	Universitas Negeri Surabaya Faculty of Economics and Business Islamic Economics Undergraduate Study Program	Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight	SEMESTER	Compilation Date
Economic math	6020203035	Compulsory Study Program Subjects	T=3 P=0 ECTS=4.77	1	July 17, 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-5	Mastering theoretical concepts in the fields of Islamic Economics, Islamic Business and Islamic Finance in general and specifically to solve problems procedurally in accordance with the scope of work.

Program Objectives (PO)

PO - 1	Able to make the right decisions based on information and data analysis (CPL1)
PO - 2	Able to work well independently (CPL2)
PO - 3	Have the ability to increase knowledge and competence (CPL3)

PLO-PO Matrix

P.O	PLO-5
PO-1	
PO-2	✔
PO-3	

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			✔	✔	✔	✔	✔						✔	✔	✔	

Short Course Description: This course contains basic mathematical concepts related to micro and macroeconomic theory. The learning method used is case based learning so that students are able to analyze series and apply them in economics, identify the elements and forms of linear functions, construct linear functions, calculate the value of linear function variables, apply linear functions in microeconomics, apply functions linear in macroeconomics, analyzing forms of non-linear functions and applying them in economics, analyzing differential rules and applying them in economics, and analyzing integral principles and applying them in economics

References

Main :

1. Jacques, Ian. 2018. Mathematics for Economics and Business. 9th Edition. United Kingdom: Pearson Education Limited
2. Kalangi, Josep Bintang. 2018. Matematika Ekonomi & Bisnis. 3rd Edition. Jakarta: Salemba Empat.
3. Susanti, R. D. 2019. Matematika penerapannya dalam ekonomi (Vol. 1). UMMPress.
4. Bumulo, H., dan Mursito, D. 2022. Matematika untuk Ekonomi dan Aplikasinya. Malang: Bayumedia Publishing
5. Hoy, M., Livernois, J., McKenna, C., Rees, R., & Stengos, T. 2022. Mathematics for economics. MIT press.

Supporters:

Supporting lecturer: Ramdani, S.H.I., M.E.
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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	Analyzing series and their application in economics	1.1.1 Able to identify geometric series 2.1.2 Able to calculate and analyze business development	**Criteria:** Assessment rubric **Form of Assessment** : Participatory Activities	Lectures and Case Studies (Case Based Learning) Student Assignment: Solve geometric series and arithmetical series problems through the case example of 3 X 50	3 X 50	**Material:** Measuring Series **References:** *Kalangi, Josep Bintang. 2014.Mathematics, Economics & Business, 3rd edition. Jakarta:Salemba Empat4. Sarjono, Haryadi. and Sanny, Lim 2012. Applications of Mathematics for Business and Management. Jakarta: Salemba Empat* **Material:** Geometric Series **Bibliography:** *Jacques, Ian. 2018. Mathematics for Economics and Business. 9th Edition. United Kingdom: Pearson Education Limited*	4%
2	Analyzing series and their application in economics	1.2.1 Able to identify arithmetic series 2.2.1 Able to calculate and analyze compound interest and population growth	**Criteria:** Assessment rubric **Form of Assessment** : Participatory Activities	Lectures and Case Studies (Case Based Learning) Student Assignment: Analyze cases of business development and population growth using the 3 X 50 series concept	3 X 50	**Material:** Arithmetic Series **Bibliography:** *Kalangi, Josep Bintang. 2014.Mathematics, Economics & Business, 3rd edition. Jakarta:Salemba Empat4. Sarjono, Haryadi. and Sanny, Lim 2012. Applications of Mathematics for Business and Management. Jakarta: Salemba Empat* **Material:** Arithmetic Series **Bibliography:** *Jacques, Ian. 2018. Mathematics for Economics and Business. 9th Edition. United Kingdom: Pearson Education Limited*	4%

