

# Concentrations

## BSEE - Photonics Concentration

Bachelor of Science in Electrical Engineering

Classes begin in Spring of 2<sup>nd</sup> year: (may begin in spring of 3<sup>rd</sup> year)

1. Get a copy of the EE-Phonics Concentration flowchart and .pdf degree audit that pertain to your catalog year.
2. In 2<sup>nd</sup> year spring, Take EE2190 and postpone EE3120 into future semester. It is not required with the photonics concentration. EE2190, Intro to Photonics, is new, beginning Spring 2019.
3. Complete EE3140, Electromagnetics in Fall of 3<sup>rd</sup> year to stay on track. Important Prereq.
4. Take EE3190 in fall of 3<sup>rd</sup> year, EE3290 in Spring of 3<sup>rd</sup> year and EE4490, Laser systems in spring of 3<sup>rd</sup> or 4<sup>th</sup> year (**or Fall**—*check the Schedule of Classes each semester for EE4490*).
5. Select two concentration elective courses, plan for prerequisites, and semester offered.

To add a concentration:

1. Submit a curriculum change request in MyMichiganTech
2. Changes are approved or denied by the Department – you will receive an email.

Faculty:

- Dr. Durdu Guney, 729
- Dr. Chris Middlebrook, 628
- Dr. Mike Roggemann, 503

# Concentrations

## BSEE - Biomedical Applications Concentration

### Bachelor of Science in Electrical Engineering

Classes begin in 2<sup>nd</sup> year:

1. Get a copy of the EE-Biomedical Applications Concentration flowchart and .pdf degree audit that pertain to your catalog year.
2. Take Anatomy & Physiology I (BL2010) AND Cellular & Molecular Biology (BE2400) in Fall of 2<sup>nd</sup> year.
3. Take Anatomy & Physiology II (BL2020) Spring of 2<sup>nd</sup> year.
4. In Spring of 2<sup>nd</sup> year, decide whether to take Biomechanics I or Biomaterials I. Plan in 3<sup>rd</sup> year, for your Biomedical Applications Concentration “focus”. Become familiar with concentration elective courses and semester offered.
5. Take BE3700 and BE3701, Bioinstrumentation and Lab in Spring of 3<sup>rd</sup> year.

#### Faculty:

- Dr. Chris Middlebrook, 628
- Dr. Sean Kirkpatrick, M&M 301

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# Concentrations

## BSEE - Environmental Applications Concentration

### Bachelor of Science in Electrical Engineering

Classes begin in 3<sup>rd</sup> year:

1. Get a copy of the EE-Environmental Applications Concentration flowchart and .pdf degree audit that pertain to your catalog year.
2. First 2 years of coursework are the same as the BSEE.
3. Take Environmental Engineering Fundamentals (CEE3501) in Fall of 3<sup>rd</sup> year or take CEE3503 in spring(2<sup>nd</sup> or 3<sup>rd</sup> yr); Take Environmental Monitoring and Measurement Analysis (CEE3502) in Spring of 3<sup>rd</sup> year. (may be taken in reverse order: CEE3502 in spring 3<sup>rd</sup> year, then CEE3501 in fall of 4<sup>th</sup> year)
4. In Fall of 2<sup>nd</sup> year or Spring of 3<sup>rd</sup> year, decide which remote sensing sequence you will take: 1) EE4252 and GE4250 OR 2) EE2190 and EE3190
5. Become familiar with the Environmental Engineering Quality elective courses and semester offerings. Choose two courses from the list. Faculty:

- Dr. Ashok Ambardar, 826 (DSP)
- Dr. Durdu Guney, 729
- Dr. Chris Middlebrook, 628

To add a concentration:

1. Submit a curriculum change request in MyMichiganTech
2. Changes are approved or denied by the

# Concentrations

## BSEE - Electric Power Engineering Concentration

### Bachelor of Science in Electrical Engineering

Classes begin in 2<sup>nd</sup> or 3<sup>rd</sup> year

1. Electric Energy Systems (EE3120) is the prerequisite course to the Electric Power Engineering courses. This can be taken in Spring of 2<sup>nd</sup> year, Summer or during 3<sup>rd</sup> year.
2. Take Power Analysis 1 (EE4221) in Fall of 4<sup>th</sup> year; Take Power Analysis 2 (EE4222) and Power Engineering Lab (EE4226) in Spring of 4<sup>th</sup> year.
3. In your 3<sup>rd</sup> year, become familiar with concentration elective courses, prerequisites and semesters offered. You will choose two electric power engineering elective courses which are typically taken in the 4<sup>th</sup> year.

#### Faculty:

- Prf. Lucia Gauchia, 612
- Prf. John Lukowski, 233
- Prf. Chee-Woii Ten, 613
- Prf. Sumit Paudyal, 611

To add a concentration::

1. Submit a curriculum change request in MyMichiganTech
2. Changes are approved or denied by the Department – you will receive an email.

## Concentrations

# BSCpE and BSEE - Enterprise Concentration

Bachelor of Science in Computer Engineering

Bachelor of Science in Electrical Engineering

1. Choose an Enterprise to join. May begin as early as Spring of 1<sup>st</sup> year (ENT1960 is optional), but is not required until Fall of 3<sup>rd</sup> year - begin in ENT3950.
2. Minimum *required project work* is 4 semesters in 3<sup>rd</sup> and 4<sup>th</sup> year: ENT3950, ENT3960, ENT4950 and ENT4960.
3. Take Teaming in Enterprise (ENT2961) in Fall of 2<sup>nd</sup> or 3<sup>rd</sup> year; Take Communication Contexts (ENT2962) in Spring of 2<sup>nd</sup> or 3<sup>rd</sup> year.
4. In your 3<sup>rd</sup> year, become familiar with concentration elective courses. A list of these Enterprise Instructional modules are included in your degree audit report. Add your course selections to your academic plan.

To officially add a concentration:

1. Submit a curriculum change request in MyMichiganTech
2. Changes are approved or denied by the Department – you will receive an email.

Faculty: the Enterprise Advisor of the enterprise you join. Enterprise office: M&M722