



## SEMESTER LEARNING PLAN

**DEPARTMENT: URBAN AND REGIONAL PLANNING**

**FACULTY: CIVIL, PLANNING, AND EARTH**

|  |   |
|--|---|
| <b>COURSES NAME</b>                    | <b>LOCATION AND SPATIAL ANALYSIS</b>  |
| <b>COURSES CODE</b>                    | <b>DK184404</b>   |
| <b>SEMESTER</b>                        | <b>IV</b>   |
| <b>CREDITS</b>                         | <b>3/ 4,80</b>  |
| <b>LECTURER</b>                        |   |
| <b>STUDY MATERIAL</b>                  | Space theory & concept  |
|  | Spatial approach  |
|  | Spatial Analysis Techniques   |
|  | Spatial optimization model  |
|  | Decision making process   |
| <b>PROGRAM LEARNING OUTCOMES (PLO)</b> |   |
| <b>KNOWLEDGE</b>                       | Mastering the theoretical concepts of urban and regional planning in aspects of urban studies, regional studies, spatial science, data science & computer application, socio-political, environmental management, design of the built environment, infrastructure and transportation systems, coastal studies, management, economics. |
|  | Mastering the techniques and processes of urban and regional planning qualitatively, quantitatively, spatial modeling (geographical information systems) and presentation techniques.   |
|  | Mastering spatial/aspatial planning methods in decision making.   |
| <b>SPECIFIC SKILL</b>                  | Able to formulate planning concepts and plan directions through the study of strategic problems in the context of cities, regions, coastal areas with an understanding of planning problems through observation and use of data physical/spatial, social, economic and environmental.   |
|  | Able to utilize ICT in data management to produce information that is easily understood by public and decision makers.  |
|  | Able to describe the spatial characteristics of cities, regions, coasts through linkage analysis aspatial and spatial aspects so that information is available as a basis for developing planning models.   |
|  | Able to develop alternative spatial/spatial models through qualitative and quantitative approaches in the form of scenarios for regulating spatial patterns and structures of cities, regions, coasts and proposing solutions according to context.   |
| <b>GENERAL SKILL</b>                   | Able to apply logical, critical, systematic, and innovative thinking in the context of the development or implementation of science and technology that pays attention to and applies the values of the humanities according to their area of expertise   |
|  | Able to make appropriate decisions in the context of solving problems in their area of expertise, based on the results of the analysis of information and data  |
| <b>COURSE LEARNING OUTCOME (CLO)</b>   |   |
| <b>KNOWLEDGE</b>                       | Able to explain the basic principles and concepts of spatial aspects in determining activities  |
| <b>SPECIFIC SKILL</b>                  | Able to explain the meaning of location theory and its position in regional and city planning   |
|  | Able to analyze the location of several components of city and regional activities such as housing, government, industrial, commercial, social and economic facilities  |
| <b>GENERAL SKILL</b>                   | Able to analyze spatial interactions, attraction between activity locations on a city and regional scale  |
|  | Able to apply appropriate analytical techniques to assess locational and spatial aspects of regional and city activity components   |
|  | Able to formulate appropriate location decision making based on the case study that was appointed   |
|  | Students are able to communicate the concept of location selection visually, verbally and in writing based on ICT.  |

| MAP OF PLO-CLO | 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. Able to explain the basic principles and concepts of spatial aspects in determining activities   | 1     |       |       |       |       |       |       |       |       |        |        |
|                | CPMK-2. Able to explain the understanding of location theory and its position in regional and city planning  | 1     |       |       |       |       |       |       |       |       |        |        |
|                | CPMK-3. Able to analyze the location of several components of city and regional activities such as housing, government, industry, commercial, social and economic facilities |       |       | 1     |       |       | 1     |       |       |       |        |        |

**MODULES**

Able to explain the meaning of location theory and its position in regional and city planning

Students are able to explain classical location theory which is the basis for the development of the latest location analysis approach

Students are able to explain approaches in location analysis of several components of urban and regional activities such as housing, government, industrial, commercial, social and economic facilities

Students are able to explain approaches in spatial interaction analysis, attraction between activity locations on a city and regional scale

