



# CURRICULUM

## SUSTAINABLE ENERGY AND ENVIRONMENT

Academic Year 2020/2021

SEMESTER 1			SEMESTER 2		
	SKS	ECTS		SKS	ECTS
English 1	2	3	English 2	2	3
Calculus and Linear Algebra 1	3	4	Calculus and Linear Algebra 2	3	4
Physics 1	2	3	Physics 2	2	3
Physics 1 Laboratory	1	2	Physics 2 Laboratory	1	2
Chemistry 1	3	4	Chemistry 2	3	4
Chemistry 1 Laboratory	1	2	Chemistry 2 Laboratory	1	2
Introduction to Information Technology	2	3	Engineering Statistics	2	3
Introduction to Electrical Engineering	2	3	Introduction to Environmental Engineering	2	3
Energy Policy and Conventional Energy	2	3	Microbiology	2	3
Indonesian Language	2	2	Entrepreneurship	2	3
			Ethics and Religious Philosophy	2	3
<b>Total Mandatory</b>	<b>20</b>	<b>29</b>	<b>Total Mandatory</b>	<b>22</b>	<b>33</b>
Extracurricular Courses			Extracurricular Courses		
German Language and Culture 1	2	0	German Language and Culture 2	2	0
<b>TOTAL</b>	<b>22</b>	<b>29</b>	<b>TOTAL</b>	<b>24</b>	<b>33</b>

SEMESTER 3			SEMESTER 4		
	SKS	ECTS		SKS	ECTS
English 4	2	3	English 3	2	3
Internship 1 (Indonesia)	2	6	Unit Operations	2	4
Materials and Energy Balance	3	4	Heat Transfer	2	4
Analytical Instrumentation	2	3	Transport Phenomena	2	3
Applied Mathematics	2	3	Physical Chemistry	2	4
Renewable Energy 1 (Bioenergy-Ocean)	3	6	Chemical Reactions and Kinetics	2	4
Fluid Mechanics	2	3	Renewable Energy 2 (Solar-Wind-Hydro)	3	6
Thermodynamics	3	4	Numerical Methods	2	3
Thermodynamics Laboratory	1	2	Separation Technology	3	4
Engineering Economics and Analysis*	2	3	Pancasila and Civic	3	4
<b>Total Mandatory</b>	<b>22</b>	<b>37</b>	<b>Total Mandatory</b>	<b>23</b>	<b>39</b>
Extracurricular Courses					
German Language and Culture 3	4	0			
<b>TOTAL</b>	<b>26</b>	<b>34</b>	<b>TOTAL</b>	<b>23</b>	<b>39</b>

<b>SEMESTER 5</b>	<b>SKS</b>	<b>ECTS</b>
Environmental Chemistry	4	6
Waste Treatment & Resources Efficiency	4	6
Ecobalance	2	3
Decentralized Energy Supply Environment & Process Metrology	2	3
	4	6
Water Purification	4	6
<b>Total Mandatory</b>	<b>20</b>	<b>30</b>
<b>TOTAL</b>	<b>20</b>	<b>30</b>

<b>SEMESTER 6</b>	<b>SKS</b>	<b>ECTS</b>
Internship 2 (abroad)	5	28
Returnee Seminar	1	2
<b>Total Mandatory</b>	<b>6</b>	<b>30</b>
<b>TOTAL</b>	<b>6</b>	<b>30</b>

<b>SEMESTER 7</b>	<b>SKS</b>	<b>ECTS</b>
English 5	2	3
Plant Design and Energy Modelling	4	6
Research Methodology	2	3
Process Control	2	3
Hydrogen-Nuclear Energy	2	3
Energy Conservation and Audit	3	6
Process Equipment Design	2	3
Elective Subject*	3	5
<b>Total Mandatory</b>	<b>20</b>	<b>32</b>
<b>Elective Subjects</b>		
Bioprocess Engineering	3	5
Reactor Engineering	3	5
Materials Science	3	3
Extracurricular Courses		
Industrial Electrical System	3	2
<b>Total</b>	<b>32</b>	<b>47</b>

<b>SEMESTER 8</b>	<b>SKS</b>	<b>ECTS</b>
Professional Competence Assessment (PCA)	3	4
Thesis	6	15
Character and Professional Development Program (CPDP)*	2	
<b>Total Mandatory</b>	<b>11</b>	<b>19</b>
<b>TOTAL</b>	<b>11</b>	<b>19</b>

Total Offered SKS (Sistem Kredit Semester) : 164 SKS  
 Total Mandatory : 144 SKS  
 Total ECTS : 249 ECTS

SKS : Satuan Kredit Semester  
 ECTS : European Credit Transfer System