							Document Code
	Universitas Negeri Surabaya **Faculty of Engineering,** **Building Engineering Education Undergraduate Study Program**						

SEMESTER LEARNING PLAN

Courses		CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Project Planning and Control		8320503162	Compulsory Study Program Subjects	T=3	P=0	ECTS=4.77	4	April 27, 2023

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
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Learning model	**Project Based Learning**

Program Learning Outcomes (PLO)	**PLO study program which is charged to the course**	
	Program Objectives (PO)	
	PO - 1	Students are able to have knowledge about engineering planning and project control to be used in carrying out civil engineering work in the field.
	PO - 2	Students are able to plan the use of project resources (man, money) to achieve project cost, schedule and quality targets.
	PO - 3	Students are able to create and carry out construction project administration systems at all stages/processes of project implementation honestly using information technology and computers.
	PO - 4	Students are able to control all resources involved in project implementation to ensure that planning runs as it should and the results can be used as material for consideration in making decisions on further work.
	PLO-PO Matrix	

P.O
PO-1
PO-2
PO-3
PO-4

PO Matrix at the end of each learning stage (Sub-PO)

P.O	Week															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PO-1																
PO-2																
PO-3																
PO-4																

Short Course Description	This course contains the project planning process which consists of manually preparing a project schedule in the form of a Gantt Chart, Line Diagram, and Network Planning manually (AOA and AON methods) or using scheduling software such as Microsoft Project or Primavera Project Planner, followed by planning, allocation, equal distribution of project resource use, and techniques that can be used to control project costs and time. Learning is carried out using a constructivist paradigm by emphasizing learning at the student center.

References	**Main :**	
	1. Suryanto HS, Mas, Dani Hasan. 2006. Manajemen Proyek II . Surabaya: Unipres Unesa. 2. Soeharto Iman. 2001. Manajemen Proyek dari Konseptual Sampai Operasional Jilid 2 . Jakarta: Erlangga. 3. Widiasanti Irika, Lenggogeni. 2013. Manajemen Konstruksi . Bandung: Remaja Rosdakarya. 4. Suhendi Edi. 2009. Panduan Mengelola Proyek dengan Microsoft Office Project 2007 . Bandung:	
	Supporters:	

						1. Nugraha Paulus, Natan Ishak, Sutjipto R. 1985. Manajemen Proyek Konstruksi 2 . Surabaya: Kartika Yudha.
						2. Husen Abrar. 2011. Manajemen Proyek . Yogyakarta: Andi.
						3. Yrama Widya. Journal of Construction Engineering and Management (ASCE)

Supporting lecturer	Dr. Suprapto, S.Pd., M.T. Dr. Gde Agus Yudha Prawira Adistana, S.T., M.T. Desy Ratna Arthaningtyas, S.T., M.T.

Week-	Final abilities of each learning stage (Sub-PO)	Evaluation		Help Learning, Learning methods, Student Assignments, [Estimated time]		Learning materials [References]	Assessment Weight (%)
		Indicator	**Criteria & Form**	**Offline (offline)**	**Online (online)**		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Understand the functions and types of project scheduling	Mention the functions and types of project scheduling	**Criteria:** Can mention the functions and types of project scheduling properly and correctly **Form of Assessment** : Participatory Activities, Tests	Lectures, discussions and questions and answers 3 X 50	Lectures, discussions and questions and answers 3 X 50	**Material:** Functions and types of project scheduling **Reader:** *Suryanto HS, Mas, Dani Hasan. 2006. Project Management II. Surabaya: Unipres Unesa.*	2%
2	Understand and create project schedules in the form of Gantt Charts and Line Diagrams	Can create a project schedule in the form of a Gantt Chart	**Criteria:** Can create a project schedule in the form of a Gantt Chart properly, completely and correctly **Form of Assessment** : Assessment of Project Results / Product Assessment, Practices / Performance	Lectures, and making a project schedule in the form of a 3 X 50 Gantt Chart	Lectures, and making a project schedule in the form of a 3 X 50 Gantt Chart	**Material:** project schedule in the form of a Gantt Chart **Reader:** *Widiasanti Irika, Lenggogeni. 2013. Construction Management. Bandung: Rosdakarya Youth.* **Material:** project schedule in the form of a Gantt Chart **Reader:** *Suryanto HS, Mas, Dani Hasan. 2006. Project Management II. Surabaya: Unipres Unesa.*	2%
3	Understand and draw Network Planning for project scheduling	Can draw Network Planning for project scheduling	**Criteria:** Good marks if answered correctly **Form of Assessment** : Assessment of Project Results / Product Assessment, Practices / Performance	Lecture, practice making 3 X 50 network planning drawings	Lecture, practice making 3 X 50 network planning drawings	**Material:** network planning **Bibliography:** *Suryanto HS, Mas, Dani Hasan. 2006. Project Management II. Surabaya: Unipres Unesa.* **Material:** network planning **Reference:** *Widiasanti Irika, Lenggogeni. 2013. Construction Management. Bandung: Rosdakarya Youth.*	2%

