CIVIL AND ENVIRONMENTAL ENGINEERING DEPARTMENT

SUSTAINABLE ENGINEERING MINOR

Sustainable engineering describes a new approach for solving complex classes of social problems that result from the rising competition for increasingly limited supplies of resources, water, and land. It seeks to transform engineering practice to meet these challenges. Interdisciplinary in nature and application, sustainable engineering involves the application of life cycle assessment and other innovative techniques to determine the long term implications of a proposed design solutions with the ultimate goal of minimizing overall environmental impacts from products, services, businesses, communities, and nations, as well as create engineering solutions that are fair and just in a global societal context.

SOUTH DAKOTA SCHOOL OF MINES & TECHNOLOGY

Program Coordinator: Dr. Jennifer Benning
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REQUIRED CORE COURSES:

Students may pursue a Minor in Sustainable Engineering by completing 18 credit hours of course work that includes two required courses:

CEE 325	Introduction to Sustainability
CEE 425	Sustainable Engineering

Six elective credits are selected from the following engineering courses with sustainability content, with a minimum of three credits outside their major:

CEE 326	Environmental Engineering I
CEE 337	Engineering Hydrology
CBE 455/555	Pollution Phenomena & Process Design
ONE OF THE FOLLOWING	
IENG 352	Creativity & Innovation
IENG 431/531	Industrial Hygiene
IENG 451	Operational Strategies
IENG 475	Computer-Controlled Mfg. Syst. & Robotics
GEOE 211	Earth Systems Engineering Analysis
ME 492	Sustainable Energy
MET 220	Mineral Processing & Resource Recovery
MET 310	Aqueous Ext., Concentration & Recycling
MET 321	High Temp. Ext., Concentration, & Recycling
MEM 120	Intro. to Mining, Sustainable Dev. & Intro. Mgmt.
MEM 405	Mine Permitting & Reclamation

Three elective credits are selected from the following list of science or mathematics courses with sustainability content:

ATM 403/503	Biogeochemistry
ATM 405/505	Air Quality
ATM 406/506	Global Environmental Change
BIOL 311	Principles of Ecology
BIOL 341	Microbial Syst. in Engr. & Natural Sciences
GEOL 351	Earth Resources & the Environment
GEOG 400	Cultural Geography
MATH 451	Mathematical Modeling

Finally, three elective credit hours are selected from the following list of humanities/social science courses with sustainability content:

ANTH 210	Cultural Anthropology
ENGL 300	Literary Experiences of Nature
HUM 200	Connections: Humanities & Technology
POLS 250	World Politics
POLS 407	Environmental Law & Policy

These course requirements provide students with the broad, cross-disciplinary background that leads to the type of interdisciplinary, systems thinking that is essential for developing sustainable solutions.

You must fill out the Notification of Intent to Seek a Minor form, with the appropriate signatures and turn it in to the registrar's office by the beginning of the first semester of your senior year. This is only a sample program of study. For full details please consult the catalog at catalog.sdsmt.edu and the department website.

SOUTH DAKOTA SCHOOL OF MINES AND TECHNOLOGY
NOTIFICATION OF INTENT TO SEEK A MINOR

DATE _____

TO Registrar and Academic Services

FROM _____ _____
NAME STUDENT ID NUMBER

I propose to qualify for a minor in the following field of study _____

My Major is _____

My anticipated date of graduation is _____

I understand that at least 18-24 semester credits are required in subjects approved by the Major and Minor departments of study. A total of 9 credits of the 18-24 semester credits must be taken at SDSM&T and cumulative GPA average of 2.00 or better is required.

The subjects that are to be used to meet the requirements for the designated minor are

DEPT.	COURSE#	TITLE	CREDIT HOURS

Courses approved on _____ by _____ Major Department
Date Signature

Courses approved on _____ by _____ Minor Department
Date Signature of Minor Coordinator

I request that upon graduation the listing of this minor by included on my transcript.

_____
Signature

_____
Date