Department of Mechanical and Manufacturing Engineering
Engineering & Computing Center 100 / 320-308-5654 / mme@stcloudstate.edu

Dual Major[5] (BS ME and MfgE) – 142 credits in the double major	
First Semester - 15 credits	**Second Semester - 16 credits**
*MME 101 (3) – Ethics & the Engineering Profession *CHEM 210[1] (4) – General Chemistry I *MATH 221[1] (5) – Calculus & Analytical Geometry I Liberal Ed.[2] - Goal Area 1 (3) [example CMST 192]	*ECE 102 (3) – Engineering Problem Solving (MatLAB) *PHYS 234 (5) – Classical Physics 1 *MATH 222 (4) – Calculus & Analytical Geometry II Liberal Ed.[2] - Goal Area 1 (4) [example ENGL 191]
Third Semester - 17 credits	**Fourth Semester - 16 credits**
*MME 223 (3) – Engineering Graphics in Mechanical Design *MME 241 (3) – Statics *PHYS 235 (5) – Classical Physics II *MATH 325 (3) – Differential Equations Liberal Ed.[2] - Goal Area 5 (3) [ECON 205 or 206]	MME 200 (3) – Thermodynamics MME 210 (3) – Engineering Materials MME 230 (2) – Lean Design and Manufacturing MME 242 (3) – Dynamics MME 380 (2) – Engineering Communications ECE 201 (3) – Circuit Analysis I or ENGR 332 (3) Electronics
Fifth Semester - 15 credits	**Sixth Semester - 15 credits**
MME 300(3) – Fluid Mechanics MME 330 (3) – Engineering Materials Processing I MME 340 (3) – Mechanical Design Fundamentals MME 350 (3) – Process Measurement and Sensors MATH 311[3] (3) - Linear Algebra/Multivariable Calculus or PHYS 346 (3) – Applications in Theoretical Physics	MME 302 (3) – Heat Transfer MME 331 (3) – Engineering Materials Processing II MME 341 (3) – Design of Machine Elements MME 351 (3) – Machine Controls STAT 353 (3) – Statistics for Engineers or STAT 417 (3) – Applied Probability & Simulation
Seventh Semester - 16 credits	**Eighth Semester - 17 credits**
MME 360 (2) – Manufacturing Economics MME 401(2) – Thermal Science Laboratory EM 460 (3) – Quality Engineering MME 464 (3) – Process & Tool Design MME 480 (3) – Engineering Design Project I (Senior Design) Technical Elective[4] (3)	MME 332 (2) – Lean Processes MME 345 (3) – Mechanisms MME 470 (3) – Facilities Planning & Materials Handling MME 481 (3) – Engineering Design Project II (Senior Design) Technical Elective[4] (3) Liberal Ed.[2] - Goal Area 6 & 8 (3) [example ART 131]
Ninth Semester - 15 credits	
Technical Elective[4] (3) Technical Elective[4] (3) Liberal Ed.[2] - Goal Area 5 & 8 (3) [example HIST 106] Liberal Ed.[2] - Goal Area 10 (3) [example ETS 375] Liberal Ed.[2] - Goal Area 6 & 7 (3) [example ENGL 216]	

*A GPA of 2.5 in these courses is required for admission to the MME majors. A GPA of 2.5 must also be maintained in core courses while in the program. See program information for more details.

[1]Placement exams are required for placement in CHEM 210 and MATH 221. Contact Chemistry at (320) 308-3031 or Mathematics at (320) 308-3001 for details.

[2]For engineering students, Goal Areas 2, 3, 4, and 9 are satisfied within the major. ECON 205 or 206, two diversity, and one racial issue course must be completed as part of satisfying the other Goal Areas. Options other than the examples shown are possible. PESS 122 is not required for engineering students.

[3]If MATH 321 is desired as a free technical elective, take MATH 312 instead of MATH 311 or PHYS 346.

[4]Technical electives include **one FREE** (non-MME) course and **three AREA** technical electives. Pick the **one FREE** technical elective from: MATH 321, 427, 452, 453; CHEM 211, 240, 320; PESS 248, 249, 448; PHYS 328; BIOL 202, 366; MME 444 *Internship*. Pick the **three AREA** technical electives from MME 404 *CFD*, 405 *Energy Systems*, 411 *Materials*, 420 *Finite Element*, 430 *Precision Mfg*, 435 *Materials Processing*, 440 *Solid Mechanics*, 442 *Dynamics II*, 450 *Robotics*, 462, *Production Planning*, 490 *Special Topics*, PHYS 333 *Optics*, 435 *Laser Optics*, ENGR 447 *Optical Design*, *MGMT 483 Manufacturing Operations*. Other technical elective options are possible with advisor approval. MME area technical electives are offered alternating years.

[5]One BS degree is issued with note on transcript that both the BS ME and BS MfgE majors were completed.

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