3	Identifying the elements and forms of linear functions, compiling linear functions, calculating the values of linear function variables.	1.3.1 Able to identify types of functions 2.3.2 Be able to explain the form of linear functions 3.3.3 Able to compose linear function equations	**Criteria:** Assessment rubric **Form of Assessment** : Participatory Activities	Lectures and Case Studies (Case Based Learning) 3 X 50	3 X 50	**Material:** Linear Functions **Reader:** *Kalangi, Josep Bintang. 2014.Mathematics, Economics & Business, 3rd edition. Jakarta:Salemba Empat4. Sarjono, Haryadi. and Sanny, Lim 2012. Applications of Mathematics for Business and Management. Jakarta: Salemba Empat* **Material:** Linear Functions **Reference:** *Jacques, Ian. 2018. Mathematics for Economics and Business. 9th Edition. United Kingdom: Pearson Education Limited*	5%
4	Applying linear functions in microeconomics	1.4.1 Able to construct demand and supply functions 2.4.2 Able to calculate market equilibrium prices and quantities	**Criteria:** Assessment rubric **Form of Assessment** : Portfolio Assessment	Lectures and Case Studies (Case Based Learning) Student Assignment: Calculate the demand, supply and balance functions through the case example of 3 X 50	3 X 50	**Material:** Application of Linear Functions in Microeconomics **References:** *Kalangi, Josep Bintang. 2014.Mathematics, Economics & Business, 3rd edition. Jakarta:Salemba Empat4. Sarjono, Haryadi. and Sanny, Lim 2012. Applications of Mathematics for Business and Management. Jakarta: Salemba Empat* **Material:** Application of Linear Functions in Microeconomics **References:** *Jacques, Ian. 2018. Mathematics for Economics and Business. 9th Edition. United Kingdom: Pearson Education Limited*	3%

5	Applying linear functions in microeconomics	1.5.1 Able to calculate and analyze market balance after taxes and subsidies 2.5.2 Able to calculate and analyze cost, revenue, profit, loss and breakeven functions	**Criteria:** Assessment rubric **Form of Assessment** : Participatory Activities	Lectures and Case Studies (Case Based Learning) Student Assignment: Calculate market balance after taxes and subsidies using the case example of 3 X 50	3 X 50	**Material:** Application of Linear Functions in Microeconomics **References:** *Kalangi, Josep Bintang. 2014.Mathematics, Economics & Business, 3rd edition. Jakarta:Salemba Empat4. Sarjono, Haryadi. and Sanny, Lim 2012. Applications of Mathematics for Business and Management. Jakarta: Salemba Empat* **Material:** Application of Linear Functions in Microeconomics **References:** *Jacques, Ian. 2018. Mathematics for Economics and Business. 9th Edition. United Kingdom: Pearson Education Limited*	5%
6	Applying linear functions in macroeconomics	6.1 Able to calculate and analyze the functions of consumption, savings and investment	**Form of Assessment** : Portfolio Assessment	Lectures and Case Studies (Case Based Learning) Student Assignment: Calculate the function of consumption, savings and investment through case examples in macroeconomics 3 X 50	3 X 50	**Material:** Application of Linear Functions in Consumption, Savings and Investment Functions **References:** *Kalangi, Josep Bintang. 2014.Mathematics, Economics & Business, 3rd edition. Jakarta:Salemba Empat4. Sarjono, Haryadi. and Sanny, Lim 2012. Applications of Mathematics for Business and Management. Jakarta: Salemba Empat* **Material:** Application of Linear Functions in Consumption, Savings and Investment Functions **References:** *Jacques, Ian. 2018. Mathematics for Economics and Business. 9th Edition. United Kingdom: Pearson Education Limited*	7%

