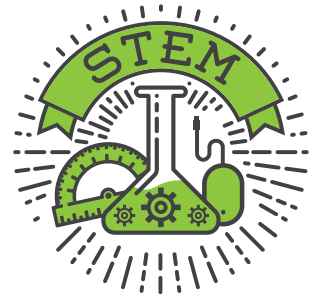


# STEM PATHWAY BRIEF

## LSU PRE-ENGINEERING



### OVERVIEW

The [LSU Pre-Engineering Certification Pathway](#) provides a pre-engineering program for both TOPS University and TOPS Tech diploma-seeking high school students. Through hands on projects and interaction with industry professionals, the curriculum prepares students to compete in the 21st century by engaging them in understanding the fundamentals of engineering in the classroom as well as in the workplace. Students will understand the careers available to them in the field of engineering as well as learn key skills such as teamwork, oral and written technical communication, and work ethic that will serve them well whether they pursue an advanced degree or immediately join the workforce.

College Ready	Career Ready
<ul style="list-style-type: none"><li>• Aerospace Engineering</li><li>• Biological Engineering</li><li>• Chemical Engineering</li><li>• Civil Engineering</li><li>• Computer Engineering</li><li>• Computer Science</li><li>• Construction Management</li><li>• Electrical Engineering</li><li>• Environmental Engineering</li><li>• Industrial Engineering</li><li>• Mechanical Engineering</li><li>• Petroleum Engineering</li></ul>	<ul style="list-style-type: none"><li>• Mechanical Drafter</li><li>• Mechanical Engineering Technician</li><li>• Architectural and Civil Drafter</li><li>• Surveying and Mapping Technicians</li><li>• Computer Programmer</li></ul>

### CREDENTIALS INCLUDED

Students receive basic training for credentials like Certified SolidWorks Associate (CSWA) and/or Carnegie Mellon CS-STEM Network Certifications in RobotC.

### STEM DIPLOMA SEALS

#### GOLD SEAL

Students who successfully complete the four required courses and four courses from the Additional Course list will earn a Gold STEM Diploma Seal.

#### SILVER SEAL

Students who successfully complete the four required courses will earn a Silver STEM Diploma Seal.

# STEM PATHWAY

Required Courses (4)					
Course Title	Course Code	Carnegie Credits	CTE 6%	CDF 6%	5-Point Scale
Intro to Engineering Design (LSU Partnership)	110801	1	✓	✓	
Intro to Computational Thinking for STEM (LSU Partnership)	061140	1	✓	✓	
Robotics (LSU Partnership)	150780	1	✓	✓	
Engineering Design and Development (LSU Partnership) or Principles of Engineering (LSU Partnership)	110861 or 110864	1	✓	✓	
Additional Courses (choose an additional 4)					
Course Title	Course Code(s)	Carnegie Credits	CTE 6%	CDF 6%	5-Point Scale
Engineering Economy (LSU Partnership)	144200	1	✓	✓	
Principles of Engineering (LSU Partnership) 	110864	1	✓	✓	
Engineering Design & Development (LSU Partnership)	110861	1	✓	✓	
Programming for Engineers (LSU Partnership)	144300	1	✓	✓	
Data Manipulation and Analysis (LSU Partnership)	080532	1	✓	✓	
AP Calculus AB 	160327	1			✓
AP Calculus BC 	160328	1			✓
Statistical Reasoning* or AP Statistics 	165031 or 160352	1			✓
AP Computer Science Principles	061177	1	✓	✓	✓
AP Computer Science A 	061175	1	✓	✓	✓
Biology DE, Biology II*, or AP Biology 	Biology DE 150321 Biology II 150302 AP Biology 150307	1			✓
Chemistry DE, Chemistry II*, or AP Chemistry 	Chemistry DE 150414 Chemistry II 150402 AP Chemistry 150410	1			✓
AP Physics 	AP Physics I 150724 AP Physics II 150725 AP Physics C: Elec 150794 AP Physics C: Mec 150795	1			✓
Environmental Science* or AP Environmental Science 	150310 or 150311	1			✓

\*Course counts on a 4-point scale

**CORE COURSES:**



MATH



SCIENCE

For full Pathway information, visit the [JumpStart graduation pathway page](#).