

Mechanical Engineering Course Selection Notes

An excerpt from the [SDSM&T catalog](#) has been printed on the back of this sheet that gives the recommended schedule to graduate with your Bachelor's of Science in [Mechanical Engineering](#) in a 4-year timeframe. Please note the following when scheduling your classes on Banner.

1. Humanities/social science requirements (Lower level)
 - 6 credits of lower level social sciences (Goal #3) and 6 credits of lower level humanities (Goal #4) are required to satisfy the indicated general education requirement goals
 - Social sciences have to be from two different disciplines (course prefixes)
 - Humanities can either be from two different disciplines (course prefixes) or a sequence of foreign/native languages: Fren 101/102, Ger 101/102, Lakl 101/102, Span 101/102
 - Art and Arth are considered the same prefix
 - MUS 117 (series of Music in Performance): 1 credit each (3 credits total)
 - Refer to the SYSTEMWIDE GENERAL EDUCATION REQUIREMENTS CHECKLIST to determine courses that satisfy these requirements (taking SDSM&T courses is recommended)
2. Course prerequisites
 - When deviating from the recommended 4-year schedule, consult with your advisor to make sure you will be meeting upcoming course prerequisites (see Mechanical Engineering Flow Chart)
 - Calculus series of courses needed for majority of ME courses
 - Long mechanics series: Statics of Mechanisms, Dynamics of Mechanisms and Intro to Solid Mechanics, Solid Mechanics, and Machine Design I
 - If you get behind in sequencing you may find yourself unable to take 12 credits of required credits toward your graduation. If so, and you need to take additional credits to reach full-time status, you may want to consider a minor (e.g., Entrepreneurial studies, Math, Met, etc.). Discuss with your advisor.
3. A C or better is needed in ME core courses before moving along in sequence (marked with an *)
4. Upper level humanities/social science
 - 3 credits needed at the upper level
 - Refer to the [General Education Requirements](#) section of the catalog for courses listed under the upper level designations (make sure to note subscripts).
 - BADM 350/360 along with most 300/400 level ANTH, ART, ARTH, ENGL, GEOG, HUM, MUS, POLS, PSYC, and SOC are accepted from South Dakota Regental Universities.
 - Verify course selection with your advisor
5. COOP
 - A coop experience is highly recommended and is good to take after your sophomore year. It is mandatory to consult with your advisor and coop coordinator, Dr. Abata, before departing on your coop to fully understand the benefits and requirements. This can potentially replace one ME 400 senior elective (3 credits).
 - Also note that a coop during the academic year will bump you off of a 4-year schedule. You can compensate for this by enrolling in the accelerated master's program, taking 9 or 10 semesters of classes (reduced number of credits), going on two coops, taking overload (18-20 credits/semester), or obtaining a minor/certificate.
6. Accelerated Master's Degree
 - Enrolling in our accelerated master's degree program in your junior year is highly recommended. If your cumulative GPA in your junior year is 3.0 or higher than you qualify! The accelerated master's degree program allows you to obtain a master's degree in only one additional year of studies. The program allows you to apply up to 9 credits from your BS degree toward your MS degree requirements. Mechanical engineering students do this by taking three 500 or 600 level courses for their senior electives and these same courses will be counted toward the MS degree. Consult with your academic advisor in your junior year about enrolling in the accelerated master's program.
7. Senior design
 - Ideally, all ME 300 level and lower courses would have been completed before starting senior design. Nevertheless, you may enroll in ME 477 if you are missing **one** ME 300 level course: Thermal Science (ME 312, ME 313, ME 331), Mechanics (ME 316, ME 322), and Controls (ME 351, ME 352).
 - The senior design sequence is offered in the Fall/Spring sequence only. Plan accordingly!

Mechanical Engineering Curriculum/Checklist

Students are responsible for checking with their advisor for any program modifications that may occur after the publication of this catalog.