7	Applying linear functions in macroeconomics	1.7.1 Able to calculate and analyze transfer, tax and import functions 2.7.2 Able to calculate and analyze national income	**Criteria:** Assessment rubric **Form of Assessment** : Participatory Activities	Lectures and Case Studies (Case Based Learning) Student Assignment: Analyze national income using the concept of the 3 X 50 linear function	3 X 50	**Material:** Application of Linear Functions in Transfer, Tax, Import and National Income Functions **References:** *Kalangi, Josep Bintang. 2014.Mathematics, Economics & Business, 3rd edition. Jakarta:Salemba Empat4. Sarjono, Haryadi. and Sanny, Lim 2012. Applications of Mathematics for Business and Management. Jakarta: Salemba Empat* **Material:** Application of Linear Functions in Transfer, Tax, Import and National Income Functions **References:** *Jacques, Ian. 2018. Mathematics for Economics and Business. 9th Edition. United Kingdom: Pearson Education Limited*	5%
8	MIDTERM EXAM		**Form of Assessment** : Test	3 X 50			15%
9	Analyze the form of non-linear functions and their application in economics	1.9.1 Able to analyze non-linear functions 2.9.2. Able to analyze non-linear supply and demand functions	**Criteria:** Assessment rubric **Form of Assessment** : Portfolio Assessment	Lectures and Problem Based Learning Student Assignment: Calculate market balance before and after taxes and subsidies using the concept of 3 X 50 non-linear functions	3 X 50	**Material:** Forms of non-linear functions; Non-linear supply and demand functions **References:** *Kalangi, Josep Bintang. 2014.Mathematics, Economics & Business, 3rd edition. Jakarta:Salemba Empat4. Sarjono, Haryadi. and Sanny, Lim 2012. Applications of Mathematics for Business and Management. Jakarta: Salemba Empat* **Material:** Forms of non-linear functions; Non-linear supply and demand functions **References:** *Jacques, Ian. 2018. Mathematics for Economics and Business. 9th Edition. United Kingdom: Pearson Education Limited*	3%

10	Analyze the form of non-linear functions and their application in economics	1. 10.1 Able to calculate and analyze market balance for non-linear functions 2. 10.2 Be able to calculate and analyze market balance after taxes and subsidies for non-linear functions 3. 10.3 Able to calculate and analyze cost, revenue, BEP functions for non-linear functions	**Criteria:** Assessment rubric **Form of Assessment** : Participatory Activities	Lectures and Problem Based Learning Student Assignment: Analyze the production cost function using the concept of the 3 X 50 non-linear function	3 X 50	**Material:** Non-Linear Market Balance, Non-Linear Market Balance after Taxes and Subsidies, Cost, Revenue Functions, BEP for non-linear functions **Reader:** *Kalangi, Josep Bintang. 2014.Mathematics, Economics & Business, 3rd edition. Jakarta:Salemba Empat4. Sarjono, Haryadi. and Sanny, Lim 2012. Applications of Mathematics for Business and Management. Jakarta: Salemba Empat* **Material:** Non-Linear Market Balance, Non-Linear Market Balance after Taxes and Subsidies, Cost Function, Revenue, BEP for non-linear functions **References:** *Jacques, Ian. 2018. Mathematics for Economics and Business. 9th Edition. United Kingdom: Pearson Education Limited*	6%
11	Analyzing the differential rule and its application in economics	1. 11.1 Able to apply Differential rules 2. 11.2 Describe the elasticity of demand, supply and production	**Criteria:** Assessment rubric **Form of Assessment** : Participatory Activities	Lectures and Case Studies (Case Based Learning) Student Assignment: Calculate the elasticity of demand, supply and production using the 3 X 50 differential concept	3 X 50	**Material:** Differentials, Elasticity of demand, supply and production **References:** *Kalangi, Josep Bintang. 2014.Mathematics, Economics & Business, 3rd edition. Jakarta:Salemba Empat4. Sarjono, Haryadi. and Sanny, Lim 2012. Applications of Mathematics for Business and Management. Jakarta: Salemba Empat* **Material:** Differential, Elasticity of demand, supply and production **References:** *Jacques, Ian. 2018. Mathematics for Economics and Business. 9th Edition. United Kingdom: Pearson Education Limited*	6%

