MEGC GSI Workshop – Frequently Asked Questions

What’s a GSI?
GSI stands for Graduate Student Instructor. GSI’s help professors teach their classes by holding office hours, running review sessions, and sometimes grading homework, among other things.

What are the benefits of being a GSI?
Depending on your fractional appointment, it can include a tuition waiver, a stipend, and health care for you and your dependents. Besides getting funding, this is an excellent way to build teaching experience and network with other graduate and undergraduate ME students. Any students considering going into academia should definitely consider applying for a GSI position.

Wait, fractional appointment? What does that mean?
Your appointment is a measure of how much time you are expected to put into the GSI position. For example, a 50% appointment means that you are expected work half-time, or 20 hours a week. This entitles you to a stipend of about $2000/month. Other fractions scale similarly, e.g. a 25% appointment is only expected to work 10 hours a week. Most GSI’s get full tuition and health care benefits (25% appt. or higher).

What am I expected to do as a GSI?
That depends on the class and the professor that teaches it, but most GSI’s will be expected to hold weekly office hours (usually in the Findley Learning Center in GGBrown), help with the grading of homework and/or exams, and hold a review session before midterms and finals. In addition, if you are the GSI for one of the undergraduate design courses (ME 250/350/450), you will also hold a weekly discussion. GSI’s for the undergraduate lab courses (ME 395/495) hold 3-hour lab sessions.

Okay, how do I apply?
Go to the ME website (www.me.engin.umich.edu) and click on the tab labeled “Student Information.” Here, click on “MEIntranet” and then the GradsOnline link. This will take you to the GSI application. You can also email Cynthia Quann-White (me-aso@umich.edu) for more detailed information. Also, ask your current professors if they need a GSI for the coming term, and they can help you through the process.

Okay, so I got the position. Now what?
The Center for Research on Learning and Teaching (CRLT) will host a mandatory GSI Training where they hold workshops on teaching techniques, office hour training, and introduce you to your Graduate Student Mentor (GSM).

What’s a Graduate Student Mentor?
Your GSM is a student who was a GSI in the past who mentors a group of GSI’s throughout the semester. They are there to answer questions, deal with concerns, and basically help out new GSI’s.

Is it worth it?
Yes! Many GSI’s will agree that this is an invaluable experience for academic and professional growth. Interacting with students firsthand builds skills in teaching, communication, and leadership that are invaluable to industry and academia alike. It’s also a lot of fun!
ME Undergraduate Core Classes

ME 211 – Statics and Mechanics
This class is the first ME class most undergraduates take. It is the basics of statics and material mechanics. GSI’s for this course are expected to hold office hours and a weekly discussion section concerning the material (no pun intended) at hand. Since this is a very large course, there will likely be 2-3 professors and 2-3 GSI’s for the entire class body.

ME 235 – Thermodynamics I
This class is the introduction to classical thermodynamics. Energy, enthalpy, entropy, and basic cycles are the content typically covered. Like the other coursework classes, GSI’s are expected to hold weekly office hours and potentially grade homework and/or exams.

ME 240 – Dynamics
This class is the introduction to classical rigid-body dynamics. The content includes basic kinematics, rotational motion, and introductory vibrations.

ME 250/350/450 – Design and Manufacturing I/II/III
These are the three design courses required by undergraduates at Michigan. The expectation for GSI’s is similar, so we’re grouping them together. These classes expose students to design and manufacturing projects, focusing on CAD (250), machining (350), and an extensive senior project (450). GSI’s will hold discussion sections where the teams will meet with you to learn CAD (250) and/or discuss the project at hand, asking the GSI for guidance and their engineering opinion.

ME 320 – Fluid Dynamics
This is the introduction to basic fluid mechanics. Content includes hydrostatics, Bernoulli’s equation, control volume analysis, nondimensional parameters and how to use them, and analyzing incompressible, viscous flow.

ME 335 – Heat Transfer
This class introduces students to the fundamentals of heat transfer by conduction, convection, and radiation. Content includes steady-state heat diffusion, transient heat conduction, convective flow over various shapes, and radiation fundamentals.

ME 360 – Controls
This class introduces students to the basics of control theory. Content includes analysis of mechanical, rotational, electrical, fluid, and thermal systems from a control point of view, transfer functions and filters, and PID tuning.

ME 382 – Material Mechanics
This class covers the basics of material science with an emphasis on design. Content includes basic material structure, the origin of elastic and shear moduli, phase diagrams, yield and fracture criteria, and analysis of various metal alloys.

ME 395/495 – Lab I/II
These labs put into practice the knowledge learned in the coursework classes while teaching technical writing and engineering ethics. Over the course of the semester either 8 (395) or 4 (495) labs will be assigned to undergraduates, each with a lab report. GSI’s are expected to run the lab, knowing how to use all of the equipment at hand, and help students write their lab reports with proper technical writing skills.

For information on teaching technical electives or graduate level courses, contact Cynthia Quann-White (me-aso@umich.edu) or the professors of the courses you’d like to teach.