Freshman Year¹

First Semester

MATH 123**	Calculus I	4
CHEM 112	General Chemistry I	3
CHEM 112L	General Chemistry I Lab	1
ME 110/L	Intro to Mechanical Engr./Lab	2
ENGL 101***	Composition I	3
Humanities or Social Sciences Elective(s)		3
TOTAL		16

Second Semester

MATH 125**	Calculus II	4
PHYS 211/A	University Physics I/Recitation	3
CSC 170/L	Programming for Eng. & Sci.	3
Humanities or Social Sciences Elective(s)		6
ME 126L	PDD: Design for Manuf. Lab	2
TOTAL		18

Sophomore Year

First Semester

ENGL 279***	Technical Communications I	3
ME 210**	Statics of Mechanisms	3
MATH 225	Calculus III	4
PHYS 213/A	University Physics II/Recitation	3
PHYS 213L	University Physics II Lab	1
Choose 4 credits from:		
ME 264/L	Electromech. Sys. PDD/Lab	4
	OR	
ME 265/L	PDD: Systems Eng./Lab	4
	OR	
ME 269/L	Energy Systems PDD/Lab	4
TOTAL		18

Second Semester

MATH 321	Differential Equations	3
ME 211**	Intro to Thermodynamics	3
ME 216**	Intro to Solid Mechanics	3
ME 221**	Dynamics of Mechanisms	3
MET 231	Properties of Materials Lab	1
MET 232	Properties of Materials	3
TOTAL		16

Junior Year

First Semester

ENGL 289***	Technical Comm II	3
ME 316	Solid Mechanics	3
EE 301/L	Introductory Circuits, Machines, and Systems	4
ME 331	Thermo Fluid Dynamics	3
MATH 373	Intro to Numerical Methods	3
TOTAL		16

Second Semester

ME 312	Thermodynamics II	3
ME 313	Heat Transfer	3
ME 352	Intro to Dynamic Systems	3
ME 322	Machine Design I	3
ME 351/L	Mechatronics and Meas Syst	4
TOTAL		16

Senior Year

First Semester

ME 477	Mechanical Engr Design I	2
ME 481L	Advanced Prod. Dev. Lab I	1
IENG 301	Basic Engineering Economics	2
ME 4XX	Mechanical Engr Elective #1	4
ME 4XX	Mechanical Engr Elective #2	3
Humanities or Social Sciences Elective(s)		3
TOTAL		15

Second Semester

ME 479	Mechanical Syst Design II	2
ME 482L	Advanced Prod. Dev. Lab II	1
ME 4XX	Mechanical Engr Elective #3	3
ME 4XX	Mechanical Engr Elective #4	3
Humanities or Social Sciences Elective(s)		3
MATH 381	Probability/Statistics	3
TOTAL		15

130 credits required for graduation

Curriculum Notes

** A minimum grade of C is required in this course as a prerequisite for 1 or more subsequent required courses.

***ENGL 101, 279, & 289 are recommended courses to fulfill the General Education requirements. Other courses may be used to satisfy the General Education requirements. Students should consult the "General Education Requirements" section of the catalog and discuss their course selections with their advisor.

¹ Many courses are prerequisites for other courses, and their sequencing is important. A faculty advisor should be consulted for any deviation from the above schedule.

Baccalaureate General Education Curriculum Requirements Students Entering Fall 2005 or Later

GOAL #1: Students will write effectively and responsibly and will understand and interpret the written expression of others. (6 credits)

ANTH/SOC 211	Social Science Writing	3 hrs	ENGL 279	Technical Communications I	3 hrs
CJUS 202	Writing & Research in Criminal Justice	3 hrs	ENGL 289	Technical Communications II	3 hrs
ENGL 101	Composition I	3 hrs	ENGL 283	Introduction to Creative Writing	3 hrs
ENGL 201	Composition II	3 hrs	POLS 202	Writing & Research in Political Science	3 hrs
ENGL 205	Business Writing	3 hrs	UHON 110	Honors English	3 hrs
ENGL 284	Introduction to Criticism	3 hrs	UHON 211	Honors Interdisciplinary Civilizations II	3 hrs
ENGL 277	Tech Writing in Engineering	3 hrs			

GOAL #2: Students will communicate effectively and responsibly through listening and speaking. (3 credits)

ENGL 279	Technical Communications I	3 hrs	SPCM 215	Public Speaking	3 hrs
ENGL 289	Technical Communications II	3 hrs	SPCM 222	Argumentation and Debate	3 hrs
SPCM 101	Fundamentals of Speech	3 hrs	UHON 101	Honors Speech Communication	3 hrs