12	Analyzing the differential rule and its application in economics	1.12.1 Describe marginal cost, marginal revenue and marginal product 2.12. 2 Able to calculate optimum value (maximum profit, minimum total cost, maximum revenue)	**Criteria:** assessment rubric **Form of Assessment** : Participatory Activities	Lectures and Case Studies (Case Based Learning) Student Assignment: Calculate marginal costs, marginal revenues and marginal products using the concept of partial differential 3 X 50	3 X 50	**Material:** Marginal cost, marginal revenue and marginal product; Optimum value (maximum profit, minimum total cost, maximum revenue) **Reference:** *Kalangi, Josep Bintang. 2014.Mathematics, Economics & Business, 3rd edition. Jakarta:Salemba Empat4. Sarjono, Haryadi. and Sanny, Lim 2012. Applications of Mathematics for Business and Management. Jakarta: Salemba Empat* **Material:** Marginal cost, marginal revenue and marginal product; Optimum value (maximum profit, minimum total cost, maximum revenue) **References:** *Jacques, Ian. 2018. Mathematics for Economics and Business. 9th Edition. United Kingdom: Pearson Education Limited*	5%
13	Analyzing the differential rule and its application in economics	1.13.1 Able to identify partial differential rules 2.13.2 Able to calculate and analyze maximum and minimum functions 3.13.3 Be able to calculate the Lagrange function	**Criteria:** assessment rubric **Form of Assessment** : Participatory Activities	Lectures and Case Studies (Case Based Learning) Student Assignment: Analyze the maximum profit and minimum cost function using the 3 X 50 partial differential concept	3 X 50	**Material:** Partial differential rule; Maximum and minimum functions; Lagrange Function **Library:** *Kalangi, Josep Bintang. 2014.Mathematics, Economics & Business, 3rd edition. Jakarta:Salemba Empat4. Sarjono, Haryadi. and Sanny, Lim 2012. Applications of Mathematics for Business and Management. Jakarta: Salemba Empat* **Material:** Partial differential rule; Maximum and minimum functions; Lagrange Function **Bibliography:** *Jacques, Ian. 2018. Mathematics for Economics and Business. 9th Edition. United Kingdom: Pearson Education Limited*	5%

14	Analyzing the differential rule and its application in economics	1. 14.1 Able to calculate and analyze cross elasticity 2. 14.2 Able to calculate and analyze the maximum profit of 2 types of goods 3. 14.3 Able to calculate and analyze the balance of production and consumption	**Criteria:** assessment rubric **Form of Assessment** : Portfolio Assessment	Lectures and Case Studies (Case Based Learning) Student Assignment: Analyze the balance of production and consumption using the concept of partial differential 3 X 50	3 X 50	**Material:** Cross Elasticity; Maximum profit from 2 types of goods, balance of production and consumption. **Library:** *Kalangi, Josep Bintang. 2014.Mathematics, Economics & Business, 3rd edition. Jakarta:Salemba Empat4. Sarjono, Haryadi. and Sanny, Lim 2012. Applications of Mathematics for Business and Management. Jakarta: Salemba Empat* **Material:** Cross Elasticity; Maximum profit of 2 types of goods, balance of production and consumption. **Reference:** *Jacques, Ian. 2018. Mathematics for Economics and Business. 9th Edition. United Kingdom: Pearson Education Limited*	7%
15	Analyze integral rules and apply them in economics	1. 15.1 .Able to apply integral rules 2. 15.2 .Able to calculate and analyze consumer and producer surplus	**Criteria:** Assessment rubric **Form of Assessment** : Participatory Activities	Lectures and Problem Based Learning Student Assignment: Calculate consumer and producer surplus using the 3 X 50 integral concept	3 X 50	**Material:** Integral, consumer and producer surplus **References:** *Kalangi, Josep Bintang. 2014.Mathematics, Economics & Business, 3rd edition. Jakarta:Salemba Empat4. Sarjono, Haryadi. and Sanny, Lim 2012. Applications of Mathematics for Business and Management. Jakarta: Salemba Empat* **Material:** Integral, consumer and producer surplus **References:** *Jacques, Ian. 2018. Mathematics for Economics and Business. 9th Edition. United Kingdom: Pearson Education Limited*	5%
16	FINAL EXAMS		**Criteria:** Assessment rubric **Form of Assessment** : Test	3 X 50			15%

Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
1.	Participatory Activities	50%
2.	Portfolio Assessment	20%
3.	Test	30%
		100%

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.