

BSE Approved Technical Electives by Concentration

<p>Biomedical Engineering</p> <ul style="list-style-type: none"> • CHEM 2750: Organic Chemistry I • CHEM 2760: Organic Chemistry II • MATH 4101: Advanced Calculus I • MATH 4110: Elementary Complex Variables • PHYS 4310: Modern Optics • PHYS 5715: Biomedical Physics • <i>Any 3000- or 4000- or 5000-level Department of Engineering course not required for the concentration</i> 	<p>Biochemical Engineering</p> <ul style="list-style-type: none"> • CHEM 2750: Organic Chemistry I • CHEM 2760: Organic Chemistry II • MATH 4101: Advanced Calculus I <p><i>Any 3000- or 4000- or 5000-level Department of Engineering course not required for the concentration</i></p>
<p>Electrical Engineering</p> <ul style="list-style-type: none"> • CSCI 3300: Introduction to Algorithms and Data Structures • CSCI 3310: Advanced Data Structures and Data Abstraction • CSCI 4520: Introduction to Computer Architecture • CSCI 4530: Computer Networks and the Internet • CSCI 4540: Introduction to Mobile Communications and Wireless Security • CSCI 5800: Artificial Intelligence • ECON 5000: Data Analysis • MATH 4110: Elementary Complex Variables • MATH 4201: Introduction to Stochastic Processes • PHYS 4326: Electricity and Magnetism I • PHYS 4327: Electricity and Magnetism II • PHYS 4416: Modern Physics I • PHYS 4417: Modern Physics II • <i>Any 3000- or 4000- or 5000-level Department of Engineering course not required for the concentration</i> 	<p>Environmental Engineering</p> <ul style="list-style-type: none"> • GEOG 3430: Geographic Information Systems I • GEOG 4210: Fluvial and Hydrological Processes • GEOL 3209: Environmental Forensics • GEOL 3500: Hydrogeology and the Environment • GEOL 5150: The Geologic Component of Environmental Science • GEOL 5450: Introduction to Aqueous Geochemistry • GEOL 5700/5701: Geohydrology of Drainage Basins and Laboratory • EHST 5800: Solid and Hazardous Waste Management and Laboratory • <i>Any 3000- or 4000- or 5000-level Department of Engineering course not required for the concentration</i>

Industrial & Systems Engineering

- MATH 4100: Mathematics of Risk Analysis
- MATH 4101: Advanced Calculus I
- MATH 4110: Elementary Complex Variables
- MATH 4201: Introduction to Stochastic Processes
- MATH 4332: The Calculus of Finite Differences
- MATH 5131: Deterministic Methods in Operations Research
- MATH 5132: Probabilistic Methods in Operations Research
- MATH 5774/CSCI 5774: Programming for Research
- **Any 3000- or 4000- or 5000-level Department of Engineering course not required for the concentration**

Mechanical Engineering

- MATH 4101: Advanced Calculus I
- MATH 4332: The Calculus of Finite Differences
- MATH 5774/CSCI 5774: Programming for Research
- PHYS 3700: Advanced Laboratory
- PHYS 4310: Modern Optics
- PHYS 4416: Modern Physics I
- PHYS 4417: Modern Physics II
- PHYS 4610: Electronics
- **Any 3000- or 4000- or 5000-level Department of Engineering course not required for the concentration**