GOAL #3: Students will understand the organization, potential, and diversity of the human community through study of the social sciences. (6 credits, in 2 disciplines or course prefixes)

ABS 203	Global Food Systems	3 hrs	INFO 102	Social and Ethical Aspects of	3 hrs
AIS/HIST 257	Early Amer Indian Hist &	3 hrs	NATV 110	The Native Studies Discipline	3 hrs
ANTH 210	Cultural Anthropology	3 hrs	POLS 100	American Government	3 hrs
ANTH 220	Physical Anthropology	3 hrs	POLS 102	American Political Issues	3 hrs
ANTH 230	Intro to Archaeology	3 hrs	POLS 141	Governments of the World	3 hrs
CJUS 201	Intro to Criminal Justice	3 hrs	POLS 165	Political Ideologies	3 hrs
ECON 201	Prin of Microeconomics	3 hrs	POLS 210	State & Local Government	3 hrs
ECON 202	Prin of Macroeconomics	3 hrs	POLS 250	World Politics	3 hrs
GEOG 101	Intro to Geography	3 hrs	POLS 253	Current World Problems	3 hrs
GEOG 200	Intro to Human Geog	3 hrs	PSYC 101	General Psychology	3 hrs
GEOG 210	World Regional Geog	3 hrs	REL 237	Religion in American Culture	3 hrs
GEOG 212	Geog of North America	3 hrs	SOC 100	Intro to Sociology	3 hrs
GEOG 219	Geog of South Dakota	3 hrs	SOC 150	Social Problems	3 hrs
GLST 201	Global Studies I	3 hrs	SOC 240	Sociology of Rural America	3 hrs
HDFS 141	Individual and the Family	3 hrs	SOC 250	Courtship & Marriage	3 hrs
HDFS/ EPSY 210	Lifespan Development	3 hrs	SOC 285	Society and Technology	3 hrs
HIST 151	US History I	3 hrs	SUST 201	Sustainability and Society	3 hrs
HIST 152	US History II	3 hrs	UHON 111	Ideas in History	3 hrs
HIST 256	World History	3 hrs	UHON 210	Interdisciplinary Civilizations I	3 hrs
INED 211	SD American Indian Cult/Edu	3 hrs	WMST 101	Intro to Women's Studies	3 hrs

GOAL #4: Students will understand the diversity and complexity of the human experience through study of the arts and humanities. (6 credits: in 2 disciplines or course prefixes or a sequence of a foreign language) ART/ARTH are considered the same prefix.