No	Ability	Indicator	Criteria & Form of Assessment	Learning Method	Learning Method	Material / References	Weight
4	Understand the project schedule using the CPM Method	Can draw CPM schedule creation	**Criteria:** able to identify project schedule characteristics using the CPM method correctly	Lectures, practice in making a 3 X 50 CPM schedule	Lectures, practice in making a 3 X 50 CPM schedule	**Material:** CPM method **Reader:** *Soeharto Iman. 2001. Project Management from Conceptual to Operational Volume 2. Jakarta: Erlangga.* **Material:** CPM scheduling method **Reader:** *Widiasanti Irika, Lenggogeni. 2013. Construction Management. Bandung: Rosdakarya Youth.* **Material:** network planning **Bibliography:** *Suryanto HS, Mas, Dani Hasan. 2006. Project Management II. Surabaya: Unipres Unesa.*	2%
5	Able to create project schedules using the CPM method	Can create project schedules using the CPM Method	**Criteria:** create a project schedule using the CPM method properly, completely and correctly **Form of Assessment** : Assessment of Project Results / Product Assessment, Practices / Performance	Project for creating 3 X 50 CPM scheduling	Project for creating 3 X 50 CPM scheduling	**Material:** CPM method **Reader:** *Suryanto HS, Mas, Dani Hasan. 2006. Project Management II. Surabaya: Unipres Unesa.* **Material:** network planning **Reference:** *Soeharto Iman. 2001. Project Management from Conceptual to Operational Volume 2. Jakarta: Erlangga.* **Material:** CPM method **Reader:** *Widiasanti Irika, Lenggogeni. 2013. Construction Management. Bandung: Rosdakarya Youth.*	2%

6	Understand the project schedule using the PERT Method	Can understand the project schedule using the PERT method	**Criteria:** Able to identify project schedule characteristics using the PERT method correctly	Lectures, practice making schedules using the PERT 3 X 50 method	Lectures, practice making schedules using the PERT 3 X 50 method	**Material:** PERT method **Reader:** *Suryanto HS, Mas, Dani Hasan. 2006. Project Management II. Surabaya: Unipres Unesa.* **Material:** PERT method **Reference:** *Husen Abrar. 2011. Project Management. Yogyakarta: Andi.*	2%
7	Able to create a project schedule using the PERT method	Can create project schedules using the PDM method	**Criteria:** Create a project schedule using the PERT method properly, completely and correctly **Form of Assessment** : Project Results Assessment / Product Assessment	Making schedules using the PERT 3 X 50 Method	Making schedules using the PERT 3 X 50 Method	**Material:** PERT method **Reader:** *Suryanto HS, Mas, Dani Hasan. 2006. Project Management II. Surabaya: Unipres Unesa.* **Material:** PERT method **Reader:** *Widiasanti Irika, Lenggogeni. 2013. Construction Management. Bandung: Rosdakarya Youth.*	2%
8	Sub Summative Exam	Mastery of scheduling with CPM and PERT	**Criteria:** Able to plan project schedules using CPM or PERT properly and correctly	Sub Summative Exam 3 X 50			32%
9	Understand the project schedule using the PDM Method	Can understand the project schedule using the PDM Method	**Criteria:** Able to identify project schedule characteristics using the PDM method correctly	Lectures, practice making schedules using the PDM 3 X 50 method	Lectures, practice making schedules using the PDM 3 X 50 method	**Material:** Precedence diagram method **References:** *Suryanto HS, Mas, Dani Hasan. 2006. Project Management II. Surabaya: Unipres Unesa.* **Material:** Precedence diagram method **Reference:** *Soeharto Iman. 2001. Project Management from Conceptual to Operational Volume 2. Jakarta: Erlangga.*	2%

			Criteria:				
10	Able to create S Curves for scheduling and Able to understand Project Reports	1. Can create S curves for project schedules 2. Can create weekly project reports	**Criteria:** 1. Create an S Curve for the project schedule properly, completely and correctly 2. Make weekly project reports properly, completely and correctly **Form of Assessment** : Project Results Assessment / Product Assessment	Creation of S curve and 3 X 50 project report	Creation of S curve and 3 X 50 project report	**Material:** S Curvas **Literature:** *Widiasanti Irika, Lenggogeni. 2013. Construction Management. Bandung: Rosdakarya Youth.* **Material:** S curve **Reference:** *Husen Abrar. 2011. Project Management. Yogyakarta: Andi.*	2%
11	Understand the basics of scheduling with MS Project or Primavera Project Planner	Master the basics of scheduling with MS Project or Primavera Project Planner	**Criteria:** Good marks if answered correctly	Lectures, computer scheduling exercises with MS project 3 X 50	Lectures, computer scheduling exercises with MS project 3 X 50	**Material:** Ms Project **Reader:** *Suhendi Edi. 2009. Guide to Managing Projects with Microsoft Office Project 2007. Bandung:*	2%
12	Able to create project schedules with MS Project or Primavera Project Planner	Can create project schedules with MS Project or Primavera Project Planner	**Criteria:** Project scheduling with MS Project or Primavera Project Planner is carried out well, completely and correctly **Form of Assessment** : Project Results Assessment / Product Assessment	Presentation or performance of project scheduling with MS Project or Primavera Project Planner 3 X 50	Presentation or performance of project scheduling with MS Project or Primavera Project Planner 3 X 50	**Material:** Ms Project **Reader:** *Suhendi Edi. 2009. Guide to Managing Projects with Microsoft Office Project 2007. Bandung:*	2%

