

CERTIFICATE OF UNDERGRADUATE STUDIES (CUGS) IN MECHANICAL ENGINEERING

(updated 3/29/'23)

Advanced Engineering Materials

- ENGR 01.283 - Mat. Sci. & Manufac.
- ENGR 10.412 - Intro. to Nanotech.
- ME 10.460 - Intro. Composite Matl.

- ENGR 10.413 - Intro. Renew. Engy
- ME 10.440 - Intro. Adv. Manufac.
- ChE 06.466 - Polymer Processing
- MSE 00.510 - Struc. Sym. Prop. Matl.

Automotive Engineering

- ME 10.444 - Int. Combust. Engine
- ME 10.445 - Powertrains
- ME 10.446 - Vehicle Dynamics

- ME 10.401 - Comp. Integ. Mnf. Autom.
- ME 10.411 - Intro. to Combustion
- ME 10.422 - Intro. Comp. Fluid Dyn
- ME 10.440 - Intro. Adv. Manufac.
- ME 10.442 - Mechatronics
- ME 10.462 - Intro FEA w ANSYS
- ME 10.443 - Design for X
- ENGR 10.413 - Intro. Renew. Engy

Aerospace Engineering

- ME 10.405 - Aerodynamics
- ME 10.411 - Intro. to Combustion
- ME 10.422 - Intro. Comp. Fluid Dyn
- ME 10.446 - Auto: Vehicle Dynamics
- ME 10.453 - Analytical Dynamics
- ME 10.462 - Intro FEA w ANSYS.
- ME 10.480 - Intro Aerosp. Vehicles
- ME 10.482 - Intro Flight Dynamics
- ECE 09.402 - Spl.Tpc. Rocketronics
- ECE 09.423 - Intro. Radar Systems
- ECE 09.425 - Intro. Comm. Control
- ECE 09.456 - Embed Software Des.

Mechatronics

- ME 10.442 - Mechatronics
- ME 10.345 - Dyn. Sys & Cntrl
- ECE 09.205 - Prin. App ECE Nonmaj.
- ECE 09.321 - Systems & Control.
- ME 10.401 - Comp. Integ. Mnf. Autom.
- ME 10.456 - Spl. Tpc. Mechatronics
- ME 10.460 - Intro Soft Robotics.
- CS 06.420 - Embed. Sys. Program
- CS 07.310 - Robotics
- ECE 09.342 - Intro. Embed. Sys.
- ECE 09.404 - Prin. Biomed Sys.
- ECE 09.473 - Smart Sensors

Advanced Manufacturing

- ENGR 01.283 - Mat. Sci. & Manufac.
- ME 10.342 - Quality and Reliability
- ME 10.440 - Intro. Adv. Manufac.
- ME 10.401 - Comp. Integ. Mnf. Autom.
- ME 10.460 - Intro Composite. Mat.
- ME 10.466 - Intro Soft Robotics.
- ME 10.474 - Intro. Addi. Mnf. Charac.

Soft Robotics

- ME 10.466 - Intro. Soft Robotics
- ME 10.456 - Spl. Tpc. Mechatronics
- ME 10.470 - Intro to Biomech
- CS 07.310 - Robotics
- ECE 09.455 - Machine Learning
- ECE 09.456 - Embed Software Des.
- ECE 09.473 - Smart Sensors
- ECE 09.486 - Port. Platfm. Dev.
- ME 10.345 - Dyn. Sys & Cntrl
- ME 10.442 - Mechatronics
- ECE 09.321 - Systems & Control.
- ECE 09.342 - Intro. Embed. Sys.

- Required course for CUGS
- Required Course for BS in MechE
- Take 1 course from this list
- Take 2 courses from this list
- Take 2 courses from this list
- Take 4 courses from this list

Faculty contact for CUGS in
 Advanced Engineering Materials – Dr. Xue
 Advanced Manufacturing – Dr. Osta
 Aerospace Engineering – Dr. Jha
 Automotive Engineering – Dr. Bhatia
 Mechatronics – Dr. Zhang
 Soft Robotics – Dr. Trkov

BS in MechE
120 credits

- Technical Elective 1
- Technical Elective 2
- CUGS Elective 1
- CUGS Elective 2