MECHANICAL ENGINEERING
B.S. Degree Requirements
131 Credits

GENERAL REQUIREMENTS

COMMUNICATIONS:- (9)
Engl  111X (3)____
Engl  211X or 213X (3)____
Comm 131X or 141X (3)____

PERSPECTIVES ON THE HUMAN CONDITION:- (18-22)
Complete the 6 courses listed OR 4 of those listed plus 2 semester length courses in a single AK Native or other non-English language or 3 semester length courses (9 credits) in American Sign Language.
Anth 100X/Soc 100X (3)____
Comm 131X or 141X (3)____
Engl 111X or 211X or 213X (3)____
Engl/FL 200X (3)____
Hist 100X (3)____
Art/Mus/Thr 200X or Hum 201X
or Ans 202X (3)____

M.E. 302 (4)____ M.E. 408 (3)____
M.E. 308 (3)____ M.E. 415 (3)____(W)
M.E. 313 (3)____ M.E. 441 (3)____
M.E. 321 (3)____ M.E. 487 (3)____(W/O)
M.E. 334 (3)____ M.E.____(3)____+
M.E. 403 (3)____ M.E.____(3)____+

MATHEMATICS:- (15)
Math 200X (4)____ Math 202X (4)____
Math 201X (4)____ Math 302 (3)____

NATURAL SCIENCE:- (16)
Chem 105X (4)____ Chem 106X (4)____
Phys 211X (4)____ Phys 212X (4)____

LIBRARY & INFO SKILLS:- (0-1)
LS competency test _____ OR
LS 100X or 101X (1)____

COMPLETE 2 DESIGNATED (W) COURSES AND 1 DESIGNATED (O) COURSE OR 2 COURSES DESIGNATED (O/2) AT THE UPPER DIVISION LEVEL:
____________________(W) ______________(W)
________________(O) OR __________(O/2)______(O/2)

UPPER DIVISION CREDITS:- (39)
Transfer Credits _____
UAF Credits (24)* _____
TOTAL TO DATE: _____
TO BE COMPLETED: _____
*a minimum of 24 UAF credits

*Designates only grades of "C" or better may be used to fulfill this requirement, with the exception of ES 101.

MAJOR REQUIREMENTS

A. Complete the following:- (37)
    M.E. 302 (4)____ M.E. 408 (3)____
    M.E. 308 (3)____ M.E. 415 (3)____(W)
    M.E. 313 (3)____ M.E. 441 (3)____
    M.E. 321 (3)____ M.E. 487 (3)____(W/O)
    M.E. 334 (3)____ M.E.____(3)____+
    M.E. 403 (3)____ M.E.____(3)____+
  +Must be at the 400-level or above.

B. Complete a Technical elective engineering course at the 400-level or above:
    __________(3)___ ("C" grade or better)

C. Complete the following: Must earn a "C" grade or better in ES 331, ES 341 and ES 346:- (3)
    E.S. 101 (3)____
    E.S. 201 (3)____
    E.S. 209 (3)____
    E.S. 210 (3)____
    E.S. 301 (3)____
    E.S. 307 (3)____
    E.S. 331 (3)____*
    E.S. 341 (4)____*
    E.S. 346 (3)____*
    ESM 450 (3)___(W)

D. Complete 2 elective credits:
    ______________(2)___

E. Complete the Fundamental Engineering Exam:_______

Note: Students electing to complete the aerospace engineering concentration must complete the following as part of their program requirements ("C" or better grades) and complete a senior design project that is related to aerospace engineering:
    ME 450 (3)____ ME 452 (3)____
    ME 451 (3)____ ME 453 (3)____

Note: Students electing to complete the petroleum engineering concentration must complete the following as part of their program requirements ("C" or better grades) and complete a senior design project that is related to petroleum engineering:
    ME 409 (3)____ ME 416 (3)____
or equivalent; plus 2 400-level PETE courses:
    Pete_______ (3)____ Pete _______ (3)____

