


## Urban and Regional Infrastructure

|  |                                                                                                                                                                         | <b>SEMESTER LEARNING PLAN</b>                                                                                                                                                                                                                                                                                                                      |                                    |                            |                      |
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|                                                                                   |                                                                                                                                                                         | <b>DEPARTMENT: URBAN AND REGIONAL PLANNING</b>                                                                                                                                                                                                                                                                                                     |                                    |                            |                      |
|                                                                                   |                                                                                                                                                                         | <b>FACULTY: CIVIL, PLANNING, AND EARTH</b>                                                                                                                                                                                                                                                                                                         |                                    |                            |                      |
| <b>COURSES NAME</b>                                                               | <b>URBAN AND REGIONAL INFRASTRUCTURE</b>                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                    |                                    |                            |                      |
| <b>COURSES CODE</b>                                                               | <b>DK184402</b>                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                    |                                    |                            |                      |
| <b>SEMESTER</b>                                                                   | <b>IV</b>                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                    |                                    |                            |                      |
| <b>CREDITS</b>                                                                    | <b>4/ 6,40</b>                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                    |                                    |                            |                      |
| <b>LECTURER</b>                                                                   | <b>Dr. Ir. Eko Budi Santoso, Lic.rer.reg</b>                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                    |                                    |                            |                      |
|                                                                                   | <b>Ema Umilia, ST, MT</b>                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                    |                                    |                            |                      |
|                                                                                   | <b>Ketut Dewi Martha Erli H, ST, MT</b>                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                    |                                    |                            |                      |
| <b>STUDY MATERIALS</b>                                                            | Projection, forecasting & visionformulation - scenarios                                                                                                                 | Concept of Infrascture                                                                                                                                                                                                                                                                                                                             | Standard Service of Infrastructure | Supply and Demand Analysis | Scenario Formulation |
| <b>PROGRAM LEARNING OUTCOME (PLO)</b>                                             |                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                    |                                    |                            |                      |
| <b>SPESIFIC KNOWLEDGE</b>                                                         | 1.1                                                                                                                                                                     | Able to understand and apply the theoretical concept of urban and regional planning in the aspects of urban studies, regional studies, spatial science, data science & computer application, socio-political, environmental management, built environment design, infrastructure and transportation system, coastal studies, management, economics |                                    |                            |                      |
| <b>SPESIFIC SKILLS</b>                                                            | 2.3                                                                                                                                                                     | Able to analyze the spatial characteristics of urban, regional and coastal area through the linkage between of spatial and aspatial aspects to provide information as the basis for planning and modelling                                                                                                                                         |                                    |                            |                      |
| <b>COURSE LEARNING OUTCOME (CLO)</b>                                              |                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                    |                                    |                            |                      |
| <b>SPESIFIC KNOWLEDGE</b>                                                         | Students are able to apply the concept of infrastructure development, engineering and infrastructure service standard and formulation of infrastructure supply scenario |                                                                                                                                                                                                                                                                                                                                                    |                                    |                            |                      |
| <b>SPESIFIC SKILLS</b>                                                            | 1. Ability to explain basic principles and concepts of infrastructure systems                                                                                           |                                                                                                                                                                                                                                                                                                                                                    |                                    |                            |                      |
|                                                                                   | 2. Students are able to explain about the challenges and opportunities of infrastructure development                                                                    |                                                                                                                                                                                                                                                                                                                                                    |                                    |                            |                      |

|                       |                                                                                                                                                                                                                                                                                                                     |       |       |       |       |       |       |       |       |       |        |        |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
|                       | 3. Students are able to apply the standard of management and infrastructure provision in the development of region and city covering electrical infrastructure, telecommunication, water and sanitation system, garbage system, drainage system, energy infrastructure and transportation infrastructure.           |       |       |       |       |       |       |       |       |       |        |        |
|                       | 4. Students are able to explain the principles of infrastructure development for coastal and island areas                                                                                                                                                                                                           |       |       |       |       |       |       |       |       |       |        |        |
|                       | 5. Students are able to explain the principles of infrastructure development for rural / agropolitan areas                                                                                                                                                                                                          |       |       |       |       |       |       |       |       |       |        |        |
|                       | 6. Students are able to explain the principles of infrastructure development for industrial and mining areas                                                                                                                                                                                                        |       |       |       |       |       |       |       |       |       |        |        |
| <b>MAP OF PLO-CLO</b> | CLO                                                                                                                                                                                                                                                                                                                 | PLO-1 | PLO-2 | PLO-3 | PLO-4 | PLO-5 | PLO-6 | PLO-7 | PLO-8 | PLO-9 | PLO-10 | PLO-11 |
|                       | CPMK-1. Students are able to apply the concepts of infrastructure development, engineering and infrastructure service standards as well as formulation of infrastructure provision scenarios                                                                                                                        | 1     |       |       |       |       |       |       |       |       |        |        |
|                       | CPMK-2. Able to explain the basic principles and concepts of infrastructure systems                                                                                                                                                                                                                                 | 1     |       |       |       |       |       |       |       |       |        |        |
|                       | CPMK-3. Students are able to explain the challenges and opportunities of infrastructure development                                                                                                                                                                                                                 | 1     |       |       |       |       |       |       |       |       |        |        |
|                       | CPMK-4. Students are able to apply management standards and infrastructure provision in regional and urban development including electricity infrastructure, telecommunications, clean water and sanitation systems, solid waste systems, drainage systems, energy infrastructure and transportation infrastructure |       |       |       |       |       | 1     |       |       |       |        |        |
|                       | CPMK-5. Students are able to think logically and systematically to make the right decisions in the                                                                                                                                                                                                                  |       |       |       |       |       | 1     |       |       |       |        |        |

