Module Handbook

Courses	Thermodynamics
Programme	Undergraduate Program (S-1)/Bachelor
Code	
Semester	3
Group of Course Coordinator	Dr. Asnawi, M.Si
Lecturers	1. Dra. Suliyanah, M.Si 2. Dr. Frida Ulfah Ermawati, M.Sc 3. Lydia Rohmawati, M.Si
The language used	Indonesian
Classification in the curriculum	Compulsory Courses
Learning format / number of class hours per week	Per-week consists of: 3 hours face to face (1 hour face to face = 50 minutes)
Load	3 hours face to face, 3 hours structured assignments, 3 learn to be independent per-week, for 15 weeks = a total of 135 hours face-to-face / semester
Credit Unit	3 CU = 4.77 ECTS
Precondition	Basic Physics 1 Basic Physics 2
Course Learning Outcome	1. able to manifest character independently and honestly in carrying out thermodynamic lecture assignments 2. can analyze in a structured manner the concept of heat, the laws of thermodynamics to the existence of an ideal gas in a system to its application in thermodynamics 3. able to think critically, innovate, and work scientifically to study the laws of thermodynamics II and the Carnot cycle, and to be able to evaluate and be responsible both independently and in groups. can formulate and mathematically formulate entropy systems, and be able to communicate scientifically and work effectively both individually and in groups.
Courses content	The thermodynamics course discusses the concepts/principles/theories/basic laws of thermodynamics (physics content knowledge) that underlies thermodynamic study materials in depth covering temperature and the zero law of thermodynamics, some simple thermodynamic systems, work, heat and the first law of thermodynamics. , ideal gas, second law of thermodynamics, Carnot cycle and thermodynamic temperature scale, and entropy, and able to communicate scientifically and work effectively both independently and in groups, with assessment in the form of assignments, mid test and final exam
Attributed soft skill	scientific report public speaking team work

<table>
<tr><td>Learning achievement (assesment)</td><td>Students are considered competent and pass if they get at least a minimum test score of 68 for mid test (SS) and final exam (S), assignments (A), and participation (P), where the final grade (FG) is calculated following the formula:
Final Grade of the course (FG) = 20% P + 30% A + 20% SS + 30%S

Convert the 0-100 scale value to a 0-4 scale and the letters are arranged as follows:
<table>
<tr><th>Letter</th><th>Number</th><th>Interval</th></tr>
<tr><td>A</td><td>4,00</td><td>85 ≤ A < 100</td></tr>
<tr><td>A-</td><td>3,75</td><td>80 ≤ A- < 85</td></tr>
<tr><td>B+</td><td>3,50</td><td>75 ≤ B+ < 80</td></tr>
<tr><td>B</td><td>3,00</td><td>70 ≤ B < 75</td></tr>
<tr><td>B-</td><td>2,75</td><td>65 ≤ B- < 70</td></tr>
<tr><td>C+</td><td>2,50</td><td>60 ≤ C+ < 65</td></tr>
<tr><td>C</td><td>2,00</td><td>55 ≤ C < 60</td></tr>
<tr><td>D</td><td>1,00</td><td>40 ≤ D < 55</td></tr>
<tr><td>E</td><td>0,00</td><td>0 ≤ E < 40</td></tr>
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</td></tr>
<tr><td>Media form</td><td>1. Power point file
2. e-book file</td></tr>
<tr><td>References</td><td>1. Mark W. Zemansky and Richard H.Dittman. 1997. Heat and Thermodynamics, Seventh Edition, McGraw- Hill,Companies, Inc
2. Darmawan B. 1990. Termodinamika. Jurusan Fisika FMIPA-ITB
3. Yunus A.Cengel and Michael Boles.1994.Thermodynamics An Engineering Approach, Second Edition, McGraw-Hill,Inc</td></tr>
<tr><td>Note</td><td></td></tr>
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