	Universitas Negeri Surabaya Vocational Faculty, D4 Transportation Study Program	Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Transportation Economics	3930102033	Transportation Economics	T=2	P=0	ECTS=3.18	4	July 16, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
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Learning model	**Case Studies**	
Program Learning Outcomes (PLO)	**PLO study program that is charged to the course**	
	PLO-7	Able to carry out work and entrepreneurship in the field of land transportation engineering technology professionally.
	PLO-9	Able to apply the principles of mechanics, mathematics and engineering concepts to the technical design process, drawing measurement results, and designing in the field of land transportation engineering technology
	Program Objectives (PO)	
	PO - 1	Able to carry out work and entrepreneurship in the field of land transportation engineering technology professionally. Able to apply logical, critical, innovative, quality and measurable thinking in identifying, implementing and evaluating independently and coordinating groups to solve technical and non-technical problems and able to communicate verbally and in writing. Able to apply the principles of mechanics, mathematics and engineering concepts to the technical design process, drawing measurement results, and design in the field of land transportation engineering technology. Able to carry out design work, implementation, supervision, documentation of work in the field of land transportation engineering technology according to applicable standards by prioritizing principles occupational and environmental security and safety systems (SMK3L). Able to internalize ethics, norms and laws in carrying out work. Transportation Economics
	PLO-PO Matrix	

P.O	PLO-7	PLO-9
PO-1		

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																

Short Course Description	The transportation economics course studies the principles of analysis and application of engineering economic concepts in transportation infrastructure investment with the aim of participants being able to understand cost and benefit parameters, such as investment costs, operation and maintenance, time value, vehicle operating costs, and other economic quantities. paying attention to the accounting aspects that need to be carried out in the study of transportation infrastructure, as well as applying several investment feasibility study methods. Learning is carried out by direct learning in the form of lectures followed by exercises so that students are skilled in calculations.
References	**Main :**

1. Adisamita, R. 2010. Dasar-dasar Ekonomi Transportasi. Graha Ilmu. Yogyakarta
2. Button, J.K., (1993), Transport Economics, 2nd Edition , Cambridge University Press, United Kingdom
3. Fowkes, A.S., (1991), The Use of Hypothetical Preference Survey Techniques to Drive Monetary Valuation for Investment Appraisal , 23 rd UTSG Annual Conference, January, University of Nottingham England .
4. Kamaluddin, H. Rustian. 2003. Ekonomi Transportasi – Karakteristik, Teori dan Kebijakan. Ghalia Indonesia. Jakarta
5. Lembaga Afiliasi Penelitian dan Industri (LAPI) ITB, (1996), Laporan Akhir Studi Perhitungan Biaya Operasi Kendaraan–PT. Jasa Marga , ITB .
6. Ristono, A., Puryani. 2011. Ekonomi Teknik. Graha Ilmu. Yogyakarta
7. Stubs, P.C., Tyson W.J., dan Dalvi, M.Q. (1980), Transport Economics , George Allen and Unwin (Publisher) Ltd., London.

Supporters:	
Supporting lecturer	Dr. Ir. H. Dadang Supriyatno, M.T. Purwo Mahardi, S.T., M.Sc. R. Endro Wibisono, S.Pd., 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	Students are able to explain the meaning of engineering economics and transportation economics	1.Explain the meaning of economic decision theory 2.Explain the history and economic procedures of transportation 3.Explain the basic concepts of economic analysis	**Criteria:** Full marks are obtained if you do all the questions correctly **Form of Assessment** : Participatory Activities, Tests	Lectures, discussions and questions and answers 2 X 50			20%
2	Students are able to calculate cash flow	1.Drawing Cash Flow Diagrams 2.Classify Cash Flow elements 3.Make cash flow analysis conclusions (Cash Flow Statement)	**Criteria:** Full marks are obtained if the application works well as required	Lectures, discussions and questions and answers 2 X 50			0%
3	Students are able to calculate cash flow	1.Drawing Cash Flow Diagrams 2.Classify Cash Flow elements 3.Make cash flow analysis conclusions (Cash Flow Statement)	**Criteria:** Full marks are obtained if the application works well as required	Lectures, discussions and questions and answers 2 X 50			0%
4	Students are able to calculate the time value of money and equivalence	1.Analyze return on capital considerations 2.Calculating the time value of money concept 3.Explain the meaning of equivalence 4.Calculating the equivalent of the flow of financial funds 5.Calculating equivalents	**Criteria:** Full marks are obtained if the application works well as required	Lectures, discussions and questions and answers 2 X 50			0%