|               |                                                                                                                                                                                                                                               |                                                          |                                     |                            |                      |  |  |  |  |  |  |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-------------------------------------|----------------------------|----------------------|--|--|--|--|--|--|
|               | development of regional and urban infrastructure                                                                                                                                                                                              |                                                          |                                     |                            |                      |  |  |  |  |  |  |
| <b>MODULE</b> |                                                                                                                                                                                                                                               |                                                          |                                     |                            |                      |  |  |  |  |  |  |
| 1             | Scope of infrastructure and its interrelationship in the embodiment of space structure                                                                                                                                                        | Infrastructure Concept                                   |                                     |                            |                      |  |  |  |  |  |  |
|               |                                                                                                                                                                                                                                               | 1390                                                     |                                     |                            |                      |  |  |  |  |  |  |
| 2             | Challenges and opportunities for regional infrastructure development                                                                                                                                                                          | Infrastructure Concept                                   |                                     |                            |                      |  |  |  |  |  |  |
|               |                                                                                                                                                                                                                                               | 1250                                                     |                                     |                            |                      |  |  |  |  |  |  |
| 3             | Infrastructure in the development of the region and the city includes electricity infrastructure, telecommunications, water and sanitation systems, waste systems, drainage systems, energy infrastructure and transportation infrastructure. | Projection, forecasting & vision formulation - scenarios | Standard of infrastructure services | Supply and Demand Analysis |                      |  |  |  |  |  |  |
|               |                                                                                                                                                                                                                                               | 1680                                                     | 1680                                | 1680                       |                      |  |  |  |  |  |  |
| 4             | Infrastructure of coastal areas and islands                                                                                                                                                                                                   | Projection, forecasting & vision formulation - scenarios | Standard of infrastructure services | Supply and Demand Analysis | Scenario Formulation |  |  |  |  |  |  |
|               |                                                                                                                                                                                                                                               | 160                                                      | 160                                 | 160                        | 160                  |  |  |  |  |  |  |
| 5             | Infrastruktur wilayah pedesaan/agropolitan<br>Infrastructure of rural / agropolitan area                                                                                                                                                      | Projection, forecasting & vision formulation - scenarios | Standard of infrastructure services | Supply and Demand Analysis | Scenario Formulation |  |  |  |  |  |  |
|               |                                                                                                                                                                                                                                               | 160                                                      | 160                                 | 160                        | 160                  |  |  |  |  |  |  |
| 6             | Infrastructure of industrial and mining areas                                                                                                                                                                                                 | Projection, forecasting & vision formulation - scenarios | Standard of infrastructure services | Supply and Demand Analysis | Scenario Formulation |  |  |  |  |  |  |

**URBAN AND REGIONAL INFRASTRUCTURE COURSE LEARNING PLAN**  
**EVEN SEMESTER OF ACADEMIC YEAR 2021–2022**

| Week   | Learning achievement In Course                                                                    | Module Learning Outcome                                                                                                           | Module                                                                                    | Learning Outcome                                                                            | Scope                                                                 | Learning Methods | Course Duration | Modes of Delivery   | Grading Policy      | Score (%) |
|--------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|------------------|-----------------|---------------------|---------------------|-----------|
| 1      | 2                                                                                                 | 3                                                                                                                                 | 4                                                                                         | 5                                                                                           | 6                                                                     | 7                | 8               | 9                   | 10                  | 11        |
| Week 1 | Ability to explain basic principles and concepts of infrastructure systems                        | Students are able to understand the scope and challenges and opportunities in the development of regional and city infrastructure | The scope of infrastructure and its interrelationships in the embodiment of the structure | Students know the plan of lecturing                                                         | Explanation of lecture framework, task implementation, and evaluation | M1               | 140             | Lecture, Discussion | Individual Liveness |           |
|        | Students are able to explain about the challenges and opportunities of infrastructure development |                                                                                                                                   | Challenges and opportunities for regional infrastructure development                      | Students are able to understand the Role of Infrastructure in Regional and City Development | The Role of Infrastructure in Regional and City Development           | M1               | 250             | Lecture, Discussion | Individual Liveness |           |

| Week   | Learning achievement In Course                                                                                                                 | Module Learning Outcome                                                 | Module                                                                                                                                                    | Learning Outcome                                                                                                         | Scope                                                                                | Learning Methods | Course Duration | Modes of Delivery                           | Grading Policy                            | Score (%) |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|------------------|-----------------|---------------------------------------------|-------------------------------------------|-----------|
| 1      | 2                                                                                                                                              | 3                                                                       | 4                                                                                                                                                         | 5                                                                                                                        | 6                                                                                    | 7                | 8               | 9                                           | 10                                        | 11        |
|        |                                                                                                                                                |                                                                         |                                                                                                                                                           | Students are able to understand the Issues, Challenges and Opportunities of Regional and City Infrastructure Development | Issues, Challenges and Opportunities for Infrastructure Development Areas and cities | M1, M2, M3       | 250             | Lecture, Discussion                         | Individual Liveliness                     |           |
| Week 2 | Students are able to apply the standard of management and infrastructure provision in the development of region and city covering electricity, | Students understand and the management and provision of electricity and | Infrastructure in the development of the region and the city includes electricity infrastructure, telecommunications, water and sanitation systems, waste | Students understand and the management and provision of electricity                                                      | Management and Supply of Utilities of Electricity Network (Electricity)              | M1, M2, M3       | 320             | Lecture, Discussion, Case Study, Assessment | Individual Liveliness, Group Presentation | 20%       |

| Week   | Learning achievement In Course                                                                                                            | Module Learning Outcome    | Module                                                                              | Learning Outcome                                                          | Scope                                                                     | Learning Methods | Course Duration | Modes of Delivery                           | Grading Policy                            | Score (%) |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------|------------------|-----------------|---------------------------------------------|-------------------------------------------|-----------|
| 1      | 2                                                                                                                                         | 3                          | 4                                                                                   | 5                                                                         | 6                                                                         | 7                | 8               | 9                                           | 10                                        | 11        |
|        | telecommunication, water and sanitation system, garbage system, drainage system, energy infrastructure and transportation infrastructure. | telecommunication networks | systems, drainage systems, energy infrastructure and transportation infrastructure. | network                                                                   |                                                                           |                  |                 |                                             |                                           |           |
|        |                                                                                                                                           |                            |                                                                                     | Students understand the management and provision of the telephone network | Management and Supply of Telephone Network Utilities (Telecommunications) | M1, M2, M3       | 320             | Lecture, Discussion, Case Study, Assessment | Individual Liveliness, Group Presentation |           |
| Week 3 | Students are able to apply the standard of                                                                                                | Students understand        | Infrastructure in the development of                                                | Students understand                                                       | Management and Utilities Supply for clean                                 | M1, M2, M3       | 320             | Lecture, Discussion, Case                   | Individual Liveliness                     |           |

| Week | Learning achievement In Course                                                                                                                                                                                                                 | Module Learning Outcome                                                         | Module                                                                                                                                                                                                   | Learning Outcome                                             | Scope                                         | Learning Methods | Course Duration | Modes of Delivery                | Grading Policy          | Score (%) |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------------|------------------|-----------------|----------------------------------|-------------------------|-----------|
| 1    | 2                                                                                                                                                                                                                                              | 3                                                                               | 4                                                                                                                                                                                                        | 5                                                            | 6                                             | 7                | 8               | 9                                | 10                      | 11        |
|      | management and infrastructure provision in the development of region and city covering electricity, telecommunication, water and sanitation system, garbage system, drainage system, energy infrastructure and transportation infrastructure . | and the management and provision of clean water, drinking water and sanitation. | the region and the city includes electricity infrastructure, telecommunications, water and sanitation systems, waste systems, drainage systems, energy infrastructure and transportation infrastructure. | and the management and supply of clean water, drinking water | water and drinking water                      |                  |                 | Study, Assessment                | ss, Group Presentation  |           |
|      |                                                                                                                                                                                                                                                |                                                                                 |                                                                                                                                                                                                          | Students understand the management                           | Management and Supply of Sanitation Utilities | M1, M2, M3       | 320             | Lecture, Discussion, Case Study, | Individual Livelihoods, |           |