No							
13	Can calculate labor requirements based on the duration of work and be able to allocate resources	1. Can calculate labor requirements based on the duration of work 2. Able to allocate limited or unlimited resources	**Criteria:** 1. Can determine the number of workers based on the specified work duration 2. Allocation of limited and unlimited resources is carried out properly and correctly according to allocation rules **Form of Assessment** : Assessment of Project Results / Product Assessment, Practices / Performance	Lectures, practice solving problems in cases of 3 X 50 labor requirements	Lectures, practice solving problems in cases of 3 X 50 labor requirements	**Material:** Labor Productivity **References:** *Suryanto HS, Mas, Dani Hasan. 2006. Project Management II. Surabaya: Unipres Unesa.* **Material:** Labor Productivity **Reference:** *Soeharto Iman. 2001. Project Management from Conceptual to Operational Volume 2. Jakarta: Erlangga.* **Material:** Labor allocation **Reader:** *Suryanto HS, Mas, Dani Hasan. 2006. Project Management II. Surabaya: Unipres Unesa.* **Material:** Labor allocation **Reference:** *Soeharto Iman. 2001. Project Management from Conceptual to Operational Volume 2. Jakarta: Erlangga.*	2%
14	Understand how to control project costs and time using the Earned Value Method		**Criteria:** 1. Able to calculate the value of the cost performance index and schedule performance index 2. Able to predict project completion costs 3. Able to predict project completion time **Form of Assessment** : Practice/Performance, Test	Lectures, discussions, practice in solving cases using the 3 X 50 Earned Value Method	Lectures, discussions, practice in solving cases using the 3 X 50 Earned Value Method	**Material:** result value method **References:** *Widiasanti Irika, Lenggogeni. 2013. Construction Management. Bandung: Rosdakarya Youth.*	2%
15	Understand methods of accelerating project completion	Can accelerate project completion time using the TCTO method	**Criteria:** Can calculate optimal acceleration costs properly and correctly **Form of Assessment** : Practice/Performance, Test	Lectures, discussions, TCTO 3 X 50 case study exercises	Lectures, discussions, TCTO 3 X 50 case study exercises	**Material:** TCTO **Reader:** *Yrama Widya. Journal of Construction Engineering and Management (ASCE)*	2%
16	Summative Exam	Understand how to control project costs and time	**Criteria:** Able to apply project cost and time control methods properly and correctly	Summative Exam 100			40%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	1%
2.	Project Results Assessment / Product Assessment	10%
3.	Practice / Performance	6%
4.	Test	3%
		20%

Notes

1. **Learning Outcomes of Study Program Graduates (PLO - Study Program)** are the abilities possessed by each Study Program graduate which are the internalization of attitudes, mastery of knowledge and skills according to the level of their study program obtained through the learning process.
2. **The PLO imposed on courses** are several learning outcomes of study program graduates (CPL-Study Program) which are used for the formation/development of a course consisting of aspects of attitude, general skills, special skills and knowledge.
3. **Program Objectives (PO)** are abilities that are specifically described from the PLO assigned to a course, and are specific to the study material or learning materials for that course.
4. **Subject Sub-PO (Sub-PO)** is a capability that is specifically described from the PO that can be measured or observed and is the final ability that is planned at each learning stage, and is specific to the learning material of the course.
5. **Indicators for assessing** abilities in the process and student learning outcomes are specific and measurable statements that identify the abilities or performance of student learning outcomes accompanied by evidence.
6. **Assessment Criteria** are benchmarks used as a measure or measure of learning achievement in assessments based on predetermined indicators. Assessment criteria are guidelines for assessors so that assessments are consistent and unbiased. Criteria can be quantitative or qualitative.
7. **Forms of assessment:** test and non-test.
8. **Forms of learning:** Lecture, Response, Tutorial, Seminar or equivalent, Practicum, Studio Practice, Workshop Practice, Field Practice, Research, Community Service and/or other equivalent forms of learning.
9. **Learning Methods:** Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning, and other equivalent methods.
10. **Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
11. **The assessment weight** is the percentage of assessment of each sub-PO achievement whose size is proportional to the level of difficulty of achieving that sub-PO, and the total is 100%.
12. TM=Face to face, PT=Structured assignments, BM=Independent study.