5	Students are able to calculate the time value of money and equivalence	1. Analyze return on capital considerations 2. Calculating the time value of money concept 3. Explain the meaning of equivalence 4. Calculating the equivalent of the flow of financial funds 5. Calculating equivalents	**Criteria:** Full marks are obtained if the application works well as required	Lectures, discussions and questions and answers 2 X 50			0%
6	Students are able to explain the concept of interest and calculate the value of interest	1. Explain the meaning of flowers and types of flowers 2. Calculates simple interest and discrete interest 3. Calculate continuous interest, nominal interest and effective interest	**Criteria:** Full marks are obtained if you do all the questions correctly	Lectures, discussions and questions and answers 2 X 50			0%
7	Students are able to explain the concept of interest and calculate the value of interest	1. Explain the meaning of interest and types of interest 2. Calculate simple interest and discrete interest 3. Calculate continuous interest, nominal interest and effective interest	**Criteria:** Full marks are obtained if you do all the questions correctly	Lectures, discussions and questions and answers 2 X 50			0%
8	UTS	-	**Criteria:** -	- 2 X 50			0%
9	Students are able to calculate interest factors	1. Explain the types of interest factors 2. Calculates equal payment-series compound amount factor 3. Calculating the equal payment-series sinking fund factor 4. Calculate the equal payment-series capital recovery factor 5. Calculating the equal payment-series present worth factor 6. Calculating the uniform gradient series factor	**Criteria:** Full marks are obtained if you do all the questions correctly	Lectures, discussions and questions and answers 2 X 50			0%

10	Students are able to calculate vehicle operating costs with several models	1. Calculating PCI model BOK 2. Calculating the Jasa Marga model BOK 3. Calculating the BOK of the ND Lea model	**Criteria:** Full marks are obtained if you do all the questions correctly	Lectures, discussions and questions and answers 2 X 50			0%
11	Students are able to analyze engineering economics for the transportation sector	1. Explain the concept of cost 2. Analyzing the Simple Payback Period (SPP) method 3. Analyzing the Rate of Return (ROR) method	**Criteria:** Full marks are obtained if you do all the questions correctly	Lectures, discussions and questions and answers 2 X 50			0%
12	Students are able to carry out present value analysis	1. Explain the types of PV 2. Explain PV applications 3. Calculate the PV value with same period analysis 4. Calculating the PV value using unequal period analysis 5. Calculating the PV value with infinite period analysis	**Criteria:** Full marks are obtained if you do all the questions correctly	Lectures, discussions and questions and answers 2 X 50			0%
13	Students are able to carry out future value analysis and BCR analysis	1. Explain the meaning and concept of future value analysis and BCR 2. Perform BCR calculations for transportation projects	**Criteria:** Full marks are obtained if you do all the questions correctly	Lectures, discussions and questions and answers 2 X 50			0%
14	Students are able to carry out Multi Criteria Analysis	1. Explain the meaning of MCA and its use 2. Explain the MCA calculation method 3. Perform calculations using the MCA method	**Criteria:** Full marks are obtained if you do all the questions correctly	Lectures, discussions and questions and answers 2 X 50			0%
15	Students are able to carry out Hierarchy Process Analysis	1. Explain the meaning of AHP and its use 2. Explain the AHP calculation method 3. Perform calculations using the AHP method	**Criteria:** Full marks are obtained if you do all the questions correctly	Lectures, discussions and questions and answers 2 X 50			0%
16							0%

Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
1.	Participatory Activities	10%
2.	Test	10%
		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** ability in the process and student learning outcomes are specific and measurable statements that identify the ability 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.