| Week   | Learning achievement In Course                                                                                                                                                                                                                        | Module Learning Outcome                                                                                           | Module                                                                                                                                                                                                                                        | Learning Outcome                                              | Scope                                       | Learning Methods | Course Duration | Modes of Delivery                           | Grading Policy                             | Score (%) |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------|------------------|-----------------|---------------------------------------------|--------------------------------------------|-----------|
| 1      | 2                                                                                                                                                                                                                                                     | 3                                                                                                                 | 4                                                                                                                                                                                                                                             | 5                                                             | 6                                           | 7                | 8               | 9                                           | 10                                         | 11        |
|        |                                                                                                                                                                                                                                                       |                                                                                                                   |                                                                                                                                                                                                                                               | ntand provision of sanitation                                 |                                             |                  |                 | Assessment                                  | Group Presentation                         |           |
| Week 4 | Students are able to apply the standard of management and infrastructure provision in the development of region and city covering electricity, telecommunication, water and sanitation system, garbage system, drainage system, energy infrastructure | Students understand and the management and supply of drainage, sewerage, sewage systems and fire-fighting systems | Infrastructure in the development of the region and the city includes electricity infrastructure, telecommunications, water and sanitation systems, waste systems, drainage systems, energy infrastructure and transportation infrastructure. | Students understand and the management and supply of drainage | Management and Supply of Drainage Utilities | M1, M2, M3       | 160             | Lecture, Discussion, Case Study, Assessment | Individual Liveline ss, Group Presentation |           |



| Week | Learning achievement In Course      | Module Learning Outcome | Module | Learning Outcome                                                      | Scope                                                                    | Learning Methods | Course Duration | Modes of Delivery                           | Grading Policy                             | Score (%) |
|------|-------------------------------------|-------------------------|--------|-----------------------------------------------------------------------|--------------------------------------------------------------------------|------------------|-----------------|---------------------------------------------|--------------------------------------------|-----------|
| 1    | 2                                   | 3                       | 4      | 5                                                                     | 6                                                                        | 7                | 8               | 9                                           | 10                                         | 11        |
|      | and transportation infrastructure . |                         |        |                                                                       |                                                                          |                  |                 |                                             |                                            |           |
|      |                                     |                         |        | Students understand the management and provision of sewerage channels | Management and Provision of Utilities of domestic waste disposal channel | M1, M2, M3       | 160             | Lecture, Discussion, Case Study, Assessment | Individual Liveline ss, Group Presentation |           |
|      |                                     |                         |        | Students understand the management and provision of waste systems     | Management and Supply of Utilities of waste management system            | M1, M2, M3       | 160             | Lecture, Discussion, Case Study, Assessment | Individual Liveline ss, Group Presentation |           |

| Week   | Learning achievement In Course                                                                                                                                                         | Module Learning Outcome                                                               | Module                                                                                                                                                                                      | Learning Outcome                                                              | Scope                                                         | Learning Methods | Course Duration | Modes of Delivery                           | Grading Policy                            | Score (%) |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------|------------------|-----------------|---------------------------------------------|-------------------------------------------|-----------|
| 1      | 2                                                                                                                                                                                      | 3                                                                                     | 4                                                                                                                                                                                           | 5                                                                             | 6                                                             | 7                | 8               | 9                                           | 10                                        | 11        |
|        |                                                                                                                                                                                        |                                                                                       |                                                                                                                                                                                             | Students understand and the management and provision of fire fighting systems | Management and Provision of Fire Suppression System Utilities | M1, M2, M3       | 160             | Lecture, Discussion, Case Study, Assessment | Individual Liveliness, Group Presentation |           |
| Week 5 | Students are able to apply the standard of management and infrastructure provision in the development of region and city covering electricity, telecommunication, water and sanitation | Students understand and the management and supply of new and renewable energy as well | Infrastructure in the development of the region and the city includes electricity infrastructure, telecommunications, water and sanitation systems, waste systems, drainage systems, energy | Students understand and the management and supply of new and renewable energy | Energy Infrastructure, including: new and renewable energy    | M1, M2, M3       | 320             | Lecture, Discussion, Case Study, Assessment | Individual Liveliness, Group Presentation |           |

| Week | Learning achievement In Course                                                                     | Module Learning Outcome                                               | Module                                            | Learning Outcome                                                                                          | Scope                                                          | Learning Methods | Course Duration | Modes of Delivery                           | Grading Policy                             | Score (%) |
|------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|------------------|-----------------|---------------------------------------------|--------------------------------------------|-----------|
| 1    | 2                                                                                                  | 3                                                                     | 4                                                 | 5                                                                                                         | 6                                                              | 7                | 8               | 9                                           | 10                                         | 11        |
|      | system, garbage system, drainage system, energy infrastructure and transportation infrastructure . | as the Infrastructure of water sources within the territorial context | infrastructure and transportation infrastructure. |                                                                                                           |                                                                |                  |                 |                                             |                                            |           |
|      |                                                                                                    |                                                                       |                                                   | Students understand the management and provision of water resources infrastructure within the territorial | Infrastructure of water sources within the territorial context | M1, M2, M3       | 320             | Lecture, Discussion, Case Study, Assessment | Individual Livelihoods, Group Presentation |           |

| Week   | Learning achievement In Course                                                                                                                                                                                                                                           | Module Learning Outcome                                                                       | Module                                                                                                                                                                                                                                        | Learning Outcome                                                                         | Scope                                               | Learning Methods | Course Duration | Modes of Delivery                           | Grading Policy                            | Score (%) |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-----------------------------------------------------|------------------|-----------------|---------------------------------------------|-------------------------------------------|-----------|
| 1      | 2                                                                                                                                                                                                                                                                        | 3                                                                                             | 4                                                                                                                                                                                                                                             | 5                                                                                        | 6                                                   | 7                | 8               | 9                                           | 10                                        | 11        |
|        |                                                                                                                                                                                                                                                                          |                                                                                               |                                                                                                                                                                                                                                               | context                                                                                  |                                                     |                  |                 |                                             |                                           |           |
| Week 6 | Students are able to apply the standard of management and infrastructure provision in the development of region and city covering electricity, telecommunication, water and sanitation system, garbage system, drainage system, energy infrastructure and transportation | Students understand and management and provision of sea and air transportation infrastructure | Infrastructure in the development of the region and the city includes electricity infrastructure, telecommunications, water and sanitation systems, waste systems, drainage systems, energy infrastructure and transportation infrastructure. | Students understand and management and provision of marine transportation infrastructure | Marine Transport Infrastructure (Sea Port and Toll) | M1, M2, M3       | 320             | Lecture, Discussion, Case Study, Assessment | Individual Liveliness, Group Presentation |           |

