

LSU STEM PATHWAYS

ELEMENTARY | MIDDLE | HIGH

LSU STEM Pathways is a program designed for K-12 students in the Louisiana public or private school system to get hands-on training with STEM subjects in biomedical sciences, computing, digital design and emergent media, and pre-engineering.

LSU partners with schools across the state to prepare teachers, students, and administrative staff to offer the curriculum. Join us in 2023-24 by attending our **summer training institute!**

2022-23 By the Numbers



209

Teachers



104

Schools



43

Districts*



28

Courses

*Charters are considered their own district



+10,000

Student Enrollment

+8,600

Unique Students

Benefits For Schools

Up to \$400 in CTE/CDF funding per student per seat for HS credit courses (Up to \$159 in CTE if taken in middle school)

High school credit in middle school

SPS points for Industry Based Credentials and Dual Enrollment

Vertical alignment of STEM curriculum from kindergarten through high school

Benefits for Students

High-Quality, Project-Based Courses

Earn LSU Pathway Certificates and Industry Based Credentials (courses only)

Opportunity to apply for Scholarships at LSU

Dual Enrollment opportunities (HS only)

Benefits for Teachers

Access to LSU graduate tuition scholarships and support programs

Opportunity to participate in grant funded STEM education research

Access to a minimum of six free Community of Practice sessions

In order to qualify for the benefits shown above, your school must **offer** an LSU STEM Pathways course or module taught by a **trained** classroom teacher. We invite you to become part of the

2023-2024 LSU STEM Pathways Program!

Will you be offering an LSU STEM Pathway course in 2023-24?

1. February 1 – Plan your 2023-24 LSU STEM Pathway courses

Review our course offerings in the [LSU STEM Pathways Course Catalog](#) to determine which courses you want to offer at your school in 2023-2024. If you are a new school, will be offering a new course this year, or have a new teacher for an existing offering at your school, please review the training schedule in the following section. All courses must be taught by a trained high school teacher which requires that teacher to attend our Virtual Summer Training Institute.

2. March 15 – Receive and review electronic Memorandum of Understanding

On March 15th, the 2023-24 Memorandum of Understanding (MoU) will be emailed to all interested schools. If you do not currently offer a pathways course and would like to receive this email, please complete an Interest Form. [Click Here](#)

3. April 15 – Return electronically signed MoU

All new AND returning schools should complete the MoU by April 15th for the early bird discount or May 15th for the final deadline.

4. May 1 – LSU will send new teacher training confirmation emails

After LSU receives the MoU, teachers who need to be trained in the Virtual Summer Training Institute will be provided a training confirmation email containing further details.

For questions about the Summer Training Institute & MoU, please send an email to stempathways@lsu.edu.

VIRTUAL SUMMER TRAINING INSTITUTE INFORMATION¹

Session 1: MAY 30- JUNE 14
Session 2: JUNE 15 - JUNE 30

\$1,920 per course session²

In addition to the training registration fee, schools/districts are encouraged to pay a teacher a stipend for attending the training using CDF funding. Registration fee waivers, tuition waivers, and stipends may be available for selected schools and/or teachers participating in the Summer Training Institute courses. Please email stempathways@lsu.edu to request information regarding your eligibility.

Requirements to Participate in the Summer Training Institute

Schools/ District	<ul style="list-style-type: none"> Complete and return the electronic Memorandum of Understanding (MoU) by April 15th in which the school agrees to: <ul style="list-style-type: none"> Offer the course(s) in 2023-24 Provide necessary technology and other required course materials Pay \$80 student fee³ to LSU for each <i>high school</i> student enrolled in an LSU STEM Pathway Course (See below for rebate on student fees!)
Teachers	<ul style="list-style-type: none"> If not trained previously, you are required to attend training for your Pathway course No content-specific prior knowledge required (details in Course Catalog)⁴ Strong work ethic and a desire to engage in project-based learning Reliable internet access and computer to be able to actively participate during synchronous portions of training⁵

A catalog of training courses offered at the 2023-24 Summer Training Institute can be found [here](#)! A detailed schedule of training times is on the following pages.