Students are able to implement appropriate analytical techniques to examine the locational aspects of regional and city activity components

**LOCATION AND SPATIAL ANALYSIS COURSE LEARNING PLAN**  
**EVEN SEMESTER OF ACADEMIC YEAR 2021–2022**

| WEEK | COURSE LEARNING OUTCOME  | MODULE LEARNING OUTCOME  | MODULE  | FINAL ABILITY  | SCOPE  | LEARNING METHODS | COURSE DURATION | MODES OF DELIVERY  | GRADING POLICY  | SCORING   |
|------|--|--|---|--|--|------------------|-----------------|--|---|---|
| 1    | 2  | 3  | 4   | 5  | 6  | 7                | 8               | 9  | 10  | 11  |
| 1    | Able to explain the basic principles and concepts of spatial aspects in determining activities | Able to explain the meaning of location theory and its position in regional and city planning  | 1. Definition of Location and its Implications, scope of location and spatial analysis,   | Students are able to explain the theory of location and its position in regional and city planning | 1.Introduction to location theory<br>2.Understanding the location and its implications<br>3. Scope location and spatial analysis | M1               | 480             | Face-to-face lectures, discussions.                                | Individual activity   |   |
| 2    | Able to explain the basic principles and concepts of spatial aspects in determining activities | Able to explain the meaning of location theory and its position in regional and city planning  | 2. The basic factors of determining the location, the problem of determining the location | Students are able to explain the theory of location and its position in regional and city planning | 4. Basic factors of location<br>5. Location issues   | M1               | 480             | Face-to-face lectures, discussions.                                | Individual activity   | 10% individual and 10% group (total 20% for each group that presentation) |
| 3    | Able to explain the meaning of location theory and its position in regional and city planning  | Students are able to explain classical location theory which is the basis for the development of the latest location analysis approach | 3. Von Thunen's classical location theories   | Students are able to explain the classical location theory, namely Von Thünen Theory               | 6. Von Thünen Theory (Land use Theory)   | M1, M2           | 480             | Face-to-face lectures, group presentations, case study discussions | Accuracy of understanding theory and its implications for simple case studies | 10% individual and 10% group (total 20% for each presenting group)        |
|      | Able to explain the meaning of location theory and   | Students are able to explain classical location  | 3. Weber's classical location theories  | Students are able to explain the classical location theory, namely Weber's                         | 7. Weber's theory  | M1, M2           | 480             | Face-to-face lectures, group presentations, case study             | Accurate understanding of theory and its implications                         | 10% individual  |

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|------|---|--|---|---|---|------------------|-----------------|--|--|---|
| 1    | 2   | 3  | 4   | 5   | 6   | 7                | 8               | 9  | 10   | 11  |
| 4    | its position in regional and city planning  | theory which is the basis for the development of the latest location analysis approach   |   | Theory  |   |                  |                 | discussions  | for simple case studies  |   |
| 5    | Able to explain the meaning of location theory and its position in regional and city planning | Students are able to explain classical location theory which is the basis for the development of the latest location analysis approach   | 4. Classical location theories of Losch and Christaller | Students are able to explain the classical location theory, namely the Losch and Christaller theory | 8. Lösch and Christaller Theory (Central Place Theory)                    | M1, M2           | 480             | Face-to-face lectures, group presentations, case study discussions | Accurate understanding of theory and its implications for simple case studies  | and 10% group (total 20% for each presenting group) |
| 6    | Able to explain the meaning of location theory and its position in regional and city planning | Students are able to explain classical location theory which is the basis for the development of the latest location analysis approach   | 5. Hotelling's classic location theories                | Students are able to explain the classical location theory, namely Hotelling Theory                 | 9. Hotelling Theory (Spatial Competition and Competitive Differentiation) | M1, M2           | 480             | Face-to-face lectures, group presentations, case study discussions | Accurate understanding of theory and its implications for simple case studies  | 10% individual                                      |
| 7    | Able to explain the meaning of location theory and its position in regional and city planning | Assessing the success rate of teaching and learning activities related to the substance of classical location theory and students' understanding of the implications of location | Mid-Semester Examination (UTS)                          | Students are able to explain the differences between classical location theories                    | material week 1 to 6  | M1, M2           | 480             | Quiz   | Accuracy in understanding and explaining the differences in classical location theory in its implications for spatial phenomena that arise in an area/city | 30%   |