| Week   | Learning achievement In Course                                                                                                                                              | Module Learning Outcome                                                                           | Module                                                                                                                                                                      | Learning Outcome                                                                           | Scope                                                         | Learning Methods | Course Duration | Modes of Delivery                           | Grading Policy                                            | Score (%) |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------|------------------|-----------------|---------------------------------------------|-----------------------------------------------------------|-----------|
| 1      | 2                                                                                                                                                                           | 3                                                                                                 | 4                                                                                                                                                                           | 5                                                                                          | 6                                                             | 7                | 8               | 9                                           | 10                                                        | 11        |
|        | infrastructure                                                                                                                                                              |                                                                                                   |                                                                                                                                                                             |                                                                                            |                                                               |                  |                 |                                             |                                                           |           |
|        |                                                                                                                                                                             |                                                                                                   |                                                                                                                                                                             | Students understand the management and provision of air transport infrastructure           | Air Transport Infrastructure (Airports)                       | M1, M2, M3       | 320             | Lecture, Discussion, Case Study, Assessment | Individual Liveness, Group Presentation                   |           |
| Week 7 | Students are able to apply the standard of management and infrastructure provision in the development of region and city covering electricity, telecommunication, water and | Students understand and the management and provision of sea and air transportation infrastructure | Infrastructure in the development of the region and the city includes electricity infrastructure, telecommunications, water and sanitation systems, waste systems, drainage | Students understand and the management and provision of land transportation infrastructure | Land Transport Infrastructure (Artery / Toll Roads, Railways) | M1, M2, M3       | 640             | Lecture, Discussion, Case Study, Assessment | Individual Liveness, Presentasi Kelompok, Critical Review | 20%       |

| Week   | Learning achievement In Course                                                                              | Module Learning Outcome                                                               | Module                                                            | Learning Outcome                                                                                     | Scope                                            | Learning Methods | Course Duration | Modes of Delivery                           | Grading Policy                             | Score (%) |
|--------|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------------------------------------------|------------------|-----------------|---------------------------------------------|--------------------------------------------|-----------|
| 1      | 2                                                                                                           | 3                                                                                     | 4                                                                 | 5                                                                                                    | 6                                                | 7                | 8               | 9                                           | 10                                         | 11        |
|        | sanitation system, garbage system, drainage system, energy infrastructure and transportation infrastructure | structure                                                                             | systems, energy infrastructure and transportation infrastructure. | structure                                                                                            |                                                  |                  |                 |                                             |                                            |           |
| Week 8 | Students are able to explain the principles of infrastructure development for coastal and island areas      | Students understand the management and provision of coastal and archipelagic Infrastr | Infrastructure of coastal areas and islands                       | Students understand the management and provision of Infrastructure supporting marine area activities | Infrastructure supporting marine area activities | M1, M3, M7       | 240             | Lecture, Discussion, Case Study, Assessment | Individual Livelihoods, Group Presentation |           |

| Week | Learning achievement In Course | Module Learning Outcome | Module | Learning Outcome                                                                                  | Scope                                         | Learning Methods | Course Duration | Modes of Delivery                           | Grading Policy                            | Score (%) |
|------|--------------------------------|-------------------------|--------|---------------------------------------------------------------------------------------------------|-----------------------------------------------|------------------|-----------------|---------------------------------------------|-------------------------------------------|-----------|
| 1    | 2                              | 3                       | 4      | 5                                                                                                 | 6                                             | 7                | 8               | 9                                           | 10                                        | 11        |
|      |                                | ucture                  |        |                                                                                                   |                                               |                  |                 |                                             |                                           |           |
|      |                                |                         |        | Students understand the management and provision of terrestrial Supporting infrastructure area    | Infrastructure supporting terrestrial area    | M1, M3, M7       | 200             | Lecture, Discussion, Case Study, Assessment | Individual Liveliness, Group Presentation |           |
|      |                                |                         |        | Students understand the management and provision of Infrastructure related to disaster mitigation | Infrastructure related to disaster mitigation | M1, M3, M7       | 200             | Lecture, Discussion, Case Study, Assessment | Individual Liveliness, Group Presentation |           |

| Week    | Learning achievement In Course                                                                          | Module Learning Outcome                                                                | Module                                        | Learning Outcome                                             | Scope                             | Learning Methods | Course Duration | Modes of Delivery                           | Grading Policy                            | Score (%) |
|---------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------|--------------------------------------------------------------|-----------------------------------|------------------|-----------------|---------------------------------------------|-------------------------------------------|-----------|
| 1       | 2                                                                                                       | 3                                                                                      | 4                                             | 5                                                            | 6                                 | 7                | 8               | 9                                           | 10                                        | 11        |
|         |                                                                                                         |                                                                                        |                                               | on                                                           |                                   |                  |                 |                                             |                                           |           |
| Week 9  | Students are able to explain the principles of infrastructure development for rural / agropolitan areas | Students understand the management and provision of rural / agropolitan Infrastructure | Infrastructure of rural / agropolitan area    | Students understand and about the agropolitan area           | Understanding of agropolitan area | M1, M3, M7       | 320             | Lecture, Discussion, Case Study, Assessment | Individual Liveliness, Group Presentation |           |
|         |                                                                                                         |                                                                                        |                                               | Students understand about the Irrigation Network Development | Irrigation Network Development    | M1, M3, M7       | 320             | Lecture, Discussion, Case Study, Assessment | Individual Liveliness, Group Presentation |           |
| Week 10 | Students are able to explain the principles of infrastructure                                           | Students understand the management and provision                                       | Infrastructure of industrial and mining areas | Students understand and about                                | Understanding of KPI and KI       | M1, M3, M7       | 160             | Lecture, Discussion, Case Study, Assessment | Individual Liveliness, Group              |           |



| Week | Learning achievement In Course              | Module Learning Outcome                          | Module | Learning Outcome                                              | Scope                                                                                       | Learning Methods | Course Duration | Modes of Delivery                           | Grading Policy                       | Score (%) |
|------|---------------------------------------------|--------------------------------------------------|--------|---------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------------|-----------------|---------------------------------------------|--------------------------------------|-----------|
| 1    | 2                                           | 3                                                | 4      | 5                                                             | 6                                                                                           | 7                | 8               | 9                                           | 10                                   | 11        |
|      | development for industrial and mining areas | of Infrastructure of industrial and mining areas |        | KPI and KI                                                    |                                                                                             |                  |                 | nt                                          | Present ation                        |           |
|      |                                             |                                                  |        | Students understand 9 strategic industries according to RIPIN | 9 Strategic industries according to RIPIN (10 industry types and translation in WPPI)       | M1, M3, M7       | 160             | Lecture, Discussion,                        | Individual Liveliness, Group         |           |
|      |                                             |                                                  |        |                                                               |                                                                                             |                  |                 | Case Study, Assessment                      | Present ation                        |           |
|      |                                             |                                                  |        | Students understand the calculation - the calculation         | Calculation - the calculation of the need for infrastructure provision based on Ministerial | M1, M3, M7       | 160             | Lecture, Discussion, Case Study, Assessment | Individual Liveliness, Group Present |           |

