

AY 2016-2017



UNIVERSITY
OF TRENTO - Italy

**Doctoral School of
Civil
Environmental and
Mechanical
Engineering**

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[BASICS OF PROJECT MANAGEMENT]

LECTURE SYLLABUS

- **Course description**
- **Lesson Plan**
- **Class schedule**
- **Assessment method**

Module 2016-2017 – Basics of Project Management

Leader: dott. Rudi Tranquillini (rudi.tranquillini@unitn.it)
Timing: June-July 2017
Prerequisites: none

AIMS

The aim of this course is to introduce the basics of Project Management techniques following the PMBOK framework adapting them to the typical issues generated by the implementation of research projects. The main goal is equipping students with a first but exhaustive view of project management methodologies based on the 10 knowledge areas suggested by PMBok® framework. This module delivers the ideal preparatory knowledge to attend the following "H2020 Proposal Writing" course.

LECTURE SYLLABUS

The course explores all key issues in planning, deploying, implementing and assessing research projects mainly for preparing students for effectively writing research proposals and successively manage research projects, accordingly to the high standards requirements asked by the European Commission in H2020. The course is based on the PMBOK guide with some practical activities focused on SCOPE (WBS and other techniques), TIME (PSN Diagrams, RBS and CPM methodologies) and COST (plan, estimate, determine budget and control).

The module begins with first overview of the discipline and continues with the analysis of each area of knowledge provided by the PMBOK approach. For the three selected areas (Scope, Time and Cost) a series of practical exercises will be provided and in particular, about:

- Group Decision-Making Techniques (Brainstorming and Delphi method)
- Bottom-Up activities estimating methods and creation of the Resource Breakdown Structure, its design and representation;
- Presentation of Gantt chart methodology;
- Identification of project's Critical Paths and use of the PERT chart representation;
- Design of the Precedence Diagram Method and determination of Project Schedule Network diagrams
- Estimating activity duration methods (parametric approaches and triangular distributions)

The main result of the course will consequently be to learn basics of project management with the view to setting up EU proposals. The course duration is of 40h normally divided into 10 lessons delivered into two weeks. The knowledge dispensed during the course will give a good support for tackling the certification exam in Project Management Professional promoted by the Project Management Institute, editor of the Project Management Body Of Knowledge (PMBOK®). The topics covered by the course will be the following:

Basics of Project Management

- Project management PMBOK approach: rationale and logical framework;
- Project management techniques: Gantt, Pert, CPM, etc.
- Some nods to risk management and quality assurance;
- Practical administrative tasks and financial reporting in a Research Organisation;
- Network management and organisational mechanisms.

PMBOK framework and the 10 knowledge areas of management

Integration, scope, time, cost, quality, human resources, communication, risk, procurement and stakeholders.

Recommended readings

- H2020 Online Manual
 - http://ec.europa.eu/research/participants/docs/h2020-funding-guide/index_en.htm
 - <http://ec.europa.eu/programmes/horizon2020/en/how-get-funding>
- A guide to the project management Body of knowledge – (PMBOK® Guide) – Fifth Edition
- Slides distributed during the course

Expected results

On completion of the course, students should:

- Be equipped with a set of tools and frameworks that enable to effectively contribute at writing research funding proposals;
- Understand the need for appropriate governance structures and control systems in the delivery of project objectives.
- To be able to be an effective member of project's research teams
- Be equipped with a series of tools for supporting the preparation of a PMP certification exam.

Structure: Ten 4-hour sessions

Attendance: 70% compulsory

Lesson Plan and class schedule

| October 2016 | Time | Duration | Room | Content |
|-----------------------|--------------|----------|-------------------|--|
| Tuesday, 20 June 2017 | 08:30 -12:30 | 4 h | Not yet available | Course presentation and PMBok® Framework |
| Friday, 23 June 2017 | 08:30 -12:30 | 4 h | Not yet available | Integration Management |
| Tuesday, 27 June 2017 | 08:30 -12:30 | 4 h | Not yet available | Scope Management |
| Friday, 30 June 2017 | 08:30 -12:30 | 4 h | Not yet available | Time Management |
| Tuesday, 04 July 2017 | 08:30 -12:30 | 4 h | Not yet available | Cost Management |
| Friday, 07 July 2017 | 08:30 -12:30 | 4 h | Not yet available | Quality Management |
| Tuesday, 11 July 2017 | 08:30 -12:30 | 4 h | Not yet available | Human resources Management |
| Friday, 14 July 2017 | 08:30 -12:30 | 4 h | Not yet available | Communication Management |
| Tuesday, 18 July 2017 | 08:30 -12:30 | 4 h | Not yet available | Risk Management |
| Friday, 21 July 2017 | 08:30 -12:30 | 4 h | Not yet available | Procurement Management |
| Written test | | | | |
| Friday, 28 July 2017 | 09:00 -11:00 | | | Multiple Choice Questionnaire + 3 practical exercises |

ASSESSMENT

| FINAL ASSESMENT | CRITERIA |
|---|--|
| <ol style="list-style-type: none"> MCQ - Multiple Choice Questionnaire (30 questions) (<i>weight 45%</i>) PE - 3 Practical Exercises executed during the course (<i>weight 45%</i>) CP - Class participation (<i>weight 10%</i>) <p>N.B. Although the assessment system will rate the performance using a 100-point scale the final rating will consist in a synthetic judgment: PASSING (60 to 100 cum laude) or NON PASSING (0 to 59).</p> | <ul style="list-style-type: none"> MCQ = basic knowledge of PMBOK approach and concepts and main definitions. (<i>weight 45%</i>) PE = knowledge of basic practical concepts (Critical Path Chart, Gantt Chart. etc. – (<i>weight 25%</i>). Capability to adequately describe objectives, tasks and deliverables linked to the scientific idea and foreseen critical issues organising all information in a coherent picture (Logical Framework Matrix, Project Cycle management) (<i>weight 20%</i>) CP = frequency and quality of the interventions made, capability to grasp fundamental concepts, ability to analyse and critically evaluate several topics. (<i>weight 10%</i>) |