

Pre-Engineering – LSU Partnership

K-16 Pathway	<p>The Pre-Engineering – LSU Partnership graduation pathway is a K-16/STEM pathway. Students must:</p> <ol style="list-style-type: none"> 1) pass the 4 required Pre-Engineering courses listed on this pathway (see below); 2) pass 4 additional courses from the choices listed on the Additional Course List (see below) 3) pass at least one other course in this pathway, which can include but is not limited to a Career Readiness course; and 4) attain two Complementary credentials.
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High-Demand Careers Related to this Pathway	<p><u>5 Star</u>: Electrical Engineers, Industrial Engineers, Mechanical Engineers, Chemical Engineers, Civil Engineers, Environmental Engineer</p> <p><u>4 Star</u>: Electronics Engineers, Marine Engineers, Materials Engineers, Operating Engineers, Petroleum Engineers</p>
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Starting Salary Ranges for this Pathway	\$47,000 - \$70,000
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Pre-Engineering – LSU Partnership Graduation Pathway: Sections

1	Pathway-Specific Courses	<p>This section lists the course titles and codes for courses specific to this pathway</p> <p>Each table also indicates those courses that qualify for the basic 6% CTE adder (<i>course codes beginning with "01", "04", "07", "08", "09", "10", "11" or "31" are CTE courses</i>) as well as those courses that qualify for the additional 6% Career Development Fund (or CDF) payment.</p>
2	Universal Jump Start Courses	<p>This section lists the course titles and course codes for courses that are part of every Jump Start graduation pathway. Universal courses may not substitute for the 4 required and 4 additional courses needed to fulfill requirements for this pathway.</p>
3	Career Readiness Courses	<p>This section lists the course titles and codes for courses that qualify as Career Readiness Courses. Students must pass at least one Carnegie credit of Career Readiness courses, but may apply more than one Career Readiness course to their 9 credit Jump Start graduation requirement.</p>
4	Internships	<p>This section indicates the three types of internships and the appropriate course codes. Internships may not substitute for the 4 required and 4 additional courses needed to fulfill requirements for this pathway.</p>
5	Culminating Credentials	<p>This section indicates the required culminating credential(s) for this pathway.</p>

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6	Sample Schedule	This section provides a sample schedule for students pursuing this graduation pathway. Each high school will develop its own standard schedules for Jump Start students.

Jump Start Graduation Pathway Revision Policy

Jump Start graduation pathways are continuously updated. Please use the most updated graduation pathways.

Future changes to Jump Start graduation pathways will always increase student opportunities. *No one will ever need to compare an old pathway with an updated pathway.*

Please send any recommended graduation pathway changes to JumpStart@la.gov using the subject line: *Recommended Graduation Pathway Change.*

The Department reserves the right to make administrative updates to Jump Start graduation pathways, including but not limited to updating course codes, correcting errors on course codes, correcting spelling errors and other similar changes.

The Department reserves the right to delete courses no longer meeting state standards. When this occurs, the Department may add a section to the graduation pathway indicating: “Courses Deleted from this Graduation Pathway.”

The Department reserves the right to make changes on credentialing requirements based on guidance provided by the Jump Start Graduation Pathways Review Panel. (Please see the *All Things Jump Start* web portal for information about this Panel.) The Department will also maintain contact with certifying agencies and the Workforce Investment Council (WIC) to update the Statewide, Core and Complementary credentials indicated in each graduation pathway.

Louisiana educators can seek assistance with Jump Start graduation pathways at any time by emailing their questions to JumpStart@la.gov

Help Resources

Please see the updated *All Things Jump Start* web portal: <http://www.louisianabelieves.com/courses/all-things-jump-start/> The updated portal provides easier access to:

- updated Jump Start graduation pathways;
- updated industry credential fact sheets that provide comprehensive details on over 100 Jump Start industry credentials;
- guidance on how your school can implement workplace internships and virtual workplace experiences; *and much, much more.*

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Pathway-Specific Courses: Pre-Engineering – LSU Partnership
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Unlike other Jump Start pathways, the Pre-Engineering pathway requires students to complete the four required courses, four courses from the additional course list and 1 career readiness course.

Students completing the four required courses will earn a **Silver STEM Diploma Seal**.

Students completing the four required courses **and** four courses from the Additional Course list will earn a **Gold STEM Diploma Seal**.

