McMaster University | Engineering
Mechanical Engineering

LABORATORY/ DEMONSTRATING ASSIGNMENTS

2026 – 2027 Academic Year | Department of Mechanical Engineering

MECH ENG 4P03 A/B – Composite Laboratory (Level 4)

	Fall Term 2026 (Sept. – Dec.)	Winter Term 2027 (Jan. – April)
Course Code	**MECH ENG 4P03A**	**MECH ENG 4P03B**
Course Name	**Composite Laboratory (Level 4)**	**Composite Laboratory (Level 4)**
Course Description	Laboratory exercises in vibration analysis, machine structures, controls, heat transfer, gas dynamics, fluid mechanics and thermodynamics.	Laboratory exercises in vibration analysis, machine structures, controls, heat transfer, gas dynamics, fluid mechanics and thermodynamics.
Course Instructor	**Dr. Chan Y. Ching**	**Dr. Chan Y. Ching**
TA Duties	*Each TA will be assigned to one of the following lab experiments:* • Beam in Bending and Torsion (D10) • Digital Control System, Part I (D13) • Robot Programming (D15) • Heat Exchanger (H2) • Oscillation of a Mass Spring System (D7) • Lab Float (x3)	*Each TA will be assigned to one of the following lab experiments:* • Dynamic Vibration Absorber (D8) / Water Hammer (F11) • Plastic Bending (PB) / Modal Analysis (MA) • Design of Experiment (DOE) / Surface Generation in a Machining Process (SG) • Bone Implant and Biomechanics (BI) • Digital Control System, Part II (D14) • Thermal System Simulation (TSS) • Lift Coefficient of an Airfoil (F16) • Lab Float (x4)
Number of TAs Required	**8**	**11**
Total Hours	130 hours per TA	130 hours per TA
Hours Breakdown	Demonstrating: 13 weeks × 6 hrs/week = 78 hrs Preparation & Grading: 52 hrs (estimate)	Demonstrating: 13 weeks × 6 hrs/week = 78 hrs Preparation & Grading: 52 hrs (estimate)

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MECH ENG 3MA2/ 3MB2– Composite Laboratory (Level 3)

	Fall Term 2026 (Sept. – Dec.)	Winter Term 2027 (Jan. – April)
Course Code	**MECH ENG 3MA2 (3M03A)**	**MECH ENG 3MB2 (3M03B)**
Course Name	**Composite Laboratory (Level 3)**	**Composite Laboratory (Level 3)**
Course Description	Laboratory exercises in fluid mechanics, thermodynamics, solid mechanics, and machining processes.	Laboratory exercises in fluid mechanics, thermodynamics, solid mechanics, and machining processes.
Course Instructor	**Dr. Chan Y. Ching**	**Dr. Chan Y. Ching**
TA Duties	*Each TA will be assigned to one of the following lab experiments:* • Drill Press (M1) • Lathe (M2) • Milling Machine (M3) • Diesel Engine (T1) • Statically Indeterminate Structure (D4) • Uniaxial Tensile Test (P8) • Lab Float (x4)	*Each TA will be assigned to one of the following lab experiments:* • Drag on Spheres (F18) • Plastic Properties (P5) • Parallel Series Pump Test (F12) • Resistance Spot Welding (RSW) • Reynolds Belt (F20) • Lab Float (x3)
Number of TAs Required	**10**	**8**
Total Hours	130 hours per TA	130 hours per TA
Hours Breakdown	Demonstrating: 13 weeks × 6 hrs/week = 78 hrs Preparation & Grading: 52 hrs (estimate)	Demonstrating: 13 weeks × 6 hrs/week = 78 hrs Preparation & Grading: 52 hrs (estimate)

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MECH ENG 2B03 – Mechanical Engineering Measurements

Winter Term 2027 (Jan. – April)	
Course Code	**MECH ENG 2B03**
Course Name	**Mechanical Engineering Measurements**
Course Description	Static and dynamic characteristics of instruments, statistical analysis of measurement errors, variable conversion elements and signal amplification. Metrology, measurement of strain and force, pressure, flow, temperature and power.
Course Instructor	**Dr. Shakirudeen A. Salaudeen**
TA Duties	*General Mechanical Engineering Expertise – TAs will support lab sessions requiring broad Mech Eng knowledge across measurement techniques and instrumentation topics.* Duties include lab preparation, student instruction, and grading.
Number of TAs Required	**11.5**
Total Hours	11 TAs @ 130 hours each; 1 TA @ 65 hours
Hours Breakdown	Full appointment (130 hrs): Demonstrating: 13 weeks × 6 hrs/week = 78 hrs Preparation & Grading: 52 hrs (estimate) Half appointment (65 hrs): Preparation & Grading: 65 hrs

Important – TA Availability Requirement: All Laboratory Teaching Assistants must be available for all laboratory sessions and training throughout the term. Please note that training may be scheduled at any time during the term, including over Reading Week.