

# CERTIFICATE OF UNDERGRADUATE STUDIES (CUGS) IN MECHANICAL ENGINEERING

(updated 01/22/'24)

## 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.

Fac Advisor Appvd Materials Course

## 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.

ME10.442 Mechatronics.

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.

## Aerospace Engineering

ME 10.411 - Intro. to Combustion

ME 10.412 - Intro. to Gas Dynamics

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 - Intr Aerospace Vehicles

ME 10.481 - Intro. to Aerodynamics

ME 10.482 - Intro Flight Dynamics

ECE 09.402 - Spl.Tpc. Rocketronics

ECE 09.409 - Intro. Virtual Reality

ECE 09.421 - Intro. Sys. Engg.

ECE 09.422 - Systems & Control II

ECE 09.423 - Intro. Radar Systems

ECE 09.425 - Intro. Comm. Control

ECE 09.426 - Intro. Weapons Sys.

ECE 09.427 - Intr Model Sys. Engg

ECE 09.456 - Embed Software Des.

ECE 09.473 - Smart Sensors

## BS in MechE 120 credits

Technical Elective 1

Technical Elective 2

CUGS Elective 1

CUGS Elective 2

## 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. Energy

### Faculty contact for CUGS in

Advanced Engineering Materials – Dr. Xue

Advanced Manufacturing – Dr. Osta

Aerospace Engineering – Dr. Haas

Automotive Engineering – Dr. Bhatia

Mechatronics – Dr. Zhang

Soft Robotics – Dr. Trkov

- 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