

<b>Course</b>	<b>Course Name</b>	Advanced Planning Information Systems
	<b>Course Code</b>	DK184701
	<b>Credit</b>	3
	<b>Semester</b>	6

<b>Expected Learning Outcomes</b>	
<b>Specific Knowledge</b>	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>Professional Attitude</b>	Able to apply the techniques and processes of urban and regional planning in qualitative, quantitative, spatial modeling (geographic information systems) and presentation techniques
<b>Module Learning Outcomes</b>	
<ol style="list-style-type: none"> <li>1. Students are able to understanding the spatial data concept</li> <li>2. Students are able to understanding the raster data concept</li> <li>3. Students are able to practice several case studies using "Raster Calculator" tools</li> <li>4. Students are able to practice using "Raster Calculator" tools into specific case studies</li> <li>5. Students are able to understanding spatial regression analysis concept</li> <li>6. Students are able to understand sampling method concept for spatial data</li> <li>7. Students are able to understand some examples of spatial regression utilization</li> <li>8. Students are able to practice spatial regression analysis applications into specific case studies</li> <li>9. Students are able to understand model builder concept</li> <li>10. Students are able to understand some examples of model builder utilization</li> <li>11. Students are able to practice spatial model builder applications into specific case studies</li> <li>12. Students are able to understanding remote sensing concept and its application</li> <li>13. Students are able to practice how to get satellite data and read its characteristic</li> <li>14. Students are able to practice the utilization of image data through composite band</li> </ol>	

15. Students are able to practice image analysis data for land use analysis
16. Students are able to practice image data analysis for vegetation greenness index analysis
17. Students are able to practice the analysis of image data for the analysis of land surface temperature
18. Students are able to practice image analysis for sea surface temperature analysis
19. Students are able to practice the analysis of image data for the analysis of the distribution of chlorophyll-A in water
20. Students are able to practice the analysis of image data with a combination of mathematical modeling through the sample data
21. Students are able to practice the use of image data by choosing one of the case studies
22. Students are able to communicate verbally, visually, and written analysis of satellite image data utilization, raster calculator tools application, spatial regression analysis application, and model builder application in accordance with their respective case study example

### **Courses Learning Outcomes**

1. Students are able to explain the concept of satellite image data and remote sensing
2. Students are able to explain the characteristics of satellite image data
3. Students are able to utilize and analyze satellite image data for spatial planning purposes
4. Students are able to explain the concept of spatial data of raster format
5. Students are able to analyze raster data using "Raster Calculator"
6. Students are able to explain the concept of spatial linear regression analysis
7. Students are able to apply spatial linear regression analysis in case studies
8. Students are able to explain the concept of model builder
9. Students are able to apply concept builder model in case study

### **Module**

1. Theories and concepts of space
2. Spatial approach
3. Spatial Analysis Technique
4. Model of spatial optimization