| | Universitas Negeri Surabaya<br>Faculty of Engineering<br>Civil Engineering Undergraduate Study Program | | Document Code |
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## SEMESTER LEARNING PLAN

| Courses | | CODE | Course Family | Credit Weight | | | SEMESTER | Compilation Date |
|---|---|---|---|---|---|---|---|---|
| Situation Mapping | | 2220102144 | | T=1 | P=1 | ECTS=3.18 | 2 | July 18, 2024 |
| **AUTHORIZATION** | | **SP Developer** | | **Course Cluster Coordinator** | | | **Study Program Coordinator** | |
| | | ...................................... | | ...................................... | | | Yogie Risdianto, S.T., M.T. | |

| Learning model | **Project Based Learning** |
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| **Program Learning Outcomes (PLO)** | **PLO study program that is charged to the course** |
| | **Program Objectives (PO)** |
| | **PLO-PO Matrix** |
| | P.O |
| | **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 |

| Short Course Description | Students are able to understand azimuth and coordinates; determining the position of points on the field using a polygon, binding to the front, binding to the back at a horizontal angle using a theodolite; understand situation mapping. |
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| References | **Main :** |
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1. Wongsotjitro, S. 1993. Ilmu Ukur Tanah . Yogyakarta: Penerbit Kanisius.
2. Mansur Muhamadi, 1987. Ilmu Ukur Tanah I. Surabaya: Jurusan Teknik Sipil ITS
3. Zulfahmi Amir, 1988. Dasar-Dasar Pengukuran Teristris dan Pemetaan Situasi. Padang: Jurusan Teknik Sipil FT Universitas Andalas
4. Takasaki, M dkk. 1983. Pengukuran Topografi dan Teknik Pemetaan . Jakarta: Penerbit PT. Pradnya Paramita.
5. Ridwan, M. 2015. Pengukuran Horisontal dan Pemetaan Situasi. Penerbit Unipres, Unesa

| | **Supporters:** |
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| | |
| **Supporting lecturer** | Satriana Fitri Mustika Sari, S.T., M.T.<br>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) |

| | | | **Criteria:** | | | | |
|---|---|---|---|---|---|---|---|
| 1 | Able to determine azimuth and point coordinates | 1. Determine the azimuth of two fixed points 2. Determine the azimuth from the initial azimuth 3. Determine the coordinates of the points | **Criteria:** Full marks are obtained if the image azimuth angle is correct, the value of the azimuth angle and the distance between two points remain correct | Lectures, discussions, questions and answers and practical demonstrations in the 3 X 50 field | | | 0% |
| 2 | Able to determine azimuth and point coordinates | 1. Determine the azimuth of two fixed points 2. Determine the azimuth from the initial azimuth 3. Determine the coordinates of the points | **Criteria:** Full marks are obtained if the azimuth angle image is correct and the azimuth angle value is correct | Lectures, discussions, questions and answers and practical demonstrations in the 3 X 50 field | | | 0% |
| 3 | Able to determine azimuth and point coordinates | 1. Determine the azimuth of two fixed points 2. Determine the azimuth from the initial azimuth 3. Determine the coordinates of the points | **Criteria:** Full marks are obtained if the azimuth angle image is correct and the azimuth angle value is correct | Lectures, discussions, questions and answers and practical demonstrations in the 3 X 50 field | | | 0% |
| 4 | Able to determine azimuth and point coordinates | 1. Determine the azimuth of two fixed points 2. Determine the azimuth from the initial azimuth 3. Determine the coordinates of the points | **Criteria:** Full marks are obtained if the azimuth angle image is correct and the azimuth angle value is correct | Lectures, discussions, questions and answers and practical demonstrations in the 3 X 50 field | | | 0% |
| 5 | Able to determine the coordinates of closed polygon points | 1. Determine the azimuth 2. Determine the difference in abscissa (DX) 3. Determine the difference in ordinates (DY) 4. Determine the coordinates of the point | **Criteria:** 1.The full value is obtained if the coordinates of the points of the polygon are closed and 2.The writing and completeness of the report is correct | Lectures, discussions, questions and answers and practical demonstrations in the 3 X 50 field | | | 0% |
| 6 | Able to determine the coordinates of closed polygon points | 1. Determine the azimuth 2. Determine the difference in abscissa (DX) 3. Determine the difference in ordinates (DY) 4. Determine the coordinates of the point | **Criteria:** 1.The full value is obtained if the coordinates of the points of the polygon are closed and 2.The writing and completeness of the report is correct | Lectures, discussions, questions and answers and practical demonstrations in the 3 X 50 field | | | 0% |
| 7 | Able to determine the coordinates of closed polygon points | 1. Determine the azimuth 2. Determine the difference in abscissa (DX) 3. Determine the difference in ordinates (DY) 4. Determine the coordinates of the point | **Criteria:** 1.The full value is obtained if the coordinates of the points of the polygon are closed and 2.The writing and completeness of the report is correct | Lectures, discussions, questions and answers and practical demonstrations in the 3 X 50 field | | | 0% |
| 8 | UTS | - | | - 2 X 50 | | | 0% |