| Week    | Learning achievement In Course                                            | Module Learning Outcome                             | Module                                        | Learning Outcome                                                                             | Scope                                                                      | Learning Methods | Course Duration | Modes of Delivery                           | Grading Policy                            | Score (%) |
|---------|---------------------------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------------|-----------------|---------------------------------------------|-------------------------------------------|-----------|
| 1       | 2                                                                         | 3                                                   | 4                                             | 5                                                                                            | 6                                                                          | 7                | 8               | 9                                           | 10                                        | 11        |
|         |                                                                           |                                                     |                                               | of the need for infrastructure provision based on Ministerial Decree of Ministry of Industry | Decree of Kemenperin                                                       |                  |                 |                                             | ation                                     |           |
|         |                                                                           |                                                     |                                               | Students understand Specific standards for infrastructure needs in certain industry types    | Specific standards for infrastructure needs in certain types of industries | M1, M3, M7       | 160             | Lecture, Discussion, Case Study, Assessment | Individual Liveliness, Group Presentation |           |
| Week 11 | Students are able to explain the principles of infrastructure development | Students understand the management and provision of | Infrastructure of industrial and mining areas | Students understand the Prospect of mining area                                              | Prospect of mining area                                                    | M1, M3, M7       | 320             | Lecture, Discussion, Case Study, Assessment | Individual Liveliness, Group Present      |           |

| Week    | Learning achievement In Course  | Module Learning Outcome                       | Module                     | Learning Outcome                                                                                   | Scope                                          | Learning Methods   | Course Duration | Modes of Delivery                           | Grading Policy               | Score (%) |
|---------|---------------------------------|-----------------------------------------------|----------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------|--------------------|-----------------|---------------------------------------------|------------------------------|-----------|
| 1       | 2                               | 3                                             | 4                          | 5                                                                                                  | 6                                              | 7                  | 8               | 9                                           | 10                           | 11        |
|         | for industrial and mining areas | Infrastructure of industrial and mining areas |                            |                                                                                                    |                                                |                    |                 |                                             | ation                        |           |
|         |                                 |                                               |                            | Students understand the Management and provision of mining infrastructure (oil, coal and minerals) | Mining infrastructure (oil, coal and minerals) | M1, M3, M7         | 320             | Lecture, Discussion, Case Study, Assessment | Individual Liveliness, Group |           |
|         |                                 |                                               |                            |                                                                                                    |                                                |                    |                 |                                             | Presentation                 |           |
| Week 12 |                                 |                                               | Discussion of Case Studies |                                                                                                    | Quiz                                           | M3, M3, M7         | 120             | Quiz                                        | Quiz                         | 30%       |
| Week 13 |                                 |                                               | Discussion of Case Studies |                                                                                                    | Assessment Assistance                          | M1, M2, M3, M4, M7 | 1160            | Discussion                                  | Individual Liveliness, Group |           |

| Week    | Learning achievement In Course | Module Learning Outcome | Module                     | Learning Outcome | Scope                   | Learning Methods   | Course Duration | Modes of Delivery        | Grading Policy                                 | Score (%) |
|---------|--------------------------------|-------------------------|----------------------------|------------------|-------------------------|--------------------|-----------------|--------------------------|------------------------------------------------|-----------|
| 1       | 2                              | 3                       | 4                          | 5                | 6                       | 7                  | 8               | 9                        | 10                                             | 11        |
|         |                                |                         |                            |                  |                         |                    |                 |                          | Presentation                                   |           |
| Week 14 |                                |                         | Discussion of Case Studies |                  | Assessment Presentation | M1, M2, M3, M4, M7 | 640             | Presentation, Discussion | Individual Liveliness, Assessment Presentation |           |
| Week 15 |                                |                         | Discussion of Case Studies |                  | Assessment Presentation | M1, M2, M3, M4, M7 | 640             | Presentation, Discussion | Individual Liveliness, Assessment Presentation |           |
| Week 16 |                                |                         | Discussion of Case Studies |                  | Assessment Submission   | M1, M2, M3, M4, M7 | 640             | Assessment Submission    | Assessment                                     | 30%       |

## **EVALUATION COURSE**

Evaluation of this course include 4 points, there are:

1. Evaluation 1 (20%): Weekly presentation
2. Evaluation 2 (30%): Writing test
3. Evaluation 3 (20%): Drafting the final report of study case
4. Evaluation 4 (30%): Presentation study case

### **EVALUATION I**

Evaluation I are in the form of task group which is students are perform weekly presentation in accordance with the division of topic.

#### **A. LEARNING OBJECTIVES**

Students are able to explain various issues of infrastructure needs and able to recognize the needs and suggestions handling.

#### **B. MATERIAL ASSIGNMENTS**

Material assignments are include:

- Overview of existing conditions with description, documentation, and mapping.
- Strategic issues of development regional infrastructure.
- Infrastructures needed in future.
- The proposed plan of handling.

#### **C. IMPLEMENTATION OF THE ASSIGNMENTS**

The assignments are completed in a group based. The students are recommended for consult to the lecturer before make a compiler of draft/finalization assignments.

The Evaluation 1 form are: weekly presentation turn by turn and the articles are collected a week after it was presented.

#### **D. CRITERIA OF ASSESSMENTS**

The percentage for Evaluation I is 20%.

### **EVALUATION II**

Evaluation II form of writing test with answer some practice question about regional infrastructure and **closed book**.

#### **A. LEARNING OBJECTIVES**

The objectives of Evaluation II is:

- Assess the level of success from implementation of the teaching and learning activities related to the substance of the region infrastructure.
- Students are able to explain aspects of the region infrastructure.

#### **B. MATERIAL ASSIGNMENTS**

Material assignments are include:

- Discuss about materials that has been presented by lecturer.
- Problem solving a case.

#### **C. IMPLEMENTATION OF THE ASSIGNMENTS**

Writing test do by individual and closed book in week 10<sup>th</sup>.

#### **D. CRITERIA OF ASSESSMENTS**

The percentage of the Evaluation II is 30%.

### EVALUATION III

The assignments are study cases and done by a group, in a group there are 3-4 students.