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|------|--|--|---|---|--|------------------|-----------------|--|---|---|
| 1    | 2  | 3  | 4   | 5   | 6  | 7                | 8               | 9  | 10  | 11  |
|      |  | theory on location and spatial phenomena that arise in an area and city.   |   |   |  |                  |                 |  |   |   |
| 8    | Able to analyze the location of several components of city and regional activities such as housing, government, industrial, commercial, social and economic facilities | Students are able to explain approaches in location analysis of several components of city and regional activities such as housing, government, industry, commercial, social and economic facilities | 6. Basics of industrial activity location analysis                | Students are able to explain and apply the basics and analysis of the location of industrial activities     | 10. Basics and location analysis of industrial activities                              | M1, M2, M3       | 480             | Face-to-face lectures, group presentations, case study discussions | Accuracy of understanding theory and its implications for simple case studies | 10% individual                                      |
| 9    | Able to analyze the location of several components of city and regional activities such as housing, government,  | Students are able to explain approaches in location analysis of several components of city and regional activities such as housing, government, industry, commercial, social and economic facilities | 7. Fundamentals of analysis of the location of trading activities | Students are able to explain and apply the basics and analysis of the location of trading/retail activities | 11. Fundamentals and analysis of the location of trade and service activities (retail) | M1, M2, M3       | 480             | Face-to-face lectures, group presentations, case study discussions | Accuracy of understanding theory and its implications for simple case studies | and 10% group (total 20% for each presenting group) |

| WEEK | COURSE LEARNING OUTCOME  | MODULE LEARNING OUTCOME  | MODULE  | FINAL ABILITY  | SCOPE  | LEARNING METHODS | COURSE DURATION | MODES OF DELIVERY  | GRADING POLICY  | SCORING  |
|------|--|--|---|--|--|------------------|-----------------|--|---|--|
| 1    | 2  | 3  | 4   | 5  | 6  | 7                | 8               | 9  | 10  | 11   |
| 10   | Able to analyze the location of several components of city and regional activities such as housing, government, industrial, commercial, social and economic facilities | Students are able to explain approaches in location analysis of several components of city and regional activities such as housing, government, industry, commercial, social and economic facilities | 8. Basics of location analysis of public facilities service activities                                      | Students are able to explain and apply the basics and analysis of the location of public facilities activities | 12. Fundamentals and Analysis of infrastructure (facility) location  | M1, M2, M3       | 480             | Face-to-face lectures, group presentations, case study discussions | Accurate understanding of theory and its implications for simple case studies | 10% individual   |
| 11   | Able to apply appropriate analytical techniques to assess locational and spatial aspects of regional and city activity components                                      | Students are able to implement appropriate analytical techniques to examine the locational aspects of regional and city activity components  | 9. Spatial analysis methods and techniques include: multi-criteria analysis and GIS                         | Students are able to explain and apply the use of multi-criteria analysis in site selection                    | 13. Multi Criteria Analysis and GIS application to determine site selection                                  | M1, M2, M3       | 480             | Face-to-face lectures, group presentations, case study discussions | Accurate understanding of theory and its implications for simple case studies | and 10% group (total 20% for each presenting group)                |
| 12   | Able to analyze spatial interactions, attraction between activity locations on a city and regional scale   | Students are able to explain approaches in spatial interaction analysis, attraction between activity locations on a city and regional scale  | 11. Spatial analysis methods and techniques include: spatial interaction analysis with gravity model method | Students are able to explain and apply spatial interaction analysis  | 14. Other applications of spatial interaction to determine location selection using the gravity model method | M1, M2, M3       | 480             | Face-to-face lectures, group presentations, case study discussions | Accurate understanding of theory and its implications for simple case studies | 10% individual and 10% group (total 20% for each presenting group) |