ARAB 101/102	Intro to Arabic I/II	4/4 hrs	HIST 112	World Civilization II	3 hrs
ARCH 241	Building History i	3 hrs	HIST 121	Western Civilization I	3 hrs
ART 111	Drawing I	3 hrs	HIST 122	Western Civilization II	3 hrs
ART 112	Drawing II	3 hrs	HUM 100	Intro to Humanities	3 hrs
ART 121	Design I	3 hrs	HUM 200	Connections	3 hrs
ART 123	Three Dimensional Des	3 hrs	LAKL/AIS 101/102	Intro Lakota I/II	4/4 hrs
ARTH 100	Art Appreciation	3 hrs	LAKL 201/202	Intermediate Lakota I/II	3/3 hrs
ARTH 120	Film as Art	3 hrs	LATI 101	Elementary Latin	4 hrs
ARTH 121	Intro to the Visual Arts	3 hrs	LATI 102	Adv Elementary Latin	4 hrs
ARTH 211	History of World Art I	3 hrs	MCOM 151	Intro to Mass Communications	2-3 hrs
ARTH 212	History of World Art II	3 hrs	MCOM 160	Introduction to Film	3 hrs
ARTH 231	Survey of Art, Music, Theatre	3 hrs	MFL 101/102	Intro to Foreign Lang & Cult I/II	4/4 hrs
ARTH/AIS 251	Amer Indian Art Hist	3 hrs	MUS/ANTH 240	Music Cultures of the World	3 hrs
CHIN 101/102	Intro Chinese I/II	4/4 hrs	MUS 100	Music Appreciation	3 hrs
ENGL 115	Amer Indian Oral Lit	3 hrs	MUS 117	Music in Performance	1 hr
ENGL 125	Introduction to Peace and	3 hrs	MUS 130	Music Lit & History I	2 hrs
ENGL 210	Intro to Literature	3 hrs	MUS 131	Music Lit & History II	3 hrs
ENGL 211	World Literature I	3 hrs	MUS 200	American Music	3 hrs
ENGL 212	World Literature II	3 hrs	MUS 201	History of Country Music	3 hrs
ENGL 214	Amer Indian Literature	3 hrs	MUS 203	Blues, Jazz and Rock	3 hrs
ENGL 221	British Literature I	3 hrs	PHIL 100	Intro to Philosophy	3 hrs
ENGL 222	British Literature II	3 hrs	PHIL 200	Intro to Logic	3 hrs
ENGL 230	Lit for Younger Readers	3 hrs	PHIL 215	Intro to Social/Political Phil	3 hrs
ENGL 240	Juvenile Literature	3 hrs	PHIL 220	Intro to Ethics	3 hrs
ENGL 241	American Literature I	3 hrs	PHIL 233	Philosophy and Literature	3 hrs
ENGL 242	American Literature II	3 hrs	PHIL 270	Philosophy of Religion	3 hrs
ENGL/WMST 248	Women in Literature	3 hrs	REL 213	Intro to Religion	3 hrs
ENGL 249	Lit of Diverse Cultures	3 hrs	REL 224	Old Testament	3 hrs
ENGL 250	Science Fiction	3 hrs	REL 225	New Testament	3 hrs
ENGL 256	Lit of the American West	3 hrs	REL 238	Native American Religions	3 hrs
ENGL 258	Literature and Culture	3 hrs	REL 250	World Religions	3 hrs
ENGL 268	Literature	3 hrs	RUSS 101/102	Intro to Russian I/II	4/4 hrs
FREN 101/102	Intro French I/II	4/4 hrs	SPAN 101/102	Intro to Spanish I/II	4/4 hrs
FREN 201/202	Intermediate French I/II	4/4 hrs	SPAN 201/202	Intermediate Spanish I/II	3/3 hrs
GER 101/102	Intro German I/II	4/4 hrs	THEA 100	Introduction to Theatre	3 hrs
GER 201/202	Intermediate German I/II	4/4 hrs	THEA 131	Introduction to Acting	3 hrs
GFA 101	Intro to Fine Arts	3 hrs	THEA 200	Theatre History	3 hrs
GREE 101	Elementary Greek	4 hrs	THEA 201	Film Appreciation	3 hrs
GREE 102	Adv Elementary Greek	4 hrs	THEA 231	Acting I	3 hrs
HIST 111	World Civilization I	3 hrs			

GOAL #5: Students will understand and apply fundamental mathematical processes and reasoning. (3 credits)

MATH 102/102L	College Algebra/Lab	4 hrs	MATH 125	Calculus II	4 hrs
MATH 115	Precalculus	5 hrs	MATH 225	Calculus III	4 hrs
MATH 120	Trigonometry	3 hrs	MATH/STAT 281	Statistics	3 hrs
MATH 123	Calculus I	4 hrs			

GOAL #6: Students will understand the fundamental principles of the natural sciences and apply scientific methods of inquiry to investigate the natural world. (6 credits) Must include a lab so typically a minimum of 7 credits.

BIOL 151/151L	General Biology I/Lab	3/1 hrs	GEOL 201/201L	Physical Geology/Lab	3/1 hrs
BIOL 153/153L	General Biology II/Lab	3/1 hrs	PHYS 111/111L	Introduction to Physics I/Lab	3/1 hrs
CHEM 106/106L	Chemistry Survey/Lab	3/1 hrs	PHYS 113/113L	Introduction to Physics II/Lab	3/1 hrs
CHEM 108/108L	Organic & Biochem/Lab	4/1 hrs	PHYS 211	University Physics I	3 hrs
CHEM 112/112L	General Chemistry I/lab	3/1 hrs	PHYS 213/213L	University Physics II/Lab	3/1 hrs
CHEM 114/114L	General Chemistry II/Lab	3/1 hrs			

GOAL #7: Students will recognize when information is needed and have the ability to locate, organize, critically evaluate, and effectively use information from a variety of sources with intellectual integrity. Students meet this requirement with GOAL 1 and GOAL 2.