Each group choose the different study case with the topic below:

1. Infrastructure of urban utilities and facilities. *Infrastruktur Utilitas and Fasilitas Perkotaan*
2. Infrastructure of land transport. *Infrastruktur Transportasi darat*
3. Infrastructure of sea transport or *Waterfront development infrastructure*
4. Infrastructure of air transport.
5. *Smart City Infrastructure*

#### A. LEARNING OBJECTIVES

Mahasiswa mampu menyusun strategi pengembangan infrastruktur yang mencakup deskripsi and analisis mengenai:

1. Existing condition of region.
2. Problems of development infrastructure.
3. The infrastructure needs of the region in the future: perspective of economics, institutional, and policy development.
4. Strategic issues of development regional infrastructure.
5. The strategy of development regional infrastructure.

#### B. MATERIAL ASSIGNMENTS

Material assignments are:

1. Introduction (background, problems, objectives, the significance of research, an overview of study area, systematics of report).
2. Literature review.
3. Methodology.
4. Analysis and Discuss.
5. Conclusion
6. Bibliography
7. Appendix: 1. Log Book that shows how much an individual more active in the group.  
2. tabulate of data

#### C. IMPLEMENTATION OF THE ASSIGNMENTS

The students are recommended for consult to the lecturer before make a compiler of draft/finalization assignments.

The assignments is typed on A4 portrait paper, space 1-1.5, the number of the page is not restricted.

#### D. CRITERIA OF ASSESSMENTS

The percentage of the Evaluation II is 20%.

### EVALUATION IV: STUDY CASE PRESENTATION

#### A. FORMAT

Evaluation 4 are show the presentation from study case assignments that has been done in Evaluation 3. The presentation are based on group, but the assessments are individual. The presentation shown at maximum 15 minutes, the rest of the time followed by discuss to assess perform of individual. The material can be in powerpoint or the similar media.



**EVALUATION AND ASSIGNMENT PLAN OF URBAN AND REGIONAL INFRASTRUCTURE**

**1. EVALUATION I:**

**ASSIGNMENT I – Weekly Presentation**

|                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Course</b>                                                             | Urban and Regional Infrastructure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Credit</b>                                                             | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Course Matter</b>                                                      | Course matter 1 <sup>st</sup> , 2 <sup>nd</sup> , and 3 <sup>rd</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>The Objectives of Learning From Matter</b>                             | <ul style="list-style-type: none"> <li>• Students able to understand the theoretic concept of planning urban and regional in aspect urban studies, regional studies, spatial science, data science &amp; computer application, social-politics, environmental management, the design of built environment, infrastructure system and transportation, coastal studies, management, economics.</li> </ul>                                                                                                                                                                                                                                                                                             |
| <b>The Objectives of Weekly Presentation</b>                              | <ul style="list-style-type: none"> <li>• This assessments are used to assess the capability of students to explain the prinipal and basic concept infrastructure systems.</li> <li>• This assessments are used to assess the capability of student to explain about challenge and opportunity development of infrastructure.</li> <li>• This assessments are used to assess the capability of student to apply the standart of management and provision infrastructure in development of urbanand region includes utilities: electricity, telecommunications, water supply andsanitation system, waste system, drainage system, energy infrastructure and transportation infrastructure.</li> </ul> |
| <b>Level of Depth the Presentation of Report Survey Design (C1 sd C6)</b> | C1, C2, C3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Material of Assignments</b>                                            | <p>Material of assignments are includes:</p> <ul style="list-style-type: none"> <li>• Overview of existing conditions with description, documentation, and mapping.</li> <li>• Strategic issues of development regional infrastructure.</li> <li>• Infrastructures needed in future.</li> <li>• The proposed plan of handling.</li> </ul>                                                                                                                                                                                                                                                                                                                                                           |
| <b>Implementation of Assignments</b>                                      | <p>The assignments are completed in a group based. The students are recommended for consult to the lecturer before make a compiler of draft/finalization assignments.</p> <p>weekly presentation turn by turn and the articles are collected a week after it was presented.</p>                                                                                                                                                                                                                                                                                                                                                                                                                     |



**CRITERIA FOR EVALUATION 1 – WEEKLY PRESENTATION**

| Dimension                        | Very Good                                                                                                                 | Good                                                                                                                                                        | Average                                                                                                                                                 | Bad                                                                                                                                                | Very Bad                                                                                                                                                               | Score |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| <b>Technique of presentation</b> | The presentation was organized with showing fact that supported by example that already analyzed based on concept         | The presentation was organized and showing fact that make sure to support the conclusions                                                                   | The presentation has focus point and showing some evidence that support the conclusions                                                                 | The presentation has focus point, but evidence were insufficient to used formake a conclusions.                                                    | There's no specific organization. Facts arenot used to support their statement                                                                                         |       |
|                                  | 86-100                                                                                                                    | 76-85                                                                                                                                                       | 66-75                                                                                                                                                   | 56-65                                                                                                                                              | 0-55                                                                                                                                                                   |       |
| <b>Content</b>                   | Content that can be inspire listener to develop their minds. The student shown ethics and responsibility as a facilitator | Has an accurate and complete presentation. The listener has a new knowledge about that topics. The student shown ethics and responsibility as a facilitator | Has an accurate content but not complete. The listener less active to discuss that topics. The student shown ethics and responsibility as a facilitator | The content was less accurate because there's no data and fact that supports it. The student shown less ethics and responsibility as a facilitator | The content are not accurate and very common. Listener didn't get any lessons from this presentation The student dont shown ethics and responsibility as a facilitator |       |
|                                  | 86-100                                                                                                                    | 76-85                                                                                                                                                       | 66-75                                                                                                                                                   | 56-65                                                                                                                                              | 0-55                                                                                                                                                                   |       |
| <b>Discussion</b>                | The right argumentation with example or the fact                                                                          | The right argumentation but lacking of the fact                                                                                                             | The lack of argumentation but have fact or example                                                                                                      | The lack of argumentation and nothave example                                                                                                      | Argumentation is wrong                                                                                                                                                 |       |

## 2. EVALUATION II:Quiz

|                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Course                                                             | Urban and Regional Infrastructure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Credit                                                             | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Course Matter                                                      | Matter 1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> and 4 <sup>th</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| The Objectives of Learning From Matter                             | <ul style="list-style-type: none"> <li>Students able to understand the theoretic concept of planning urban and regional in aspect urban studies, regional studies, spatial science, data science &amp; computer application, social-politics, environmental management, the design of built environment, infrastructure system and transportation, coastal studies, management, economics.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                        |
| The Objectives of Weekly Presentation                              | <ul style="list-style-type: none"> <li>This assessments are used to assess the capability of students to explain the prinipal and basic concept infrastructure systems.</li> <li>This assessments are used to assess the capability of student to explain about challenge and oppportunity development of infrastructure.</li> <li>This assessments are used to assess the capability of student to apply the standart of management and provision infrastructure in development of urbanand region includes utilities: electricity, telecommunications, water supply and sanitation system, waste system, drainage system, energy infrastructure and transportation infrastructure.</li> </ul>                                                                              |
| Level of Depth the Presentation of Report Survey Design (C1 sd C6) | C1, C2, C3 and C4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Material of Assignments                                            | <p>Material of Assignments are includes:</p> <ul style="list-style-type: none"> <li>Problems, challenge, and oppportunity of development urban and regionalinfrastructure.</li> <li>Strategic issues Isu-isu strategis pengembangan infrastruktur wilayah</li> <li>Management and provision of urban utilities (electricity, clean water, waste water, etc.) along with proposed handling plan.</li> <li>Management and provision of urban facilities (health, open green space, public facilities, etc.) along with proposed handling plan.</li> <li>Management and provision of facilities for regional development needs (sea transportation, air transportation, land transportation and support for terrestrialareas and disaster mitigation and industrial)</li> </ul> |
| Implementation of Assignments                                      | Writing test do by individual and closed book in week 10 <sup>th</sup> and multiple choice.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