Credits for core/general requirements: 59
Credits required for major: 70
Elective credits: 2
Total credits required for degree 131
Fall Semester - 16 credits
ENGL 111X - Intro to Academic Writing (3)
MATH 200X - Calculus I (4)
ES 101 - Introduction to Engineering (3)
CHEM 105X - General Chemistry I (4)
Perspectives on the Human Condition (3)

Fall Semester - 17 credits
PHYS 211X - General Physics (4)
MATH 202X - Calculus III (4)
ES 209 - Statics (3) (ES 101, MATH 201; coreq PHYS 211)
ME 321 - Industrial Processes (3)
ENGL 211X/213X Academic Writing about Lit or Soc/Nat Sciences (3)

Fall Semester - 16 credits
ES 307 - Elem. of Electrical Eng. (3) (MATH 202)
ES 301 - Engineering Analysis (3) (MATH 302, ES 210)
ES 331 - Mech. of Materials (3) (ES 208 or 209 and MATH 201)
ME 302 - Mechanical Design I (4) (ES 208 or 210)
Perspectives on the Human Condition (3)

Fall Semester - 17 credits
ME 408 - Dynamics of Systems (3) (ES 201, 301)
ME 441 - Heat and Mass Transfer (3) (ES 346, 341)
ME Elective (3)
Technical Elective (3)
ESM 450W - Econ. Analysis and Ops. (3) (ES 201 and senior)
Elective (2)

Fall Semester - 12 credits
ENGL 111X - Intro to Academic Writing (3)
MATH 200X - Calculus I (4)
ES 101 - Introduction to Engineering (2)
Perspectives on the Human Condition (3)

Fall Semester - 14 credits
PHYS 211X - General Physics I (4)
MATH 202X - Calculus III (4)
ES 209 - Statics (3) (ES 101 and MATH 201; coreq PHYS 211).
ENGL 211X/213X Academic Writing about Lit or Soc/Nat Sciences (3)

Fall Semester - 13 credits
CHEM 105X - General Chemistry (4)
ES 301 - Engineering Analysis (3) (MATH 302, ES 210)
ES 331 - Mechanics of Materials (3) (ES 208 or 209 and MATH 201)
Perspectives on the Human Condition (3)

Fall Semester - 13 credits
ES 307 - Elements of Electrical Engineering (3) (MATH 202)
ES 341 - Fluid Mechanics (4) (MATH 201 and ES 208 or 210)
ME 408 - Dynamics of Systems (3) (ES 201, 301)
Perspectives on the Human Condition (3)

Fall Semester - 14 credits
ME 441 - Heat and Mass Transfer (3) (ES 346, 341)
ME Elective (3)
Technical Elective (3)
ESM 450W - Econ. Analysis and Operations (3) (ES 201 and senior)
Elective (2)

Spring Semester - 17 credits
COMM 131X or 141X (3)
MATH 201X - Calculus II (4)
ES 201 - Computer Tech. (3) (MATH 107 and 108 or enroll MATH 200)
CHEM 106X - General Chemistry II (4)
Perspectives on the Human Condition (3)

Spring Semester - 16 credits
PHYS 212X - General Physics (4)
MATH 302 - Differential Equations (3) (MATH 202)
ES 210 - Dynamics (3) (ES 209)
ES 346 - Thermodynamics (3) (MATH 201 and PHYS 211)
Perspectives on the Human Condition (3)

Spring Semester - 16 credits
ME 313 - Mech. Engr. Thermodyn. (3) (ES 341, 346)
ME 334 - Elem. of Material Science Engr (3) (Chem 106 and PHYS 212)
ME 308 - Instrumentation and Measurement (3) (ES 307)
ES 341 - Fluid Mechanics (4) (MATH 201 and ES 208 or 210)
Perspectives on the Human Condition (3)

Spring Semester - 15 credits
ME 403 - Mechanical Design II (3) (ME 302, ES 331)
ME 415W - Thermal Systems Lab (3) (ME 313, ME 441)
ME 487W,O - Design Project (3)
ME Elective (3)
Perspectives on the Human Condition (3)

