

**SOUTHERN ILLINOIS UNIVERSITY  
EDWARDSVILLE**

**Pathway - Mechatronics and Robotics Engineering**

**Southwestern Illinois College  
Associate in Engineering Science Degree**

**Fall Year 1**

| SWIC Course        |                                | Hours     |
|--------------------|--------------------------------|-----------|
| ENG 101            | Rhetoric and Composition I     | 3         |
| MATH 203           | Analytic Geometry & Calculus I | 5         |
| CHEM 105           | General Chemistry I            | 5         |
| IAI Social Science | SOC 230 recommended (ERGU)     | 3         |
| <b>Total</b>       |                                | <b>16</b> |

**Spring Year 1**

| SWIC Course  |                                    | Hours     |
|--------------|------------------------------------|-----------|
| ENG 102      | Rhetoric and Composition II        | 3         |
| MATH 204     | Analytic Geometry & Calculus II    | 5         |
| PHYS 204     | Physics- Mechanics                 | 4         |
| COMM 155     | Interpersonal Comm (ERGU or EREG)* | 3         |
| <b>Total</b> |                                    | <b>15</b> |

**Fall Year 2**

| SWIC Course  |                                   | Hours     |
|--------------|-----------------------------------|-----------|
| MATH 205     | Analytic Geometry & Calculus III  | 4         |
| MATH 210     | Computer Prog. For Engineers      | 3         |
| PHYS 205     | Physics-Heat/Electrical/Magnetism | 4         |
| ENGR 263     | Analytical Mechanics-Statics      | 3         |
| ECON 201     | Principles of Macroeconomics      | 3         |
| <b>Total</b> |                                   | <b>17</b> |

**Spring Year 2**

| SWIC Course  |                                 | Hours     |
|--------------|---------------------------------|-----------|
| MATH 290     | Differential Equations          | 3         |
| MATH 292     | Linear Algebra                  | 3         |
| ENGR 264     | Analytical Mechanics - Dynamics | 3         |
| ENGR 271     | Electrical Circuits             | 3         |
| ENGR 275     | Mechanics of Solids             | 3         |
| <b>Total</b> |                                 | <b>15</b> |

**Associate in Engineering Science Degree Total 63**

\*Students should follow AES subplan. Consult SWIC Advisor or Program Coordinator.

**Southern Illinois University Edwardsville  
Bachelor of Science Degree**

**Fall Year 3**

| SIUE Course  |                          | Hours     |
|--------------|--------------------------|-----------|
| ECE 211      | Circuit Analysis II      | 4         |
| ECE 282      | Digital Systems Design   | 4         |
| MRE 320      | Sensors and Actuators    | 3         |
| ME 356       | Dynamic Systems Modeling | 3         |
| ME 354       | Numerical Simulation     | 3         |
| <b>Total</b> |                          | <b>17</b> |

**Spring Year 3**

| SIUE Course  |                                       | Hours     |
|--------------|---------------------------------------|-----------|
| MRE 358      | Introduction to Mechatronics          | 3         |
| ME 450       | Automatic Control                     | 3         |
| MRE 380      | Design of Machine Elements            | 3         |
| ECE 381      | Microcontroller                       | 3         |
| PHIL 323     | Engineering, Ethics & Professionalism | 3         |
| <b>Total</b> |                                       | <b>15</b> |

**Fall Year 4**

| SIUE Course  |                                    | Hours     |
|--------------|------------------------------------|-----------|
| MRE 454      | Robotics, Dynamics & Controls      | 3         |
| MRE 480      | Design in Mechatronic & Robotics I | 3         |
| MRE XXX      | MRE Elective I                     | 3         |
| BLS          | Breadth Life Science               | 3         |
| IE 345       | Engineering Economic Analysis      | 3         |
| <b>Total</b> |                                    | <b>15</b> |

**Spring Year 4**

| SIUE Course       |                                     | Hours     |
|-------------------|-------------------------------------|-----------|
| MRE XXX           | MRE Elective II                     | 3         |
| MRE 477           | Comp. Integrated Manufac. Systems   | 3         |
| MRE 481           | Design in Mechatronic & Robotics II | 3         |
| STAT 380          | Statistics for Applications         | 3         |
| IS <sup>1</sup>   | IS (EREG/ERGU - if needed)          | 3         |
| BFPA <sup>1</sup> | Breadth Fine & Performing Arts      | 3         |
| EH                | Health Experience                   | 0-2       |
| <b>Total</b>      |                                     | <b>18</b> |

**Bachelor of Science Degree Total 128**

<sup>1</sup>IS 370 and IS 380 satisfy both BFPA and IS. Confirm availability with SIUE Academic Advisor.

## **Pathway - Mechatronics and Robotics Engineering**

School of Engineering Transfer Credit Advisory Notes:

Students must earn 60 hours from a senior institution for graduation requirements. If students take all SIUE junior and senior level courses, as stated above, at SIUE, they will meet this requirement. Please note: deviating from the planned schedule above may jeopardize this requirement.

SIUE may accept transfer "D" grades, however, in the School of Engineering, a grade of "C" or better is required in all chemistry, computer science, mathematics, physics, and engineering courses applied to major or minor requirements. A course that transfers as 1XX, 2XX, 3XX or TRF 1XX, TRF 2XX, TRF 3XX may require a course description and/or syllabus for further evaluation.

A course that satisfies both the ERGU and EREG attribute requirement will only be counted as one attribute and not both.

Interdisciplinary Studies (IS) Courses must be taken at the junior/senior level class standing. This requirement is not waived with completion of transfer associate degree or IAI-GECC. It is recommended that students choose a course to meet this general education requirement AND Global Cultures, Race, and Equity Education Experience (EREG) or US Race, Gender, and Equity Experience (ERGU). Please see the SIUE advisor for a current list of course options.