| WEEK | COURSE LEARNING OUTCOME  | MODULE LEARNING OUTCOME  | MODULE   | FINAL ABILITY   | SCOPE   | LEARNING METHODS | COURSE DURATION | MODES OF DELIVERY  | GRADING POLICY  | SCORING  |
|------|--|--|--|---|---|------------------|-----------------|--|---|--|
| 1    | 2  | 3  | 4  | 5   | 6   | 7                | 8               | 9  | 10  | 11   |
| 13   | Able to analyze spatial interactions, attraction between activity locations on a city and regional scale | Students are able to explain approaches in spatial interaction analysis, attraction between activity locations on a city and regional scale                | 12. Spatial analysis methods and techniques include: spatial interaction analysis with the intervening opportunity method                  | Students are able to explain and apply spatial interaction analysis   | 15. Spatial analysis using the intervening opportunity method | M1, M2, M3       | 480             | Face-to-face lectures, group presentations, case study discussions | Accurate understanding of theory and its implications for simple case studies                             | 10% individual and 10% group (total 20% for each presenting group) |
| 14   | Able to analyze spatial interactions, attraction between activity locations on a city and regional scale | Students are able to explain approaches in spatial interaction analysis, attraction between activity locations on a city and regional scale                | 13. Spatial analysis methods and techniques include: spatial interaction analysis with optimum location methods and other relevant methods | Students are able to explain and apply spatial interaction analysis   | 16. Spatial analysis with optimum location method             | M1, M2, M3       | 480             | Face-to-face lectures, group presentations, case study discussions | Accurate understanding of theory and its implications for simple case studies                             | 10% individual and 10% group (total 20% for each presenting group) |
| 15   | Able to formulate appropriate location decision making based on the case study that was appointed        | Able to make appropriate decisions in the context of solving problems in their area of expertise, based on the results of analysis of information and data | Observation / Field Survey on selected case studies  | Students are able to observe location factors obtained from the results of field observations/surveys on a case study | Material week 1 to 10   | M7               | 480             | Field observation and assistance                                   | The accuracy of observing the factors of site selection in the selected case studies and related theories | assistance and critical review (20%)                               |

| WE EK | COURSE LEARNING OUTCOME  | MODUL E LEARNING OUTCOME   | MODULE                               | FINAL ABILITY  | SCOPE                 | LEARNI NG METH ODS | COURSE DURATI ON | MODES OF DELIVERY                                       | GRADIN G POLICY  | SCOR ING   |
|-------|--|--|--------------------------------------|--|-----------------------|--------------------|------------------|---|--|--|
| 1     | 2  | 3  | 4                                    | 5  | 6                     | 7                  | 8                | 9   | 10   | 11   |
| 16    | Students are able to communicate the concept of location selection visually, verbally and in writing based on ICT. | Able to make appropriate decisions in the context of solving problems in their area of expertise, based on the results of analysis of information and data | Case Study Presentation with Problem | Students are able to explain the location factors obtained from the results of field observations/surveys on a case study, which is then linked to the classical location theory that has been studied and is able to use an appropriate location/spatial analysis technique approach. | Material week 1 to 16 | M7                 | 480              | Problem based case study discussion, group presentation | accuracy of approach, accuracy of using method, application of software, ability of prescription | Paper Quality 20%<br>• Scientific writing (20%)<br>• Review the suitability of the theory to the Case Study (20%)<br>• Methods and Analysis (40%)<br>• Lessons Learned (20%)<br><br>Individual performance in class presentation 10% |

