

*(For all students in the Program)*

## Undergraduate Minor Program in Sustainable Energy Engineering

The Minor Program in Sustainable Energy Engineering is designed mainly for engineering students, but also open to students from other Schools with knowledge in foundation Calculus (e.g. MATH 1012, MATH 1013, MATH 1020, or MATH 1023. Students who have not taken one of these courses but obtained grade A- or above in MATH 1003 may also be considered). Any undergraduate students with an overall CGA of 2.5 or above may enroll in this Minor Program. Students must declare their intention to enroll in the Minor Program no earlier than the first regular term of their second year of study but no later than the last day of the add/drop period in the first regular term of their final year of study. Students who wish to withdraw from the Minor Program should apply before the last day of the add/drop period in the first regular term of their final year of study.

### Minor Requirements

To graduate with a minor in Sustainable Energy Engineering, students must have enrolled in the Minor Program and complete a minimum total of 18 credits and all of its requirements, as well as the requirements of the major program of study.

For credit transfer, students can transfer a maximum total of 6 credits to the Minor Program.

Out of the total credits required by the minor program, at least 9 credits should be single-counted within the minor and are not used to fulfill any other requirements for graduation except the 120-credit degree requirement.

### Required Course(s)

			<b>Credit(s) attained</b>
ELEC/MECH		Note: ELEC 2500 <u>OR</u> MECH 1902	3
ELEC	2500	Introduction to Smart Electric Power Systems	3
MECH	1902	Energy Systems in a Sustainable World	3
CENG/MECH/ PHYS		Note: CENG 2210 <u>OR</u> MECH 2310 <u>OR</u> PHYS 4050	3
CENG	2210	Chemical Engineering Thermodynamics	3
MECH	2310	Thermodynamics	3
PHYS	4050	Thermodynamics and Statistical Physics	3
SOSC/SUST		Note: SOSC 1170 <u>OR</u> SUST 1000	
SOSC	1170	Environmental and Energy Governance in China	3
SUST	1000	Introduction to Sustainability	3

### Elective(s)

			<b>Minimum credit(s) required</b>
SENG/SSCI/ IPO		Sustainable Energy Engineering Electives (3 courses from the specified elective list, out of which at least 6 credits must be at 3000-level or above. Course(s) taken as required course(s) of the program may not be counted towards this elective requirement.)	9

Energy and Environmental Sustainability

CIVL	1170	Big History, Sustainability and Climate Change	3
MECH	1902	Energy Systems in a Sustainable World	3
ENVR	3110	Sustainable Development	3
ENVR	3220	Energy Resources and Usage	3
PHYS	1003	Energy and Related Environmental Issues	3
SUST	1000	Introduction to Sustainability	3

Energy Conversion

ELEC	2500	Introduction to Smart Electric Power Systems	3
ELEC	4430	Integrated Power Electronics	3
CENG	4140	Energy Resources, Conversions and Technologies	3
MECH	3300	Energy Conversion	3
MECH	3630	Electrical Technology	3

Energy Efficiency

MECH	1905	Buildings for Contemporary Living	3
ENVR	3003	Green Buildings and Energy Efficiency	3

Sustainable Energy Generation

ELEC	4530	Fundamentals of Photovoltaic and Renewable Energy	3
CHEM	4640	Chemistry for Advanced Solar Cell Technologies	3