

# TUTORIAL SUPERVISING ASSIGNMENTS

2026 – 2027 Academic Session | Department of Mechanical Engineering

## FALL TERM 2026 (Sept. – Dec.)

### MECH ENG 4M06A – Mechanical Engineering Capstone Design Project

Fall Term 2026 (Sept. – Dec.)	
Course Code	<b>MECH ENG 4M06A</b>
Course Name	<b>Mechanical Engineering Capstone Design Project</b>
Course Description	A major mechanical project including quantitative design analysis, optimization, validation and/or testing to be completed under the supervision or co-supervision of a faculty member holding an appointment in the Department of Mechanical Engineering.
Course Instructor	<b>Sessional Instructor</b>
TA Duties	<i>Duties: Tutorial Supervision – Record-keeping using Avenue to Learn and Excel</i> Required Expertise: General Mechanical Engineering Expertise
Number of TAs Required	2
Total Hours	130 hours (2 TAs @ 65 hours each)
Hours Breakdown	65 hrs: Tutorial Supervision / Record-keeping

### MECH ENG 3004 – Fluid Mechanics

Fall Term 2026 (Sept. – Dec.)	
Course Code	<b>MECH ENG 3004</b>
Course Name	<b>Fluid Mechanics</b>
Course Description	Fluid properties and statics, conservation laws, applications of the continuity, momentum and energy equations, dimensional analysis and similarity, boundary layer flow, internal and external flows.
Course Instructor	<b>Dr. Mohamed S. Hamed</b>
TA Duties	<i>Duties: Tutorial Supervision – Demonstrating and Preparation/Grading</i> Required Expertise: Fluid Mechanics Expertise
Number of TAs Required	6
Total Hours	390 hours total (6 TAs × 65 hrs each)
Hours Breakdown	Demonstrating: 12 weeks × 2 hrs/week = 25 hrs Preparation & Grading: 40 hrs (estimate)

### MECH ENG 3E03 – Mechanical Engineering Design Theory

Fall Term 2026 (Sept. – Dec.)	
Course Code	<b>MECH ENG 3E03</b>
Course Name	<b>Mechanical Engineering Design Theory</b>
Course Description	3D stress transformation, curved beams, thick walled pressure vessels, analysis and design of interference fits, rotating disks and rings, thermal stresses, eccentric column buckling, contact stresses, shaft design and analysis, fatigue design and analysis, bolted and welded joints, machine elements.
Course Instructor	<b>Sessional Instructor</b>
TA Duties	<i>Duties: Tutorial Supervision – Demonstrating and Preparation/Grading</i> Required Expertise: Mechanics / Design Expertise
Number of TAs Required	6
Total Hours	390 hours total (6 TAs × 65 hrs each)
Hours Breakdown	Demonstrating: 12 weeks × 3 hrs/week = 35 hrs Preparation & Grading: 30 hrs (estimate)

### MECH ENG 2C04 – Mechanical Engineering Design Project I

Fall Term 2026 (Sept. – Dec.)	
Course Code	<b>MECH ENG 2C04</b>
Course Name	<b>Mechanical Engineering Design Project I</b>
Course Description	Design/Build/Test projects involving synthesis, modelling, and analysis, including technical drawings and CAD.
Course Instructor	<b>Dr. Elizabeth Hassan</b>
TA Duties	<i>Duties: Tutorial Supervision – Demonstrating and Preparation/Grading</i> Required Expertise (by assignment): <ul style="list-style-type: none"> <li>• 3 TAs – CAD Expertise</li> <li>• 2 TAs – Shop / Fabrication Expertise</li> <li>• 5 TAs – Mechanics Expertise</li> </ul>
Number of TAs Required	<b>10</b>
Total Hours	650 hours total (10 TAs × 65 hrs each)
Hours Breakdown	Demonstrating: 12 weeks × 2 hrs/week = 25 hrs Preparation & Grading: 40 hrs (estimate)

## WINTER TERM 2027 (Jan. – April)

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### MECH ENG 4M06B – Mechanical Engineering Capstone Design Project

Winter Term 2027 (Jan. – April)	
Course Code	<b>MECH ENG 4M06B</b>
Course Name	<b>Mechanical Engineering Capstone Design Project</b>
Course Description	A major mechanical project including quantitative design analysis, optimization, validation and/or testing to be completed under the supervision or co-supervision of a faculty member holding an appointment in the Department of Mechanical Engineering.
Course Instructor	<b>Sessional Instructor</b>
TA Duties	<i>Duties: Tutorial Supervision – Record-keeping using Avenue to Learn and Excel</i> Required Expertise: General Mechanical Engineering Expertise
Number of TAs Required	2
Total Hours	130 hours (2 TAs @ 65 hours each)
Hours Breakdown	Tutorial Supervision / Record-keeping

### MECH ENG 3F04 – Modelling and Numerical Solutions

Winter Term 2027 (Jan. – April)	
Course Code	<b>MECH ENG 3F04</b>
Course Name	<b>Modelling and Numerical Solutions</b>
Course Description	An introductory course in numerical analysis covering such topics as numerical differentiation, integration, curve-fitting and the solution of differential equations and systems of linear equations and non-linear equations.
Course Instructor	<b>Dr. Christopher Morton</b>
TA Duties	<i>Duties: Marking and Consulting</i> Required Expertise: Computational Expertise
Number of TAs Required	2
Total Hours	260 hours total (2 TAs × 130 hrs each)
Hours Breakdown	Per TA – 130 hrs: Marking / Consulting

## MECH ENG 2W04 – Thermodynamics

Winter Term 2027 (Jan. – April)	
<b>Course Code</b>	<b>MECH ENG 2W04</b>
<b>Course Name</b>	<b>Thermodynamics</b>
<b>Course Description</b>	Introduction to the principles of thermodynamics, and applications in engineering. Basic concepts: energy systems, properties of pure substances, entropy. Laws of thermodynamics, power and refrigeration cycles.
<b>Course Instructor</b>	<b>Dr. James S. Cotton</b>
<b>TA Duties</b>	<i>Duties: Marking and Consulting</i> Required Expertise: Thermodynamics Expertise
<b>Number of TAs Required</b>	<b>8</b>
<b>Total Hours</b>	520 hours total (8 TAs × 65 hrs each)
<b>Hours Breakdown</b>	Per TA – 65 hrs: Marking / Consulting

**Important – TA Availability Requirement:** All Tutorial Teaching Assistants must be available for all tutorial sessions.