## REFERENCES

1. Adisasmita, Rahardjo. 2008. *Pengembangan Wilayah: Konsep dan Teori*. Edisi 1. Graha Ilmu. Yogyakarta
2. Bendavid-Val, Avrom. 1991. *Regional and Local Economic Analysis for Practitioners*. Praeger Publishers. New York.
3. Chan, Yupo. 2011. *Location Theory and Decision Analysis: Analytics of Spatial Information Technology*. Springer. New York.
4. Djojodipuro, Marsudi. 1992. *Teori lokasi*. Lembaga Penelitian FE UI. Jakarta.
5. Eiselt, G.A. Vladimir Marianov, Eds. 2011. *Foundations of Location Analysis*. Springer. New York.
6. Robinson, Tarigan. 2005. *Ekonomi Regional: Teori Dan Aplikasi*. Edisi Revisi. PT. Bumi Aksara. Jakarta.
7. Rushton, Gerard 1973. *Optimal location of Facilities*. Compress. Iowa.
8. Rustiadi, Ernan dkk. 2009. *Perencanaan dan Pengembangan Wilayah*. Crestpent Press dan Yayasan Obor Indonesia. Jakarta
9. Stefan Nickel, Justo Puerto. 2005. *Location Theory: A Unified Approach*. Springer Verlag. Berlin.
10. Wibowo, Rudi, & Soetrisno, 2004. *Konsep, Teori, dan Landasan Analisis Wilayah*. Edisi Pertama. Bayumedia Publishing. Malang. Jawa



## EVALUATION PLAN

### COURSE EVALUATION

The mechanism and proportion of assessment for the Location and Spatial Analysis courses are arranged as follows:

#### EVALUATION I - 20%

paper and presentation 10%

Individual Performance 10%

#### EVALUATION II - 30% Middle Semester

Exam

Paper and presentation 20%

Individual Performance 10%

#### Evaluation IV – 20%

Critical Review

### Presentation (Individual Activity)

| Name                                |  |
|-------------------------------------|--|
| NRP                                 |  |
| Member                              | <ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> <li>5.</li> <li>6.</li> </ol> |
| Members Not Present and the Reasons |  |

### CRITERIA FOR EVALUATING LECTURE MATERIAL PRESENTATIONS (FOR PRESENTATIONS)

| Dimension               | Very Good  | Good   | Average  | Bad   | Very Bad   | Score |
|-------------------------|--|--|--|---|--|-------|
| Quality of Presentation | <p>The presentation was organized with showing fact that supported by example that already analyzed based on concept</p> | <p>The presentation was organized and showing fact that make sure to support the conclusions</p> | <p>The presentation has focus point and showing some evidence that support the conclusions</p> | <p>The presentation has focus point, but evidence were insufficient to used for make a conclusions.</p> | <p>no specific organization. Facts are not used to support their statement</p> |       |
|                         | 86-100   | 76-85  | 66-75  | 56-65   | 0-55   |       |

|      |  |  |   |   |  |
|------|--|--|---|---|--|
| t    | t that can be inspire listener to develop their minds. | Has accurate and complete presentation. The listener has a new knowledge about that topics | an accurate content but not complete. The listener less active to discuss that topics | The content was less accurate because there's no data and fact that supports it | The content are not accurate and very common. Listener didn't get any lessons from this presentation |
|      | 86-100   | 76-85  | 66-75   | 56-65   | 0-55   |
| sion | ht argumentation with example or the fact              | ht argumentation but lacking of the fact   | he lack of argumentation but have fact or example                                     | e lack of argumentation and not have example                                    | mentation is wrong   |

For criteria depth adjusted to TAXONOMY BLOOM

- COURSE Basic : Remembering, Understanding

- COURSE Intermediate : Applying, Analyzing
- COURSE Advance : Evaluating, Creating

## Report (Report Quality)

|               |  |
|---------------|--|
| <b>Group</b>  |  |
| <b>Member</b> | <ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> <li>5.</li> <li>6.</li> </ol> |

### CRITERIA REPORT OF MAJOR TASK (COURSE INTERMEDIATE)

| Chapter           | 86-100  | 76-85  | 66-75   | 56-65   | 0-55   |
|-------------------|---|--|---|---|--|
| Conclusion        | empirical facts and theoretical concept are completed and very relevant, the urgency of the problem is high                         | empirical facts and theoretical concept are completed and very relevant, but the urgency is not high | empirical facts and theoretical concept are stated but not relevant and urgent            | empirical facts and theoretical concept is not completed, not relevant and not urgent     | empirical facts and theoretical concept is not stated and couldnt for the research question  |
| Literature Review | literature review substance is completed and has stated more than the reference, the literature synthesis is completed and suitable | literature review substance is stated accordingly to TOR, the literature synthesis is suitable       | literature review for the topic but not completed, the literature synthesis is unsuitable | literature review for the topic and not completed, the literature synthesis is irrelevant | literature review is not completed and irrelevant, the literature synthesis is not completed |
| Methodology       | needed, how to obtain data and techniques to process data precisely and explained in detail   | needed and how to get the right data but the technique of processing data is not right               | get the right data, the data needed is less, the data processing technique is not right   | needed, how to obtain data and data processing techniques is not right                    | needed, how to obtain data and data processing techniques are not appropriate                |
| Data analysis     | analyze data, analysis right with the appropriate   | analyze data, precise analysis without   | analyze data with inappropriate analysis  | analyze data but not suitable and without analysis  | analyze data is incomplete and not suitable and without                                      |