Student Fee REBATE

<p>Eligibility for REBATE:</p> <ol style="list-style-type: none"> Return the MoU April 15th AND Have a teacher trained in a high school credit Pathways course this summer AND Have that teacher teach the course in 2023-24 	<p>REBATE OFFER:</p> <p>Student fees waived for up to 24 students for each training section attended!!!</p> <p>*That's \$1,920 in waived fees for a 1-section training or \$3,840 for a 2-section training!!</p>
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¹ Some summer training courses can be taken for graduate credit with a full tuition scholarship (course fees have to be paid by participants or their schools). Participating teachers who want to receive graduate credit must enroll in the LSU Graduate School by May 1, 2023. If you are interested in receiving grad credit, please send a brief email to stempathways@lsu.edu. We will accommodate teachers who are attending the Teacher Leader Summit on May 31 and June 1. In observance of the Juneteenth on June 19th, we will accommodate asynchronous learning.

² Some courses require two sections for complete training and CTE/CDF course eligibility. With approval by LSU, the elementary and middle school cohort module training may be free of charge if one or more high school credit Pathway courses are offered in the district.


³ Student fee covers: enrollment and course access, student certification, and course support for teachers and students. Student fees and rebate eligibility is not applicable to pathway courses taken for Dual Enrollment or the LSUE companion courses.

⁴ Although prior STEM experience is a plus, many successful STEM Pathway teachers had no prior STEM background.

⁵ If a teacher does not have access to either a device/internet, the school is responsible for providing it.

LSU STEM CERTIFICATION PATHWAYS: VIRTUAL 2023 SUMMER TRAINING INSTITUTE

Session 1: May 30th - June 14th Session 2: June 15th - June 30th

- We will accommodate teachers who are attending the **Teacher Leader Summit** on May 31 and June 1. In observance of the Juneteenth on June 19th, we will accommodate asynchronous learning.
- On pages 7-13, training listed in blue (1st session only) or yellow (2nd session only) cost \$1,920. Training listed in green (session 1 and 2) cost \$3,840. For training that is offered “by request only”, please inquire for pricing. Supplemental coaching in session 2 for Computational Thinking and Cybersecurity are included free of charge for session 1 participants.
- We will be offering this year's summer training for the LSU STEM Pathways in a 100% virtual setting (**except for the two Aquaponics courses, see details for this class in the appropriate section below)
- Each course (except for Aquaponics) offers synchronous online meetings.
 - “AM Synchronous” means that synchronous instructional times will occur between **8 AM - 1 PM**
 - “PM Synchronous” means that synchronous instructional times will occur between **12:00 PM - 5:00 PM**
 - Each pathway will have daily synchronous group meetings from **12 PM to 1 PM** to share information with teachers from both the AM and PM course sections.
- Assignments and asynchronous materials will be required to be completed between each synchronous online meeting; details will be provided to you during each section.
- **We have done our best to provide accurate training dates and times for each course. However, training sessions and times are subject to change.**
- Some training sessions can be taken as part of a graduate course for graduate credit. These courses are denoted with a .

Overall Snapshot - Morning Sessions		Overall Snapshot - Afternoon Sessions	
Session I (12 days), Morning (8 - 1) May 30th - June 2nd, June 5th - June 9th, June 12th- June 14th	Session II (12 days), Morning (8 - 1) June 15th-June 16th, June 19th-June 23rd, June 26th-June 30th	Session I (12 days) Afternoon (12 - 5) May 30th - June 2nd, June 5th - June 9th, June 12th- June 14th	Session II (12 days) Afternoon (12 - 5) June 15th-June 16th, June 19th-June 23rd, June 26th-June 30th
Introduction to Biomedical Sciences	Biology 1001/1002 High School Companion Course *PILOT*	Forensics	Comparative Anatomy & Physiology
	Environmental Sustainability and Management *PILOT*	Introduction to STEM Pathways & Careers	Introduction to Computing
Computational Thinking and Coding	Computational Thinking and Coding Supplemental coaching/IBC prep	Advanced Robotics (VEX)	Principles of Engineering
Cybersecurity I	Cybersecurity I Supplemental coaching/IBC prep	Biomedical Sciences, Computing, Digital Design and Emergent Media, Pre-Engineering, Environmental Sustainability, Elementary/Middle, Basic Career Readiness General: <ul style="list-style-type: none">• See sections below for more detailed information about each course.• Courses in the same column cannot be taken concurrently.• We will accommodate teachers who are attending the Teacher Leader Summit on May 31 and June 1. In observance of the Juneteenth on June 19th, we will accommodate asynchronous learning. Course Specific <ul style="list-style-type: none">• Programming for STEM and Interactive Computing are available upon request to teachers who have previously taught at least 2 LSU Computing Pathway courses.• Data Manipulation and Analysis is available upon request for teachers who have previously taught at least 1 LSU Computing pathway course.• Engineering Economy, Senior Biomedical Capstone, and Bioinformatics are available on request to teachers. Inquire as to suitability.• Biology 1001/1002 High School Companion Course is not CTE/CDF eligible and has no student fees (and thus no rebates)	
	Survey of Computer Science		
Sound Design	Digital Storytelling		
Digital Image	Motion Graphics		
Interactive Media Capstone	Advanced Film and TV Production *PILOT*		
	Introduction to Esports *PILOT*		
Basic Film and TV Part 1 and Part 2 (both parts required)			
Programming Digital Media Part 1 and Part 2 (both parts required)			
Coding for the Web Part 1 and Part 2 (both parts required)			
Video Game Design Part 1 and Part 2 (both parts required) *PILOT*			
Introduction to Engineering	Engineering Design and Development		
Introduction to Robotics	Survey of Drones		
Step Into STEM	Middle School Cohort 6-8		
	Elementary School Cohort PK-5		



