	2	1S	10AZ	<a href="#">Learning Guide Link</a>		
103000887	Management, Relationships And Communication Working Groups	4	2	1S	10AZ	<a href="#">Learning Guide Link</a>		
103000879	Virtual Intelligent Systems	4	2	1S	10AZ	<a href="#">Learning Guide Link</a>		
103000842	Introduction to innovation and entrepreneurship management	6	1	1S	10AZ	<a href="#">Learning Guide Link</a>	[2]	
103000848	I&E Study	6	2	1S	10AZ	<a href="#">Learning Guide Link</a>	[2]	
103000888	Programming For Data Science	5	1	2S	10AZ	<a href="#">Learning Guide Link</a>		
103000855	Data Science Seminars	4.5	1	2S	10AZ	<a href="#">Learning Guide Link</a>		
103000856	Deep Learning	3	1	2S	10AZ	<a href="#">Learning Guide Link</a>		
103000834	Graph Analysis And Social Networks	3	2	2S	10AZ	<a href="#">Learning Guide Link</a>		
103000829	Information Retrieval, Extraction And Integration	4.5	1	2S	10AZ	<a href="#">Learning Guide Link</a>		
103000859	Experimentation In Software Engineering	4.6	2	2S	10AZ	<a href="#">Learning Guide Link</a>		
103000835	Ethic/legal/social aspects in Data Science	3	1	2S	10AZ	<a href="#">Learning Guide Link</a>		
103000935	Data Mining	4	1	2S	10AZ	<a href="#">Learning Guide Link</a>		
<del>103000939</del>	<del>Seminars-On-Systems-For-Finance</del>	<del>4,5</del>	<del>1</del>	<del>2S</del>	<del>10AZ</del>	<del><a href="#">Learning Guide Link</a></del>		Not available on 23-24
<del>103000872</del>	<del>Evaluation-Of-Interactive-Systems</del>	<del>3</del>	<del>1</del>	<del>2S</del>	<del>10AZ</del>	<del><a href="#">Learning Guide Link</a></del>		Not available on 23-24
<del>103000873</del>	<del>Human-Computer-Interaction-Project</del>	<del>6</del>	<del>1</del>	<del>2S</del>	<del>10AZ</del>	<del><a href="#">Learning Guide Link</a></del>		Not available on 23-24
103000845	Entrepreneurship & Business Modelling	6	1	2S	10AZ	<a href="#">Learning Guide Link</a>	[2]	
103000843	Introduction to Technology watch and competitive intelligence	1	1	2S	10AZ	<a href="#">Learning Guide Link</a>	[2]	
103000844	I&E Seminars	5	1	2S	10AZ	<a href="#">Learning Guide Link</a>	[2]	
103000846	Launching of digital-based products and services	2	1	2S	10AZ	<a href="#">Learning Guide Link</a>	[2]	Link not available

**COURSE REQUIREMENTS OR RESTRICTIONS**

[1]	For students below A2 Spanish Level. Students with higher level, please contact with the course coordinators.	
[2]	<p>There is a quota for mobility students.                  If you want to be enrolled on this course, you should apply first on the following Office Form (link in next row and/or QR) before:                  ** AUTUMN Semester: 15th July. Open from 10th June.                  ** SPRING Semester: 31st December. Open from 11th November.</p> <p>After that, the course coordinators will accept/deny applicants before the beginning of the semester.                  Please do not include this course on your Learning Agreement until you were accepted by the course coordinators. Learning Agreements including those courses will not be signed until the approval of the course coordinators.</p>	
<p align="center"><a href="https://forms.office.com/e/VA6YeLUTWD">https://forms.office.com/e/VA6YeLUTWD</a></p>		
[3]	Available for undergraduate students	
[4]	Required at least Spanish B2 level.	