

# ME NEWS

## News of Interest to Mechanical Engineering Students

Revised: October 14, 2020

### Directed Electives and Special Offerings for Winter Quarter 2019-20

ENGR 425 (1 SCH)	Engineering Ethics and Professionalism	H. Hegab	R 3:30 - 4:45
ENGR 489c	Additive Manufacturing	K. Crittenden	TR 8:00 - 9:50
MEMT 417	Durability of Materials	H. Cardenas	TR 10:00 - 11:50
MEEN 450c (001)	Special Topics* <i>This is a placeholder course for an independent study experience</i>	K. Crittenden	TBA
MEEN 450c (002)	Advanced Heat Transfer	B. Ciccirelli	TR 12:00 - 1:50
MEEN 361 (H01)	Advanced Mechanics of Materials (honors section)	M. Swanbom	MWF 12:30 - 1:45

**\*Special Topics:** This course can be taken once for up to 3 SCH if you are working with an engineering professor on a special project. Dr Crittenden is listed as the instructor of record, but the project will be conducted with the professor associated with the project. You must have an agreement with this professor before registering for this course. The course will count as an MEEN directed elective if the professor guiding the project is a MEEN faculty member, otherwise the course will count as the COES elective. The exact deliverables will be determined by the professor guiding the project, but generally include a technical report and possibly a prototype. Expect to work 40 - 60 hours throughout the quarter for 3 hours of course credit. An individual course title will need to be submitted during or before the first week of the quarter. This course title will be listed on the transcript. A few Special Topics courses are listed on the following page, you can discuss these with the associated faculty member to see if they would be a good fit for you. You may also talk with other faculty members about creating a new topic.

**Special Note on Electives:** Please discuss specific courses with your advisor before registering; a petition should be filed for any non-MEEN or MEMT directed elective. In general, 400 level COES courses can count as the COES elective. Also in general, 400 level courses taught by MEEN faculty can count as COES, or MEEN electives. In addition, 400 level MEEN electives can count as the COES elective. Remember to talk to your advisor about your electives!

### **Co-Ops, Internships and Summer Research Experiences**

We encourage students to complete internships and co-ops while completing their MEEN degree. Talk to your advisor about which quarter would be best for you to miss next year. Internships, co-op's, and research experiences enrich your education and provide valuable job experience that will make you more attractive to potential employers.

### **Prerequisites and GPA Benchmarks**

Be sure to check the course descriptions for prerequisite information in the University Catalog:  
<https://catalog.latech.edu/>

In particular, freshman and sophomore students should be aware of the **MATH 240-244** minimum GPA requirement of 2.0 on all attempts of those classes prior to registering for MEEN 332, MEEN 350, MEEN 382, and MEMT 313.

Please also be aware that you must have a minimum GPA of 2.0 in all MEEN rubric courses in order to graduate. MEEN rubric courses include ENGR 220, ENGR 222, all required MEMT courses, and all MEEN courses, including approved directed electives.

**Academic Documents (curriculum sheets and flowhats)** can be found at COES.latech.edu

**Special Topics:**

1. Title: **Universal Light-weight Respirator Masks**

2. Approximate number of students: 1

3. Deliverables: Build and test a multi-purpose light-weight mask that can filter a diverse range of micro particles and possess excellent wearability, breathability and biocompatibility.

4. Special requirements: Juniors (preferable) or Seniors with a penchant for hands-on building and testing prototypes. Able to enroll on the project for at least 2 quarters.

5. Contact: Dr. Prabhu Arumugam (parumug@latech.edu)

1. Title: **Engineering a Highly Multiplexed Biosensor Array for Brain Chemical Sensing**

2. Approximate number of students: 1

3. Deliverables: Build and test a biosensor array probe that can detect multiple chemicals in an animal brain.

4. Special requirements: Juniors (preferable) or Seniors with an interest in sensor development and testing for neuroscience applications. Able to enroll on the project for at least 2 quarters.

5. Contact: Dr. Prabhu Arumugam (parumug@latech.edu)

1. Title: **Very Large Format FFF Printing**

2. Approximate number of students: 2-3

3. Deliverables: Conduct successful large scale prints with the Erectorbot printer in Bogard 120, document best practices and workflow for this printer.

4. Special Requirements: Be familiar with 3D printing, and how to slice and print models. Familiarity with Simplify3d software is beneficial, but not required.

5. Contact: Dr. Kelly Crittenden (kellyc@latech.edu)

Other topics not listed here may be available as well.