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Special Session Offerings

Introduction to Aquaponics (middle school credit)	June 19 - June 23 In-person from 8 AM - 5 PM + 2 Zooms at a later date
Aquaponics Design (high school credit - Pilot)	June 19 - June 23 In-person from 8 AM - 5 PM + 2 Zooms at a later date
Engineering Design and Development (Abridged)	June 26th-30th, Virtual, 1 PM - 5 PM (\$960)



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BASIC CAREER READINESS - ALL PATHWAYS

Session I (12 days)

May 30th - June 2nd, June 5th - June 9th, June 12th- June 14th

**Introduction to STEM Pathways and Careers
(9th grade, available to 7th/8th grade)**

PM Synchronous, No Prerequisites, Basic Career Readiness Course
















BIOMEDICAL SCIENCES PATHWAY	
Session I (12 days) May 30th - June 2nd, June 5th - June 9th, June 12th- June 14th	Session II (12 days) June 15th-June 16th, June 19th-June 23rd, June 26th-June 30th
Introduction to Biomedical Sciences <i>AM Synchronous, No Prerequisites</i>	Comparative Anatomy & Physiology <i>PM Synchronous, No Prerequisites</i>
Forensics <i>PM Synchronous, No Prerequisites</i>	
By request we can schedule individualized training for Senior Biomedical Capstone and Bioinformatics . (Sessions 1 & 2: times dependent on participants) For select teachers only; inquire as to suitability.	

COMPANION COURSE FOR LSU – EUNICE DUAL ENROLLMENT	
Session I (12 days) May 30th - June 2nd, June 5th - June 9th, June 12th- June 14th	Session II (12 days) June 15th-June 16th, June 19th-June 23rd, June 26th-June 30th
	Biology 1001/1002 High School Companion Course <i>AM Synchronous, No Prerequisites</i> This training is designed as a companion high school course for teachers offering the asynchronous BIO 1001/1002 dual enrollment course through LSU - Eunice. Biology 1001/1002 High School Companion Course is not CTE/CDF eligible, does not incur student fees, and does not qualify for student fee rebates.



COMPUTING PATHWAY

<p>Session I (12 days) May 30th - June 2nd, June 5th - June 9th, June 12th- June 14th</p>	<p>Session II (12 days) June 15th-June 16th, June 19th-June 23rd, June 26th-June 30th</p>
<p>Computational Thinking and Coding <i>AM Synchronous, No Prerequisites</i> Additional assignments will be assigned and can be completed asynchronously during the 2nd session. All additional assignments must be submitted prior to June 30th.</p>	<p>Supplemental Coaching Computational Thinking and Coding <i>AM Synchronous, No Prerequisites</i> Available for teachers who want assistance with the additional assignments and Industry Based Credential preparation</p>
<p>Cybersecurity I <i>AM Synchronous, No Prerequisites</i> Additional assignments will be assigned and can be completed asynchronously during the 2nd session. All additional assignments must be submitted prior to June 30th.</p>	<p>Supplemental Coaching Cybersecurity I <i>AM Synchronous, No Prerequisites</i> Available for teachers who want assistance with the additional assignments and Industry Based Credential preparation</p>
	<p>Survey of Computer Science <i>AM Synchronous, No Prerequisites</i></p>
<p>By request and confirmation of eligibility, we can schedule individualized training for Programming for STEM, Data Manipulation and Analysis, and Interactive Computing.</p>	

