Minor in Mechanical Engineering

The minor in Mechanical Engineering introduces students to the core areas of the discipline and then allows them to create their own area of focus from our numerous course offerings or to focus in one of four traditional areas: controls, design, manufacturing or thermal science. Every student in our minor will gain an understanding of moving systems, the transfer and use of energy and the ways materials bend and change as a result of stress. The focus areas allow more advanced study in particular areas of interest. The courses in our minor represent the heart of our discipline and consist of some of the most challenging courses in our department. While students with GPAs above 2.0 are eligible to participate, this minor is really only recommended for students with very strong academic records.

A student who plans to pursue a minor in mechanical engineering must take the following core courses, and then choose one of the paths. These paths are not mandatory; they are proposed to facilitate advising.

Core Courses
EGR 241 (3) Engineering Statics.
EGR 242 (3) Engineering Dynamics.
MNE 252 (4) Mechanics of materials I.
Total (10) credits

Controls
MNE 381 (3) Design of Machine Elements.
MNE 491 (4) Advanced Machine Design.
MNE 466 (3) Control Theory.
Total (10) credits
In this case the student completes the minor in 20 credits.

Design
MNE 381 (3) Design of Machine Elements.
MNE 491 (4) Advanced Machine Design.
Plus one of the following courses:
MNE 231 (4) Material Science, OR
MNE 441 (3) Mechanical Vibrations, OR
MNE 485 (3) Introduction to the Finite Element Method.
Total (10 or 11) credits
In this case the student completes the minor in 20 or 21 credits.

Manufacturing
MNE 231 (4) Material Science.
MNE 345 (4) Design for Manufacturing.
Plus one of the following courses:
MNE 481 (3) Computer Aided Manufacturing, OR
MNE 482 (3) Robotics, OR
MNE 535 (3) Advanced Statistical Quality Control.
Total (11) credits
In this case the student completes the minor in 21 credits.

Thermal Sciences
MNE 220 (3) Engineering Thermodynamics.
MNE 306 (0.5) Mechanical Engineering Laboratory III.
MNE 332 (3) Fluid Mechanics I.
MNE 411 (3) Heat Transfer.
Total (9.5) credits
In this case the student completes the minor in 19.5 credits.

Open
A student does not have to choose any of the above paths. Instead the student must take at least three 300- and/or 400- level courses that meet the prerequisites. The following is an example:
MNE 220 (3) Engineering Thermodynamics I as prerequisite for MNE 321 & MNE 332.
MNE 321 (3) Engineering Thermodynamics II.
MNE 381 (3) Design of Machine Elements.
MNE 441 (3) Mechanical Vibrations.
Total (12) credits
In this case the student completes the minor in 22 credits.