**CRITERIA FOR EVALUATION 2 - QUIZ**

| The Explanatory Question is assessed from the Completeness of the Answer | <b>Assessment criteria</b> |                                                                                               | <b>Score</b> |
|--------------------------------------------------------------------------|----------------------------|-----------------------------------------------------------------------------------------------|--------------|
|                                                                          | Excellent<br>86-100        | All keywords are answered with the right explanation with clear paths accompanied by examples |              |
|                                                                          | Very good<br>76-85         | All keywords are answered with the right explanation but the plot is not clear                |              |
|                                                                          | Good<br>66-75              | The keywords are partially answered with the right explanation without flow                   |              |
|                                                                          | Enough<br>56-65            | Keywords are less precise, explanations that are less precise and without flow                |              |
|                                                                          | Bad<br>0-55                | There are no keywords and explanations                                                        |              |

### 3. EVALUATION III

|                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Course                                                             | Urban and Regional Infrastructure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Credit                                                             | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Course Matter                                                      | Matter 2nd, 3rd, 4th, and 5th                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| The Objectives of Learning From Matter                             | <ul style="list-style-type: none"> <li>• Students are able to understand the theoretic concept of planning urban and regional in aspect urban studies, regional studies, spatial science, data science&amp; computer application, social-politics, environmental management, the design of built environment, infrastructure system and transportation, coastal studies, management, economics.</li> <li>• Students are able to explain spatial characteristics of the city, region, coastal Mampu mendeskripsikan karakteristik keruangan (spatial) kota, wilayah, pesisir through an analysis of the interrelationships of aspatial and spatial aspects so that information is available as a basis for developing planning models.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| The Objectives of Weekly Presentation                              | <ul style="list-style-type: none"> <li>• This assignments are used to evaluate the ability of students in explain principal and basic concept of infrastructure system.</li> <li>• This assignments are used to evaluate the ability of students in explain about challenge and opportunity development infrastructure.</li> <li>• This assignments are used to evaluate the ability of students in apply standart of management and provision infrastructure in development of urban and region includes utilities: electricity, telecommunications, water supply and sanitation system, waste system, drainage system, energy infrastructure and transportation infrastructure.</li> <li>• This assignments are used to evaluate the ability of students in explain spatial characteristics of the city, region, coastal through an analysis of the interrelationships of aspatial and spatial aspects so that information is available as a basis for developing planning models.</li> <li>• This assignments are used to evaluate the ability of students in explain about principal of development infrastructure in coastal.</li> <li>• This assignments are used to evaluate the ability of students in explain about principal of rural region/agropolitan.</li> <li>• This assignments are used to evaluate the ability of students in explain about principal of industrial and mining region.</li> </ul> |
| Level of Depth the Presentation of Report Survey Design (C1 sd C6) | C4, C5 and C6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Material of Assignments                                            | <p>Material of Assignments are includes:</p> <ul style="list-style-type: none"> <li>• Problems, challenge, and opportunity of development urban and regional infrastructure.</li> <li>• Strategic issues Isu-isu strategis pengembangan infrastruktur wilayah</li> <li>• Management and provision of urban utilities (electricity, clean water, wastewater, etc.) along with proposed handling plan.</li> <li>• Management and provision of urban facilities (health, open green space,</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      | <p>public facilities, etc.) along with proposed handling plan.</p> <ul style="list-style-type: none"> <li>• Management and provision of facilities for regional development needs (sea transportation, air transportation, land transportation and support for terrestrial areas and disaster mitigation and industrial)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <p>Implementation of Assignments</p> | <p>The assignments are study case and based on group project, in a group there are 3-4 students. And each group choose the different topic below:</p> <ol style="list-style-type: none"> <li>1. Infrastructure of urban utilities and facilities. <i>Infrastruktur Utilitas and Fasilitas Perkotaan</i></li> <li>2. Infrastructure of land transport. <i>Infrastruktur Transportasi darat</i></li> <li>3. Infrastructure of sea transport or <i>Waterfront development infrastructure</i></li> <li>4. Infrastructure of air transport.</li> <li>5. <i>Smart City Infrastructure</i></li> </ol> <p>Systematics of assignments:</p> <ol style="list-style-type: none"> <li>1. Introduction (background, problems, objectives, the significance of research, an overview of study area, systematics of report).</li> <li>2. Literature review.</li> <li>3. Methodology.</li> <li>4. Analysis and Discuss.</li> <li>5. Conclusion</li> <li>6. Bibliography</li> </ol> <p>Appendix: (1) Log Book that shows how much an individual more active in the group; (2) tabulate of data</p> |

**CRITERIA FOR EVALUATING**

| No | Sub Chapter                      | Excellent<br>86-100                                                                                                    | Very Good<br>76-85                                                                                                             | Good<br>66-75                                                                                                                  | Average<br>56-65                                                                                      | Enough<br>0-55                                                      | Score |
|----|----------------------------------|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-------|
| 1  | Introduction                     | The Empirical facts are completed and very relevant, the urgency of the problem is high                                | The Empirical facts are completed and very relevant, but the urgency is not high                                               | The empirical facts are stated but not relevant and urgent                                                                     | The empirical facts is not completed, not relevant and not urgent                                     | Empirical facts is not stated and couldnt for the research question |       |
| 2  | Process and overview of problems | Very precise with comprehensive thinking                                                                               | Very precise with less comprehensive thinking                                                                                  | Precise                                                                                                                        | Less precise                                                                                          | Not including quantitative concepts                                 |       |
| 3  | Methodology                      | Data needed, how to obtain data and techniques to process data precisely and explained in detail                       | Data needed, how to obtain data and explained in detail but the data processing is not right                                   | Understood how to obtain data but the data is not completed and the process is not right                                       | Data needed, how to obtain data and data processing techniques is not right                           | Not right at all.                                                   |       |
| 4  | Conclusion                       | The quality of conclusions is appropriate according to the results of the analysis and answers the research objectives | The quality of conclusions is appropriate according to the results of the analysis but does not answer the research objectives | The quality of conclusions is appropriate according to the results of the analysis but does not answer the research objectives | Conclusion quality is not in accorandce with the analysis and does not answer the research objectives | The conclusion not right at all.                                    |       |

