

MECHANICAL ENGINEERING TECHNICAL ELECTIVES – Spring 2021

Students in Mechanical Engineering are required to take 9 Technical Electives (TEs) over the 4A and 4B terms. To meet degree requirements, the makeup of these TE selections must be as follows:

-2 Core TEs.

Students are required to take ME 481 in 4A and ME 482 in 4B. Students may switch into GENE 403 and GENE 404 if they are working in a multidisciplinary team, or MTE 481 and MTE 482 if they are meeting an option requirement.

-7 Elective TEs.

1) For All Students: A minimum of 4 elective TEs must be 400 or 500-level ME or MTE TEs. The list of TE offerings for the Winter term is shown in the following table.

Technical Electives offered Spring 2021

Fluid Mechanics	Instructor
ME 566 CFD for Engineering Design	Fue-Sang Lien
Thermal Engineering	
ME 456 Heat Transfer 2	Kyle Daun
ME 459 Energy Conversion	Gerry Schneider
ME 599 Spec. Topics: Building Energy Analysis	Dave Mather
ME 599 Spec. Topics: Hybrid Vehicle Project 1**	Roydon Fraser
Solid Mechanics and Design	
ME 423 Mechanical Design 2	Cliff Butcher
ME 559 – Finite Element Methods	Marco Alfano
Engineering Materials	
ME 435 Industrial Metallurgy*	Adrian Gerlich
ME 436 Welding and Joining Processes*	Peng Peng
Automation and Control	
ME 548 Numerical Control Machine Tools	Kaan Erkorkmaz
ME 561 Fluid Power Control Systems	Mihaela Vlasea
Not Included in the 7 TEs	
ME 481 FYDP Project (Core Course)	HJ Kwon / Kamyar Ghavam

*These courses are required for students interested in the Welding and Joining Specialization

** This course is by instructor invite only. Contact Prof Fraser for details

Note: There is no 4A MTE class in the Spring term. MTE TEs are only available in the Fall and Winter terms.

2) For all students: A maximum of 3 elective TEs can be 400 or 500-level TEs in another engineering program at UW. Students should consult Quest to determine which elective TEs are offered in the upcoming term. You will require instructor approval to get into these courses.

Please note some 400 and 500-level courses are **not** TEs. The following courses **cannot** be counted towards elective TE requirements: AE 491, CIVE 491, GENE 412, GENE 415, MSCI 411, MSCI 421, MSCI 422, MSCI 442, MSCI 454, and ME 401.

Exception Students who are part of an Engineering Option can include 200, 300, 400, and 500-level technical courses from engineering, math, and science. The courses must be needed for the option and cannot be similar to an existing MME course. Please see the next page for additional details.

Courses that are **only** available to Option students are listed below. Contact the instructor to get approval.

Artificial Intelligence Coordinator: Doug Harder, Electrical and Computer Engineering.

Elective TEs: CO456, CO463, CO466, CS480, CS484, CS485, STAT341, STAT440, STAT441, STAT444

Biomechanics - Coordinator: Naveen Chandrashekar, Mechanical and Mechatronics Engineering

Elective TEs: BIOL201, BIOL273, PHYS395, KIN221, KIN255, KIN312, KIN320, KIN340, KIN356, KIN416, KIN420, KIN422, KIN425, KIN472

Entrepreneurship - Coordinator: Marc Hurwitz, Conrad Business, Entrepreneurship and Technology Centre

Elective TEs: NA

Management Sciences – Coordinator: Bon Koo, Management Sciences Engineering

Elective TEs: MSC1331, MSC332

Mechatronics Engineering – Coordinator: Ning Jiang, Systems Design Engineering

Elective TEs: ECE224, ECE240, ECE250, ECE254, ECE356, SYDE292, SYDE322, **MTE220**, MTE325

Other less common Options are listed below. Please speak with the MME Academic Advisor to confirm course eligibility towards your TE count.

Environmental Engineering - Coordinator: Rebecca Saari, Civil and Environmental Engineering (on leave until May 2021). Anh Pham, Civil and Environmental Engineering

International Studies in Engineering - Coordinator: Zhongchao Tan, Associate Dean, International

Life Sciences - Coordinators: *Theme 1:* Andrew Doxey, Biology

Theme 2: Jonathan Witt, Biology

Theme 3: Bae-Yeun Ha, Physics and Astronomy

Theme 4: Dara Gilbert, Chemistry

Physical Sciences – Coordinators: *Theme 1:* Richard Epp, Physics and Astronomy

Theme 2: Steve Forsey, Chemistry

Theme 3: Shaun Frape, Earth Sciences

Software Engineering – Coordinator: Wojciech Golab, Electrical and Computer Engineering

Statistics – Coordinator: Stefan Steiner, Statistics and Actuarial Science, or Keith Hipel, Systems Design Engineering

Please contact Lisa McCarthy if you need more information.