	Course Title	Course Code	Carnegie Credits	CTE 6%	CDF 6%
REQUIRED COURSES	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 & Development (LSU Partnership)	110861	1	✓	✓
ADDITIONAL COURSE LIST	Engineering Economy (LSU Partnership)	144200	1	✓	✓
	Principles of Engineering (LSU Partnership)	110864	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	165031/160352	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	1		

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		AP Biology 150307			
	Chemistry DE, Chemistry II, or AP Chemistry	Chemistry DE 150414 Chemistry II 150402 AP Chemistry 150410	1		
	AP Physics	AP Physics I –Algebra based 150724 AP Physics II – Algebra based 150725 AP Physics C: Elec 150794 AP Physics C: Mec 150795	1		
	Environmental Science: AP Environmental Science	150311	1		

* This course may be used as a Career Readiness course or regular pathway course and count towards the requirement of 9 Carnegie credits for the Pre-engineering graduation pathway

Career Readiness Courses

These courses all qualify as Career Readiness courses. Every Jump Start student must take a minimum of one Carnegie credit of Career Readiness courses.

Career Readiness courses are universal courses – they apply to every Jump Start graduation pathway.

Course Title	Course Code	Carnegie Credits	CTE 6%	CDF 6%
AgriScience I*	010301	1	✓	
Career Readiness Agriscience Agribusiness Natural Resources	010331	1	✓	
JAG I	042010	1	✓	✓
JAG II	042020	1	✓	✓
Education for Careers	080400	½	✓	
Education for Careers	080401	1	✓	
Journey to Careers Part 1	080402	½	✓	
Journey to Careers	080403	1	✓	
Journey to Careers Part 2	080404	½	✓	
Education for Careers Part I	080405	½	✓	
Education for Careers Part II	080406	½	✓	
Basic Career Readiness	080409	1	✓	
Advanced Career Readiness (including regionally-developed Career Readiness Courses)	080410	1	✓	
Quest for Success	080411	1	✓	✓

*- Courses that count towards an academic requirement cannot also count towards the requirement of 9 Carnegie credits for a graduation pathway.

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Internships, Cooperative Courses and Virtual Workplace Experience Courses

Cooperative courses, Virtual Workplace Experience courses, Pre-Apprenticeship and Internships (*with the exception of Non-CTE Internships*) are universal courses - they apply to every Jump Start graduation pathway.

Internships

There are three types of internships:

- 1) **CDF-Qualifying Internships** where students are placed in a company that operates in one of the WIC-approved high-demand industry sectors. CDF-Qualifying Internships qualify for *both* the 6% MFP adder paid for all CTE courses *and* the 6% Career Development Fund (CDF) adder;
- 2) **CTE Internships** where students are placed in a company that operates in any other industry sectors. CTE Internships qualify *only* for the 6% MFP adder for all CTE courses; and
- 3) **Non-CTE internships** where students are placed in a non-business internship. Non-CTE Internships do not qualify for any MFP adder. Examples of Non-CTE Internships include internships at a school office, a volunteer organization or a religious organization. **Non-CTE Internships are not part of any Jump Start graduation pathway.**

WIC-Approved High-Demand Industry Sectors

Internships that qualify for the 6% CDF payment must be in a WIC-approved high-demand industry sector.

<ul style="list-style-type: none"> • Automotive Service/Repair • Construction Crafts • Culinary (<u>only</u> for students pursuing the statewide ProStart/ ServSafe credentials) 	<ul style="list-style-type: none"> • Healthcare • HVAC • Information Technology 	<ul style="list-style-type: none"> • Manufacturing • Pharmacy • Transportation and Logistics
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Internships				
Course Title	Course Code	Carnegie Credits	CTE 6%	CDF 6%
CDF-Qualifying CTE Internship I (2 CREDITS)	080200	1	✓	✓
CDF-Qualifying CTE Internship II (2 CREDITS)	080201	2	✓	✓
CDF-Qualifying CTE Internship I (1 CREDIT)	080202	1	✓	✓
CDF-Qualifying CTE Internship II (1 CREDIT)	080203	2	✓	✓
CTE Internship I (1 credit; Non-CDF)	110402	1	✓	
CTE Internship I (2 credits; Non-CDF)	110403	2	✓	
CTE Internship II (1 credit; Non-CDF)	110404	1	✓	
CTE Internship II (2 credits; Non-CDF)	110405	2	✓	
Virtual Workplace Experience Courses approved for 2016-2017				
Course Title	Course Code	Carnegie Credits	CTE 6%	CDF 6%
Virtual Workplace Experience I	080204	½	✓	
Virtual Workplace Experience I	080205	1	✓	
Virtual Workplace Experience II	080206	½	✓	✓
Virtual Workplace Experience II	080207	1	✓	✓
Authentic Workplace Experience	080212	1	✓	

