Freie Universität Bozen
Libera Università di Bolzano
Università Liedia de Bulsan

Syllabus
Course description

Course title	**Project Economics and Management**
Course code	47500
Scientific sector	ING-IND/17, ING-IND/35
Degree	Master in Industrial and Mechanical Engineering
Semester	I
Year	/
Academic year	2017/2018
Credits	10 ECTS (5+5)
Modular	Yes

Total lecturing hours	56 (28 + 28)
Total lab hours	
Total exercise hours	36 (18 + 18)
Attendance	Extremely recommended
Prerequisites	none
Course page	https://next.unibz.it/en/faculties/sciencetechnology/master-industrial-mechanical-engineering/course-offering/

Specific educational objectives	The course is one of the basics of the scientific area of Industrial Engineering. The course gives a general overview of the main scientific contents. During the course, the presented theoretical topics will be integrated through targeted application-oriented exercises and through a real game-based business simulation. The learning objectives are to introduce engineering students in the fundamentals of project management. Specifically, it will deal with the subjects of project planning, project scheduling and project monitoring. In addiction, students will be introduced to organizational projects. They will learn how project, programme, and portfolio management could help companies to gain competitive advantages and to manage organisational changes.

Module 1	**Project Management**
Lecturer	Patrick Dallasega
Scientific sector of the lecturer	ING-IND/17
Teaching language	English
Office hours	See on timetable
Teaching assistant ***(if any)***	-
Office hours	-

List of topics covered	1. Introduction to Project Management 2. Project planning a) The Work Breakdown Structure (WBS) b) The Organizational Breakdown Structure (OBS) c) Planning of resources 3. Project scheduling methods a) Network diagram techniques (AOA, AON) b) The Critical Path Method (CPM) c) The Program Evaluation Review Technique (PERT) d) Methods for scheduling repetitive construction projects e) Methods for scheduling non-repetitive construction projects 4. Project progress measurement and forecast a) Progress measurement b) The Earned Value Analysis (EVA) c) The Earned Value Performance Measurement (EVPM) 5. Construction Project Management a) The Last Planner System (LPS) b) The Location Based Management System (LBMS) c) Building Information Modeling supporting Construction Management 6. Project Risk Management a) Methodologies for project risk identification b) Methodologies for project risk evaluation 7. Exercises a) Exercises on AOA, AON b) Exercise on CPM, PERT c) Exercise on EVA d) Exercises using Microsoft Project e) Last Planner Simulation game f) Excursion to a local company working in the field of Engineer-to-Order (ETO)
Teaching format	Frontal lectures and exercises in computer lab

Module 2	**Project Economics**
Lecturer	Adrianus Jan Gijsbert Silvius
Scientific sector of the lecturer	ING-IND/35
Teaching language	English
Office hours	See on timetable
Teaching assistant *(if any)*	-
Office hours	-
List of topics covered (Module 2 ING-IND/35**)**	1. Project Management Skills & Challenges for People & Organization Development in the modern SMEs. The organizational context of project, programme and portfolio management (interfaces to other organizational structures) a) Overview of Project Management standards

	b) Concepts c) Project, Programme, Portfolio and Governance d) Environment e) Key components of a project f) Project Mangement data and information, major deliverables and business documents g) The environment in which projects operate h) Project Manager role and competencies i) Program Manager role and competencies j) Portfolio Manager role and competencies 2. (Multi)Project-Management & Portfolio Management Techniques a) PPPM-definition : Project, Programme and Portfolio Management b) PPP Processes c) Corporate Governance and PPP Governance 3. Project Types, Approaches and Rating Methods a) Project types and life cycle b) How to manage different project types 4. Project Financing and KPIs a) Project Management Metrics b) Performance scorecards c) Understanding and using performance metrics 5. Project Controlling & Reviews Exercises: Exercise on Programme Management and Portfolio
Teaching format	Frontal lectures and exercises in computer lab

Learning outcomes	<u>Basic knowledge</u> The Engineering students know the basic and most common methodologies of Project Management (Planning, Scheduling and Monitoring). <u>Practical application</u> Students will be able to apply theoretical concepts by means of exercises and case studies. By means of exercises performed in the computer laboratory the student will be able to use Project Management methodologies in practice. <u>Soft skills</u> Knowledge is transferred by frontal teaching (theory part) as well as by doing exercises in the classroom and in the computer lab (practical exercises). Within the simulation game students learn how to communicate and interact in

	a project team.
Assessment	Written exam with review questions and exercises
Assessment language	English
Evaluation criteria and criteria for awarding marks	The final grade is calculated from the results of the written exam. The theoretical part counts 60% and the exercise part counts 40% of the final grade.

Required readings	Lecture notes and documents for exercise will be available on the reserve collections
Supplementary readings	1. "Project Management for Construction" by Hendrickson http://www.ce.cmu.edu/pmbook/ 2. Meredith, J. and Mantel, S., (2000) "Project Management: A managerial Approach", J. Wiley & Sons New York 3. De Marco, A. (2011). "Project Management for Facility Constructions", Springer Science & Business Media. 4. Cantamessa, M., Cobos, E., Rafele, C., (2007) "Il Project Management – Un approccio sistemico alla gestione dei progetti", ISEDI De Agostini. 5. Pmi lexicon pm terms PMI.org 6. Project Management: A Systems Approach to Planning, Scheduling, and Controlling 11th Edition by Harold R. Kerzner (Author) 7. Project Management – Competency Development Framework 8. www.iso.org ISO21500:2013 – ISO21502-5 9. www.pmi.org Project Management standard - PMBOK® GUIDE V Edition 10. http://www.ipma-usa.org/ IPMA_ICB_4_0_WEB