ME3104 - Introduction to Satellite Meteorology

<table>
<tr><td colspan="5">COURSE LESSON PLAN
STUDY PROGRAM: METEOROLOGY
FACULTY/SCHOOL: FACULTY OF EARTH SCIENCES AND TECHNOLOGY
INSTITUT TEKNOLOGI BANDUNG</td></tr>
<tr><td colspan="2">Course Code: ME3104</td><td>Credits: 3</td><td>Semester: 5</td><td>Course Type: Compulsory course</td></tr>
<tr><td colspan="2">Course Name</td><td colspan="3">Pengantar Meteorologi Satelit</td></tr>
<tr><td colspan="2"></td><td colspan="3">Introduction to Satellite Meteorology</td></tr>
<tr><td colspan="2">Related Course</td><td>-</td><td colspan="2">-</td></tr>
<tr><td colspan="2" rowspan="12">Study Materials</td><td colspan="2">General remote sensing concepts.</td><td>Expose</td></tr>
<tr><td colspan="2">Satellite remote sensing concepts.</td><td>Expose</td></tr>
<tr><td colspan="2">Physical foundations of satellite remote sensing.</td><td>Expose</td></tr>
<tr><td colspan="2">Sprektrum Gelombang Elektromagnetik,</td><td>Expose</td></tr>
<tr><td colspan="2">Application of Planck’s Law, Wien’s Displacement Law, and the Stefan–Boltzmann Law,</td><td>Expose</td></tr>
<tr><td colspan="2">Application of Kirchhoff's Law.</td><td>Expose</td></tr>
<tr><td colspan="2">Interaction of electromagnetic waves with matter.</td><td>Expose</td></tr>
<tr><td colspan="2">Sensor systems.</td><td>Expose</td></tr>
<tr><td colspan="2">Types of satellites by orbit and classification.</td><td>Expose</td></tr>
<tr><td colspan="2">Satellite data characteristics.</td><td>Expose</td></tr>
<tr><td colspan="2">Visible and infrared data.</td><td>Expose</td></tr>
<tr><td colspan="2">Satellite data applications for determining meteorological parameters, rainfall estimation, and nephanalysis.</td><td>Explore</td></tr>
<tr><td colspan="2">Cloud analysis and weather analysis from satellite data.</td><td>Explore</td></tr>
<tr><td colspan="5">Learning Outcomes</td></tr>
<tr><td colspan="2">Code</td><td colspan="3">LO</td></tr>
<tr><td colspan="2">PLO-2.3</td><td colspan="3">PLO-4: Able to explain the fundamental principles of weather observation, including types, functions, and measurement standards of weather and climate parameters. (C2)</td></tr>
<tr><td colspan="2">PLO-3.2</td><td colspan="3">PLO-6: Able to process large-scale digital weather and climate data to understand weather and climate phenomena. (C3)</td></tr>
<tr><td>Code</td><td>CO</td><td colspan="3">Elements of Course Learning Outcomes (CO)</td></tr>
<tr><td rowspan="3">PLO-2.3</td><td>1</td><td colspan="3">Students are able to explain the development, concept, and importance of satellite remote sensing in Meteorology. (C2)</td></tr>
<tr><td>2</td><td colspan="3">Students are able to explain the role of electromagnetic waves in satellite remote sensing and the sensor systems used. (C2)</td></tr>
<tr><td>3</td><td colspan="3">Students explain ecliptic coordinates, satellite orbit types, satellite classifications, and satellite data characteristics by channel and orbit type. (C2)</td></tr>
<tr><td>PLO-3.2</td><td>4</td><td colspan="3">Students are capable of processing satellite data using computer equipment. (C3)</td></tr>
<tr><td colspan="2">Learning Methods</td><td colspan="3">Lecture
Group Discussion
Cooperative Learning
Problem-based Learning</td></tr>
<tr><td colspan="2">Learning Modalities</td><td colspan="3">Synchronous learning
Blended/Online Asynchronous</td></tr>
<tr><td colspan="2">Assessment Method</td><td colspan="3">Assessment components: Midterm Examination (30%), final examination (30%), laboratory/practicum (30%), tugas (5%), and quizzes (5%). Skala penilaian: 80–100% A (maximum competency) 75–80% AB (very good competency) 65-75% B (good competency) 60–65% BC (satisfactory competency) 55–60% C (minimum competency) 45–54% D (below minimum competency) <45% E (far below minimum competency)</td></tr>
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