

# COURSE OUTLINE

## (1) GENERAL

<b>SCHOOL</b>	Economics, Management and Informatics		
<b>ACADEMIC UNIT</b>	Department of Informatics and Telecommunications		
<b>LEVEL OF STUDIES</b>	Postgraduate		
<b>COURSE CODE</b>		<b>SEMESTER</b>	
<b>COURSE TITLE</b>	Space Policy and Business Aspects		
<b>INDEPENDENT TEACHING ACTIVITIES</b> <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>	<b>WEEKLY TEACHING HOURS</b>	<b>CREDITS</b>	
Lectures		40%	
Personal Project (essay)		40%	
Personal Project presentation		20%	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
<b>COURSE TYPE</b> <i>general background, special background, specialised general knowledge, skills development</i>	Special background		
<b>PREREQUISITE COURSES:</b>			
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	English		
<b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>	Yes		
<b>COURSE WEBSITE (URL)</b>			

## (2) LEARNING OUTCOMES

### Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Guidelines for writing Learning Outcomes

The aim of this module is to develop an understanding of: a) the legal framework, international and national, governing space activities; b) strategic, economic and political issues around space policies; c) innovation concepts, d) key aspects of space business. As this is an evolving subject the themes discussed will address both current issues and future challenges.

Students who successfully complete the course are expected to:

- Understand the international and national legal frameworks governing space activities and their evolving nature
- Understand key issues around strategic, economic, and political aspects of space policies
- Develop and awareness of future challenges in respect to both space legal frameworks and policies
- Understand basic concepts and processes of innovation
- Understand key economic concepts in the context of space businesses
- Understand the special characteristics of the space business
- Develop an understanding of the emerging space markets
- Be able to perform basic cost and risk analysis
- Understand and be able to analyse the socio economic benefits of space business activities

### General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology  
Adapting to new situations  
Decision-making  
Working independently  
Team work  
Working in an international environment  
Working in an interdisciplinary environment  
Production of new research ideas

Project planning and management  
Respect for difference and multiculturalism  
Respect for the natural environment  
Showing social, professional and ethical responsibility and sensitivity to gender issues  
Criticism and self-criticism  
Production of free, creative and inductive thinking  
.....  
Others...  
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- Adapting to new situations
- Decision-making

- Working independently
- Working in an interdisciplinary environment
- Project planning and management
- Respect for the natural environment
- Criticism and self-criticism
- Production of free, creative and inductive thinking
- Risk-taking
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### **(3) SYLLABUS**

The module is organized in three complementary parts:

#### **Part A: Space Law and Policies**

- from the initial treaties and agreements within «United Nations Committee on the Peaceful Uses of Outer Space» to latest developments
- national space legislations: issues and cases
- global administration of outer space: the role of U.N. and other organizations
- . outer dispute settlement procedures
- space policy: strategic, economic, and political issues and future challenges
- space policy: cases

#### **Part B: Concepts of innovative entrepreneurship**

- Types of innovation
- Product life cycle
- Intellectual property and patents
- Absorptive capacity

#### **Part C: Space Business and Economics**

- Key Economics Concepts: Demand and Supply, price elasticity of demand, costs and price, value chains
- Distinguishing characteristic of Space Business: cyclical nature, linkage to defense, government as customer, destination problems, limited competition, single unit production costs
- Emerging space markets: emerging sectors, space tourism, on orbit servicing, private space exploration
- Cost and Risk Analysis Management:
- Socio-economic benefits of space activities: direct benefits, spin-offs, social and intangible benefits
- Case studies

#### (4) TEACHING and LEARNING METHODS – EVALUATION

<p style="text-align: center;"><b>DELIVERY</b> <i>Face-to-face, Distance learning, etc.</i></p>	<p>Face to face group discussions based on lectures, case studies discussion, presentation-discussion of individual project</p>																			
<p style="text-align: center;"><b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b> <i>Use of ICT in teaching, laboratory education, communication with students</i></p>	<p>e-class platform</p>																			
<p style="text-align: center;"><b>TEACHING METHODS</b> <i>The manner and methods of teaching are described in detail. Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.</i></p> <p><i>The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</i></p>	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th style="width: 60%;"><i>Activity</i></th> <th style="width: 40%;"><i>Semester workload</i></th> </tr> </thead> <tbody> <tr> <td>Lecture based discussions</td> <td>26</td> </tr> <tr> <td>Personal study</td> <td>52</td> </tr> <tr> <td>Personal project</td> <td>47</td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td>Course total</td> <td><b>125</b></td> </tr> </tbody> </table>		<i>Activity</i>	<i>Semester workload</i>	Lecture based discussions	26	Personal study	52	Personal project	47									Course total	<b>125</b>
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<p style="text-align: center;"><b>STUDENT PERFORMANCE EVALUATION</b> <i>Description of the evaluation procedure</i></p> <p><i>Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</i></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<p>Language: English</p> <p>Evaluation of final written exam (40%)-criterion is knowledge acquisition</p> <p>Evaluation of written assignment-essay on a key space business aspect (40%)-criteria: knowledge acquisition, originality, review of the literature, basic secondary data collection and presentation/analysis. Alternatively, the essay can be a part of a business plan.</p> <p>Essay presentation (20%)-criterion is knowledge acquisition and clarity of presentation</p>																			

#### (5) ATTACHED BIBLIOGRAPHY

<p>- Suggested bibliography: - Related academic journals:</p> <p>Tronchetti, F., 2013, Fundamentals of Space Law and Policy. Springer Briefs in Space Development. Springer: New York</p> <p>Gurtuna, O., 2013, Fundamentals of Space Business and Economics. Springer Briefs in Space Development. Springer: New</p>
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European Commission (2005), Oslo Manual, OECD,  
<https://www.oecd.org/sti/inno/2367580.pdf>

Technovation

International Journal of Space Technology Management and  
Innovation (IJSTMI)

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