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Cooperative Courses

Course Title	Course Code	Carnegie Credits	CTE 6%	CDF 6%
Cooperative AgriScience Education I	010323	3	✓	
Cooperative AgriScience Education II	010325	3	✓	
Cooperative Office Education	040205	3	✓	
Cooperative Marketing Education I	041010	3	✓	
Cooperative Marketing Education II	041011	3	✓	
General Cooperative Education I	080300	3	✓	
General Cooperative Education II	080301	3	✓	
Cooperative Health Occupations	090004	3	✓	
Cooperative Family and Consumer Services	100800	3	✓	
Cooperative Technology Education	110098	3	✓	

Pre-Apprenticeship Courses

Course Title	Course Code	Carnegie Credits	CTE 6%	CDF 6%
Pre-Apprenticeship I (2 credits)	080208	2	✓	
Pre-Apprenticeship II (2 credits)	080209	2	✓	
Pre-Apprenticeship I (1 credit)	080210	1	✓	
Pre-Apprenticeship II (1 credit)	080211	1	✓	

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CDF-Qualifying Pre-Apprenticeship Courses				
Course Title	Course Code	Carnegie Credits	CTE 6%	CDF 6%
CDF-QUALIFYING PRE-APPRENTICESHIP I (1 CREDIT)	080230	1	✓	✓
CDF-QUALIFYING PRE-APPRENTICESHIP I (2 CREDITS)	080231	2	✓	✓
CDF-QUALIFYING PRE-APPRENTICESHIP II (1 CREDIT)	080233	1	✓	✓
CDF-QUALIFYING PRE-APPRENTICESHIP II (2 CREDITS)	080234	2	✓	✓
CDF-QUALIFYING PRE-APPRENTICESHIP III (1 CREDIT)	080236	1	✓	✓
CDF-QUALIFYING PRE-APPRENTICESHIP III (2 CREDITS)	080237	2	✓	✓
CDF-QUALIFYING PRE-APPRENTICESHIP IV (1 CREDIT)	080239	1	✓	✓
CDF-QUALIFYING PRE-APPRENTICESHIP IV (2 CREDITS)	080240	2	✓	✓

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Culminating Credential(s)

Regional Credentials

	<p><u>Pre-Engineering – LSU Partnership Regional Core Credential:</u> issued to students completing the 4 required, 4 courses from the additional course list, and 1 career readiness course:</p>
	<p><u>Complementary Credentials: students must attain two credentials from the list below:</u></p>
	<p>Recommended Safety Complementary Credentials</p> <ol style="list-style-type: none"> 1) Basic Safety Orientation - Association of Reciprocal Safety Councils 2) First Aid for Students Certification - Red Cross or approved equivalent* 3) OSHA 10 – General Industry - OSHA Certificate of Completion 4) OSHA 10 – Construction - OSHA Certificate of Completion <p>* - Jump Start policy is flexible in recognizing all legitimate First Aid programs. Currently - approved First Aid for Student Certification include American Red Cross, American Heart Association and National Safety Council. If a school system wishes to use a different First Aid certification, they must provide Jump Start with evidence that their intended First Aid certification includes all required components as well as a practical certification. Successful completion of First Aid certification requirements in Regional and Integrated pathways may include First Aid only, CPR and AED only or a comprehensive combination of First aid, CPR and AED.</p>
	<p>Recommended Computer Literacy Complementary Credentials</p> <ol style="list-style-type: none"> 5) Internet and Computing Core Certification (IC³) – Certiport 6) Microsoft Office Specialist Excel – Microsoft and Certiport 7) Microsoft Office Specialist PowerPoint – Microsoft and Certiport 8) Microsoft Office Specialist Word – Microsoft and Certiport

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Sample Schedule

Each schedule is *only one example* of how a student can meet the requirements of this pathway and graduate on time with the required culminating credential(s).

Each high school will develop its own standard schedules for Jump Start students based on the courses available to its students (in school, at the local technical college, or via Course Choice).

Sample Schedule – Regional Credential			
9 th Grade	10 th Grade	11 th Grade	12 th Grade
<div style="border: 1px solid black; background-color: #fff9c4; padding: 10px; margin: 10px auto; width: 80%;"> <p style="text-align: center;">To be determined with LSU and school systems participating in the Pre-Engineering pilot program</p> </div>			
7 credits	7 credits	7 credits	7 credits
Credentials Earned by this Hypothetical Student	LSU Pre-Engineering Certificate of Completion OSHA 10 and Microsoft Office Specialist Excel		

Every Pathway Can be Adapted for Students Meeting Act 833 (2014) Eligibility Criteria

Every Jump Start graduation pathway can be adapted for students with disabilities who meet Act 833 (2014) eligibility criteria. Students must complete nine credits of CTE courses from the courses listed in the pathway. The IEP team has the authority to determine the credentialing level a student must achieve for the purposes of graduation (analogous to using individual performance criteria to meet EOC requirements for the purposes of graduation).

IEP teams with questions about how to adapt this graduation pathway for their student should contact JumpStart@la.gov