|      | interpretation   | interpretation   |  | analysis  |  |
|------|--|--|--|---|--|
| sion | ality of conclusions is appropriate according to the results of the analysis and answers the research objectives | ality of conclusions is appropriate according to the results of the analysis but does not answer the research objectives | ality of conclusions is appropriate according to the results of the analysis but does not answer the research objectives | sion quality is not in accordance with the analysis and does not answer the research objectives | ality of conclusions is very inappropriate |

### 3. Quiz assessment criteria

#### CRITERIA FOR EVALUATING EXAMINATIONS / INDIVIDUAL QUIZZES

| Essay question | Very Good 86-100  | Good 76-85   | Average 66-75   | Bad 56-65  | Very Bad 0-55                           |
|----------------|---|--|---|--|---|
| Complete       | All keywords are answered with the right explanation with clear paths accompanied by examples | All keywords are answered with the right explanation but the plot is not clear | The keywords are partially answered with the right explanation without flow | Keywords are less precise, explanations that are less precise and without flow | There are no keywords and explanations  |
| Creativity     | Creativity of the answers are high and very precise   | Creativity of the answers are high but not right                               | Low and inaccurate creativity   | The answer is too general  | The answer is too general and not right |

#### Type of Individual Exam Questions / Quiz

| Intermediate |            |
|--------------|------------|
| Applying     | Analyzing  |
| Demonstrate  | Separating |
| Calculate    | Connecting |
| Connect      | Choose     |
| Prove        | Compare    |
| Produce      | Make a     |
| Show         | diagram /  |
| Complete     | scheme     |
| Provide      | Show       |

|      |              |
|------|--------------|
| Find | relationship |
|------|--------------|

#### 4. Critical Review

The evaluation weight for Evaluation I is 20%, which consists of:

##### CRITERIA FOR EVALUATING CRITICAL REVIEW

| Score | Learning Aspect  | Excellent<br>86-100  | Good<br>76-85   | Enough<br>66-75   | Bad<br>56-65  | Very Bad<br>0-55  | Score |
|-------|--|--|---|---|---|---|-------|
|       | Substance of the discussed issue with the topic                  | fit the topic, up to date, have proper issue formulation   | fit the topic, does not up to date, have proper issue formulation                   | partially fit the topic, up to date, but the issue formulation are not precise              | partially does not fit the topic, the issue formulation are not precise                         | partially does not fit the topic, there are no issue                    |       |
|       | Accuracy on summarizing the important idea on the article        | Accurate, with comprehensive idea of the issue   | Accurate, but with less comprehensive idea  | Partially accurate  | Partially accurate  | is no summary of the issue concept                                      |       |
|       | Accuracy of critical review towards the substance of the journal | Accurate, Precise on giving the critical review, Appropriate on picking the up to date reference               | Accurate on giving the critical review, Correct on picking the up to date reference | Partially accurate on giving critical review, but the references used are not precise       | Partially accurate, have less precise, Reference used are not precise                           | never give inappropriate critical review and choose the wrong reference |       |
|       | Structure of discussions and lessons learned                     | Discussions are structured and comprehensive, Learned answers the issue and give the example of best practices | Discussions are structured and comprehensive, Learned answers the issue             | There are discussions but not structured nor comprehensive, The lessons learned are correct | There are discussions but not structured nor comprehensive, The lessons learned are not correct | Discussions are not structured, lessons learned are not correct         |       |
|       | Average score obtained   |  |   |   |   |   |       |