



Bachelor Program in Geophysics

Faculty of Mathematics and Natural Sciences
HASANUDDIN UNIVERSITY

Specialization Competency Courses

1. Renewable Energy

Module Name	:	Renewable Energy
Module Level	:	Bachelor
Code, if applicable	:	23H06121402
Subtitle, if applicable	:	-
Courses, if applicable	:	Renewable Energy
Semester(s) in which the module is taught	:	III (Third Semester)
Module coordinator(s)	:	Drs. Erfan, M.Si.
Lecturer(s)	:	Drs. Erfan, M.Si.
Language	:	Bahasa (Indonesian language)
Relation to curriculum	:	Elective course in the second year for Bachelor Degree in Geophysics
Type of teaching, contact hours	:	This course is delivered through Lectures (i.e., Project/Case-based learning), complemented by structured assignments (paper review, project/case evaluation) and independent study. Contact hours consist of 100 minutes lectures per week, plus 120 minutes per week for each of the following: structured assignments and independent study
Workload	:	Total workload is 90 hours per semester, consisting of 28 hours for lectures, and 31 hours each for structured assignments and independent study
Credit points	:	2 SKS (3.2 ECTS)
Requirements according to the examination regulations	:	Students are eligible to attend the examination if their absences are less than 20% of the lectures
Recommended prerequisites	:	-
Module objectives/intended learning outcomes	:	After completion of this module, students will be able to: CLO 1. Able to interpret the concept of renewable energy; CLO 2. Able to interpret energy concepts; CLO 3. Describe the forms of solar energy and their uses; CLO 4. Describe the forms of wind energy and their uses; CLO 5. Describe the forms of water energy and their use;



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		CLO 6. Describe the form of biomass energy and its use; CLO 7. Describe the forms of geothermal energy and their uses; CLO 8. Describe the concept of energy conservation and policy. The following is the mapping of the ILO and the CLO of this course: <table><tr><td></td><td>ILO 5</td><td>ILO 11</td><td>ILO 12</td></tr><tr><td>CLO 1</td><td>✓</td><td></td><td></td></tr><tr><td>CLO 2</td><td>✓</td><td></td><td></td></tr><tr><td>CLO 3</td><td></td><td>✓</td><td></td></tr><tr><td>CLO 4</td><td></td><td>✓</td><td></td></tr><tr><td>CLO 5</td><td></td><td>✓</td><td></td></tr><tr><td>CLO 6</td><td></td><td></td><td>✓</td></tr><tr><td>CLO 7</td><td></td><td></td><td>✓</td></tr><tr><td>CLO 8</td><td></td><td></td><td>✓</td></tr></table>		ILO 5	ILO 11	ILO 12	CLO 1	✓			CLO 2	✓			CLO 3		✓		CLO 4		✓		CLO 5		✓		CLO 6			✓	CLO 7			✓	CLO 8			✓
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Content	:	1. Energy concepts 2. Solar energy 3. Water energy 4. Wind energy 5. Biomass, biogas, biofuel 6. Geothermal energy 7. Energy conservation and policy.																																				



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Study and examination requirements	Students are expected to arrive at least 15 minutes before the scheduled class begins and ensure that all electronic devices are switched off during the session. In the event of absence due to illness or other valid circumstances, students are required to notify the lecturer in advance. All course assignments must be completed and submitted within the specified deadlines. In addition, students are required to participate in the examination as part of the requirements for obtaining a final course grade																														
Exams and assessment formats	Participants are marked based on their performance in theory: Project/ Case Study (100%). Students are marked based on their percentage of points obtained and based on the following grade scale: <table><tr><th>Percentage of Achievement</th><th>Grade</th><th>Conversion Value</th></tr><tr><td>85 – 100</td><td>A</td><td>4.00</td></tr><tr><td>80 - <85</td><td>A-</td><td>3.75</td></tr><tr><td>75 - < 80</td><td>B+</td><td>3.5</td></tr><tr><td>70 - < 75</td><td>B</td><td>3.0</td></tr><tr><td>65 - < 70</td><td>B-</td><td>2.75</td></tr><tr><td>60 - < 65</td><td>C+</td><td>2.5</td></tr><tr><td>50 - < 60</td><td>C</td><td>2.00</td></tr><tr><td>40 - < 50</td><td>D</td><td>1.00</td></tr><tr><td>< 40</td><td>E</td><td>0.00</td></tr></table>	Percentage of Achievement	Grade	Conversion Value	85 – 100	A	4.00	80 - <85	A-	3.75	75 - < 80	B+	3.5	70 - < 75	B	3.0	65 - < 70	B-	2.75	60 - < 65	C+	2.5	50 - < 60	C	2.00	40 - < 50	D	1.00	< 40	E	0.00
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Reading list	1. Main References: 1. Silitonga, A. S., & Ibrahim, H. (2020). Buku Ajar Energi Baru dan Terbarukan. Deepublish. 2. Apribowo, C. H. B. (2021). Buku Ajar Perancangan Pembangkit Energi Baru dan Terbarukan. Media Sains Indonesia. Additional References: 1. Buku Panduan Energi yang Terbarukan, PNPM Mandiri 2. Buku Putih Penelitian, Pengembangan dan Penerapan IPTEK Indonesia 2005 -2025.																														
Last revision date	July 1 st , 2025																														