| 9 | Able to determine the coordinates of open polygon points | 1. Determine the azimuth 2. Determine the difference in abscissa (DX) 3. Determine the difference in ordinates (DY) 4. Determine the coordinates of the point | **Criteria:** 1.The full value is obtained if the coordinates of the points of the polygon are open and 2.The writing and completeness of the report is correct | Lectures, discussions, questions and answers and practical demonstrations in the 3 X 50 field | | | 0% |
|---|---|---|---|---|---|---|---|
| 10 | Able to determine the coordinates of open polygon points | 1. Determine the azimuth 2. Determine the difference in abscissa (DX) 3. Determine the difference in ordinates (DY) 4. Determine the coordinates of the point | **Criteria:** 1.The full value is obtained if the coordinates of the points of the polygon are open and 2.The writing and completeness of the report is correct | Lectures, discussions, questions and answers and practical demonstrations in the 3 X 50 field | | | 0% |
| 11 | Able to determine point coordinates using the Front Binding method | 1. Determine the azimuth 2. Determine the difference in abscissa (DX) 3. Determine the difference in ordinates (DY) 4. Determine the coordinates of the point | **Criteria:** 1.The full value is obtained if the coordinates of the points of the front binding and 2.The writing and completeness of the report is correct | Lectures, discussions, questions and answers and practical demonstrations in the 3 X 50 field | | | 0% |
| 12 | Able to determine point coordinates using the Backward Binding method: Collins | 1. Determine the azimuth 2. Determine the coordinates of the assistance point, namely point H 3. Determine the coordinates of the point you are looking for | **Criteria:** 1.Full value is obtained if the coordinates of the point of binding are backward and 2.The writing and completeness of the report is correct | Lectures, discussions, questions and answers and practical demonstrations in the 3 X 50 field | | | 0% |
| 13 | Able to determine point coordinates using the Backward Binding method: Cassini | 1. Determine the azimuth 2. Determine the coordinates of the assistance points, namely point D and point E 3. Determine the coordinates of the point you are looking for | **Criteria:** 1.Full value is obtained if the coordinates of the point of binding are backward and 2.The writing and completeness of the report is correct | Lectures, discussions, questions and answers and practical demonstrations in the 3 X 50 field | | | 0% |

| 14 | Able to determine basic framework points, detail points and situation mapping contours | 1. Determine the basic framework points by means of: closed polygon, open polygon, binding to the front and binding to the back 2. Determine the detailed points by means of: perpendicular coordinates, polar coordinates and trilateration 3. Determine the contour lines by means of radial, profile, path and raster (square) | **Criteria:** Full marks are obtained if the situation mapping image at a certain scale matches the original form. | Lectures, discussions, questions and answers and practical demonstrations in the 3 X 50 field | | | 0% |
|---|---|---|---|---|---|---|---|
| 15 | Able to determine basic framework points, detail points and situation mapping contours | 1. Determine the basic framework points by means of: closed polygon, open polygon, binding to the front and binding to the back 2. Determine the detailed points by means of: perpendicular coordinates, polar coordinates and trilateration 3. Determine the contour lines by means of radial, profile, path and raster (square) | **Criteria:** Full marks are obtained if the situation mapping image at a certain scale matches the original form. | Lectures, discussions, questions and answers and practical demonstrations in the 3 X 50 field | | | 0% |
| 16 | | | | | | | 0% |

<u>Evaluation Percentage Reca</u>**p: Project Based Learning**

| No | Evaluation | Percentage |
|---|---|---|
| | | 0% |

**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.