|                               |          |                                                                                                                                                                      |                                                                                                                                                                 |                                                                                                                                                                        |                                                                                                                                                                                         |                                                                                                                                                                                       |  |
|-------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 5                             | Appendix | Includes a very complete survey instrument (interview form, questionnaire, observation form, secondary data checklist, etc.) according to the data collection method | Includes a complete survey instrument (interview form, questionnaire, observation form, secondary data checklist, etc.) according to the data collection method | Includes a fairly complete survey instrument (interview form, questionnaire, observation form, secondary data checklist, etc.) according to the data collection method | Includes a fairly complete survey instrument (interview form, questionnaire, observation form, secondary data checklist, etc.) and is not in accordance with the data collection method | Includes incomplete survey instruments (interview forms, questionnaires, observation forms, secondary data checklists, etc.) and is not in accordance with the data collection method |  |
| <b>Average Score Obtained</b> |          |                                                                                                                                                                      |                                                                                                                                                                 |                                                                                                                                                                        |                                                                                                                                                                                         |                                                                                                                                                                                       |  |

#### 4. EVALUATION 4:

|                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Course</b>                                                             | Urban and Regional Infrastructure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Credit</b>                                                             | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Course Matter</b>                                                      | Matter 2nd, 3rd, 4th, and 5th                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>The Objectives of Learning From Matter</b>                             | <ul style="list-style-type: none"> <li>• Students are able to understand the theoretic concept of planning urban and regional in aspect urban studies, regional studies, spatial science, data science &amp; computer application, social-politics, environmental management, the design of built environment, infrastructure system and transportation, coastal studies, management, economics.</li> <li>• Students are able to explain spatial characteristics of the city, region, coastal through an analysis of the interrelationships of aspatial and spatial aspects so that information is available as a basis for developing planning models.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>The Objectives of Weekly Presentation</b>                              | <ul style="list-style-type: none"> <li>• This assignments are used to evaluate the ability of students in explain principal and basic concept of infrastructure system.</li> <li>• This assignments are used to evaluate the ability of students in explain about challenge and opportunity development infrastructure.</li> <li>• This assignments are used to evaluate the ability of students in apply standartof management and provision infrastructure in development of urban and region includes utilities: electricity, telecommunications, water supply and sanitation system, waste system, drainage system, energy infrastructure and transportation infrastructure.</li> <li>• This assignments are used to evaluate the ability of students in explain spatial characteristics of the city, region, coastal through an analysis of the interrelationships of aspatial and spatial aspects so that information is availableas a basis for developing planning models.</li> <li>• This assignments are used to evaluate the ability of students in explain about principal of development infrastructure in coastal.</li> <li>• This assignments are used to evaluate the ability of students in explain about principal of rural region/agropolitan.</li> <li>• This assignments are used to evaluate the ability of students in explain about principal of industrial and mining region.</li> </ul> |
| <b>Level of Depth the Presentation of Report Survey Design (C1 sd C6)</b> | C4, C5 and C6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |



|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Material of Assignments</p>       | <p>Material of Assignments are includes:</p> <ul style="list-style-type: none"> <li>● Problems, challenge, and opportunity of development urban and regional infrastructure.</li> <li>● Strategic issues Isu-isu strategis pengembangan infrastruktur wilayah</li> <li>● Management and provision of urban utilities (electricity, clean water, wastewater, etc.) along with proposed handling plan.</li> <li>● Management and provision of urban facilities (health, open green space, public facilities, etc.) along with proposed handling plan.</li> <li>● Management and provision of facilities for regional development needs (sea transportation, air transportation, land transportation and support for terrestrial areas and disaster mitigation and industrial)</li> </ul>                                                                                                                                                                                                                                |
| <p>Implementation of Assignments</p> | <p>The assignments are study case and based on group project, in a group there are 3-4 students. And each group choose the different topic below:</p> <ol style="list-style-type: none"> <li>1. Infrastructure of urban utilities and facilities. <i>Infrastruktur Utilitas and Fasilitas Perkotaan</i></li> <li>2. Infrastructure of land transport. <i>Infrastruktur Transportasi darat</i></li> <li>3. Infrastructure of sea transport or <i>Waterfront development infrastructure</i></li> <li>4. Infrastructure of air transport.</li> <li>5. <i>Smart City Infrastructure</i></li> </ol> <ul style="list-style-type: none"> <li>● The students are recommended for consult to the lecturer before make a compiler of draft/finalization data needed and methode of search data by aspect.</li> <li>● The presentation shown by group, but each students have to presentate their aspect with short, clear and straightforward.</li> <li>● Each students shown their presentation maximum 20 minutes.</li> </ul> |

### CRITERIA FOR EVALUATION IV– STUDY CASE PRESENTATION

| Dimension                        | Very Good                                                                                                                 | Good                                                                                                                                                        | Enough                                                                                                                                                  | Bad                                                                                                                                                | Very Bad                                                                                                                                                               | Score |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| <b>Technique of presentation</b> | The presentation was organized with showing fact that supported by example that already analyzed based on concept         | The presentation was organized and showing fact that make sure to support the conclusions                                                                   | The presentation has focus point and showing some evidence that support the conclusions                                                                 | The presentation has focus point, but evidence were insufficient to used for make a conclusions.                                                   | There's no spesific organization. Facts are not used to support their statement                                                                                        |       |
|                                  | 86-100                                                                                                                    | 76-85                                                                                                                                                       | 66-75                                                                                                                                                   | 56-65                                                                                                                                              | 0-55                                                                                                                                                                   |       |
| <b>Substance</b>                 | Content that can be inspire listener to develop their minds. The student shown ethics and responsibility as a facilitator | Has an accurate and complete presentation. The listener has a new knowledge about that topics. The student shown ethics and responsibility as a facilitator | Has an accurate content but not complete. The listener less active to discuss that topics. The student shown ethics and responsibility as a facilitator | The content was less accurate because there's no data and fact that supports it. The student shown less ethics and responsibility as a facilitator | The content are not accurate and very common. Listener didn't get any lessons from this presentation. The student dont show ethics and responsibility as a facilitator |       |
|                                  | 86-100                                                                                                                    | 76-85                                                                                                                                                       | 66-75                                                                                                                                                   | 56-65                                                                                                                                              | 0-55                                                                                                                                                                   |       |
| <b>Discuss</b>                   | The right argumentation with example or the fact                                                                          | The right argumentation but lacking of the fact                                                                                                             | The lack of argumentation but have fact or example                                                                                                      | The lack of argumentation and no have example                                                                                                      | Argumentation is wrong                                                                                                                                                 |       |