Spring Semester - 14 credits
CHEM 105X - General Chemistry (4)
ES 301 - Engineering Analysis (3) (MATH 302, ES 210)
ES 346 - Thermodynamics (3) (MATH 201 and PHYS 211)
ME 302 - Mechanical Design I (4) (ES 208 or 210)
Perspectives on the Human Condition (3)

Spring Semester - 14 credits
ME 313 - Mech. Engr. Thermodyn. (3) (ES 341, 346)
ME 334 - Elem. of Material Science Engr (3) (Chem 106 and PHYS 212)
ME 308 - Instrumentation and Measurement (3) (ES 307)
ME 403 - Mechanical Design II (3) (ME 302, ES 331)

Spring Semester - 12 credits
ME 415W - Thermal Systems Lab (3) (ME 313, ME 441)
ME 487W,O - Design Project (3)
ME Elective (3)
Perspectives on the Human Condition (3)

Notes
1. The semester-by-semester breakdown is a suggestion only. You should consult with your advisor to work out a schedule.
2. Prerequisites for certain courses are listed in parentheses at the end. You should consult the catalog for additional details.
3. All ME required courses are offered once a year.
4. All ES courses are usually offered every semester with the exception of ES 307 (Fall).
5. ESM 450W is usually offered every semester.

Mechanical Engineering Suggested Five-Year Plan

Fall Semester - 13 credits
ENGL 111X - Intro to Academic Writing (3)
MATH 200X - Calculus I (4)
ES 101 - Introduction to Engineering (3)
CHEM 105X - General Chemistry I (4)
Perspectives on the Human Condition (3)

Fall Semester - 14 credits
PHYS 211X - General Physics (4)
MATH 202X - Calculus III (4)
ES 209 - Statics (3) (ES 101 and MATH 201; coreq PHYS 211).
ENGL 211X/213X Academic Writing about Lit or Soc/Nat Sciences (3)

Fall Semester - 13 credits
CHEM 105X - General Chemistry (4)
ES 301 - Engineering Analysis (3) (MATH 302, ES 210)
ES 331 - Mechanics of Materials (3) (ES 208 or 209 and MATH 201)
Perspectives on the Human Condition (3)

Fall Semester - 13 credits
ES 307 - Elements of Electrical Engineering (3) (MATH 202)
ES 341 - Fluid Mechanics (4) (MATH 201 and ES 208 or 210)
ME 408 - Dynamics of Systems (3) (ES 201, 301)
Perspectives on the Human Condition (3)

Fall Semester - 14 credits
ME 441 - Heat and Mass Transfer (3) (ES 346, 341)
ME Elective (3)
Technical Elective (3)
ESM 450W - Econ. Analysis and Operations (3) (ES 201 and senior)
Elective (2)

Spring Semester - 13 credits
COMM 131X or 141X Fund of Oral Communication (3)
MATH 201X - Calculus II (4)
ES 201 - Computer Tech. (3) (MATH 107 and 108 or enroll MATH 200)
Perspectives on the Human Condition (3)

Spring Semester - 13 credits
PHYS 212X - General Physics (4)
MATH 302 - Differential Equations (3) (MATH 202)
ES 210 - Dynamics (3) (ES 209)
Perspectives on the Human Condition (3)

Spring Semester - 14 credits
CHEM 106X - General Chemistry (4)
ES 346 - Thermodynamics (3) (MATH 201 and PHYS 211)
ME 302 - Mechanical Design I (4) (ES 208 or 210)
Perspectives on the Human Condition (3)

Spring Semester - 12 credits
ME 313 - Mech. Engr. Thermodyn. (3) (ES 341, 346)
ME 334 - Elem. of Material Science Engr (3) (Chem 106 and PHYS 212)
ME 308 - Instrumentation and Measurement (3) (ES 307)
ME 403 - Mechanical Design II (3) (ME 302, ES 331)

Spring Semester - 12 credits
ME 415W - Thermal Systems Lab (3) (ME 313, ME 441)
ME 487W,O - Design Project (3)
ME Elective (3)
Perspectives on the Human Condition (3)