



**Our Partner:**



## About Sustainable Energy and Environment

Our current world concern is how life can continue a sustainable basis. This mainly refers to the fact that fossil fuels are predicted to run out in 2060 and the world temperatures continue to rise. Sustainable Energy & Environment, under the SGU Chemical Engineering Study Program, focuses on renewable energy, energy conservation, the environment, water resources and prepares the human resources needed for these developments, for Indonesia and for the world. In short, when you learn this, you will actively contribute to saving the future.

### Career Prospect

Graduates of this program can be employed in new and renewable energy sectors, and other sectors, such as chemical, petrochemical, palm oil, gas, and oil companies, as well as in various companies that place a priority on energy conservation and the environment. They also can work as consultants, engineers, specialists, researchers, and entrepreneurs.

### International Academic Experience:

- Joint Degree Program with **Ernst-Abbe-Hochschule Jena** (approx. 1 year), get Sarjana Teknik (S.T.) and Bachelor of Science (B.Sc.) degrees.
- Internship program to ensure students receive global professional experience.
- Experience student exchange in several **European and Asian** countries.
- Accelerate Success with the **SGU-University of Missouri - Kansas City** Fast Track Program

Alumni of the Pharmaceutical Engineering Study Program have been accepted into top-tier firms, and the study program has established industry partnership, such as:



# CURRICULUM

DOUBLE DEGREE  
Academic Year 2024/2025

## SEMESTER 1

English 1  
Calculus and Linear Algebra 1  
Physics 1  
Physics 1 Laboratory  
Chemistry 1  
Chemistry 1 Laboratory  
Introduction to Information Technology  
Introduction to Electrical Engineering  
Energy Policy and Conventional Energy  
Indonesian Language

### Extracurricular Courses

German Language and Culture 1

## SEMESTER 2

English 2  
Calculus and Linear Algebra 2  
Physics 2  
Physics 2 Laboratory  
Chemistry 2  
Chemistry 2 Laboratory  
Engineering Statistics  
Introduction to Environmental Engineering  
Engineering  
Microbiology  
Ethics and Religious Philosophy

### Extracurricular Courses

German Language and Culture 2

## SEMESTER 3

English 3  
Internship 1 (Indonesia)  
Materials and Energy Balance  
Analytical Instrumentation  
Applied Mathematics  
Renewable Energy 1 (Bioenergy-Ocean)  
Thermodynamics  
Thermodynamics Laboratory  
Transport Phenomena

### Extracurricular Courses

German Language and Culture 3

## SEMESTER 4

English 4  
Unit Operations  
Heat Transfer  
Engineering Economics and Analysis  
Physical Chemistry  
Chemical Reactions and Kinetics  
Renewable Energy 2 (Solar-Wind-Hydro)  
Numerical Methods  
Separation Technology  
Fluid Mechanics

## SEMESTER 5

Environmental Chemistry  
Waste Treatment & Resources Efficiency  
Ecobalance  
Decentralized Energy Supply  
Environment & Process Metrology  
Water Purification

## SEMESTER 6

Internship 2 (abroad)  
Returnee Seminar

## SEMESTER 8

English 5  
Plant Design and Energy Modelling  
Research Methodology  
Process Control  
Hydrogen-Nuclear Energy  
Energy Conservation and Audit  
Process Equipment Design  
Entrepreneurship  
Elective Subjects  
Bioprocess Engineering  
Materials Science

### Extracurricular Courses:

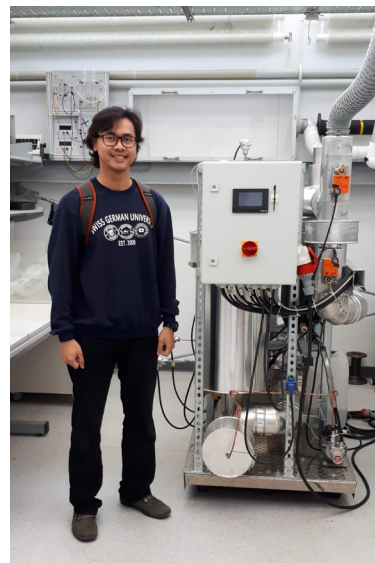
Industrial Electrical System

## SEMESTER 8

Professional Competence Assessment (PCA)  
Thesis  
Character and Professional Development Program (CPDP)\*  
Pancasila and Civic



# INTERNSHIP EXPERIENCES



Contact Us:

**SWISS GERMAN UNIVERSITY**

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