DIGITAL DESIGN & EMERGENT MEDIA PATHWAY

Session I (12 days) May 30th - June 2nd, June 5th - June 9th, June 12th- June 14th	Session II (12 days) June 15th-June 16th, June 19th-June 23rd, June 26th-June 30th
 Sound Design <i>AM Synchronous, No Prerequisites</i>	 Digital Storytelling <i>AM Synchronous, No Prerequisites</i>
 Digital Image <i>AM Synchronous, No Prerequisites</i>	 Motion Graphics <i>AM Synchronous, No Prerequisites</i>
 Interactive Media Capstone <i>AM Synchronous, No Prerequisites</i>	 Advanced Film and TV Production (PILOT) <i>AM Synchronous, Prerequisites: Basic Film & TV Production</i>
	 Introduction to Esports (PILOT) <i>AM Synchronous, No Prerequisites</i>
 Basic Film and TV Production Section 1 <i>AM Synchronous, No Prerequisites, Section 2 is Required</i>	 Basic Film and TV Production Section 2 <i>AM Synchronous, Prerequisites: Section 1</i>
 Programming Digital Media Section 1 <i>AM Synchronous, No Prerequisites, Section 2 is Required</i>	 Programming Digital Media Section 2 <i>AM Synchronous, Prerequisites: Section 1</i>
 Coding for the Web Section 1 <i>AM Synchronous, No Prerequisites, Section 2 is Required</i>	 Coding for the Web Section 2 <i>AM Synchronous, Prerequisites: Section 1</i>
 Video Game Design Section 1 (Pilot) <i>AM Synchronous, No Prerequisites, Section 2 is Required</i>	 Video Game Design Section 2 (Pilot) <i>AM Synchronous, Prerequisites: Section 1</i>
By request we may be able to offer Digital Storytelling in Session 1.	

PRE-ENGINEERING PATHWAY

Session I (12 days) May 30th - June 2nd, June 5th - June 9th, June 12th- June 14th	Session II (12 days) June 15th-June 16th, June 19th-June 23rd, June 26th-June 30th
 Intro to Engineering <i>AM Synchronous, No Prerequisites, Includes Dual Enrollment training</i>	Engineering Design and Development <i>AM Synchronous, No Prerequisites, Includes Advanced IBC opportunity</i>
 Intro to Robotics <i>AM Synchronous, No Prerequisites</i>	Principles of Engineering <i>PM Synchronous, Prerequisite: Intro to Engineering</i>
Advanced Robotics VEX (PM Synchronous) <i>PM Synchronous, Corequisite or Prerequisite: Intro to Robotics</i> Focus is on VEX Competitions	Survey of Drones (Pilot) <i>AM Synchronous, No Prerequisites, Includes IBC opportunity</i> For select teachers only; inquire as to suitability
	Engineering Design and Development Abridged Training (during the week of June 26-June 30th, 1 PM - 5 PM) Requires PC, *Special cost \$960 instead of \$1920 as session is abbreviated Prerequisite: Already Certified in Inventor
Engineering Economy available upon request, inquire as to suitability	

ENVIRONMENTAL PROTECTION AND SUSTAINABILITY PATHWAY

Session I (12 days) May 30th - June 2nd, June 5th - June 9th, June 12th- June 14th	Session II (12 days) June 15th-June 16th, June 19th-June 23rd, June 26th-June 30th
	Environmental Sustainability and Management (Pilot) <i>AM Synchronous, No Prerequisites, inquire as to suitability</i>
	Aquaponics Design (High School, Pilot) Date: June 19 - June 23 In-person from 8 AM - 5 PM + two Zoom meetings which will take place after the initial training with dates/times TBD <i>No Prerequisites, inquire for suitability</i>

MIDDLE SCHOOL COURSES

Session I (12 days) May 30th - June 2nd, June 5th - June 9th, June 12th- June 14th	Session II (12 days) June 15th-June 16th, June 19th-June 23rd, June 26th-June 30th
Step Into STEM (6th) <i>AM Synchronous, No Prerequisites</i>	Survey of Computer Science (9th grade, available to 8th grade) <i>AM Synchronous, No Prerequisites</i>
Introduction to STEM Pathways and Careers (9th grade, available to 7th or 8th grade) <i>PM Synchronous, No Prerequisites, Basic Career Readiness</i>	Introduction to Computing (6th) <i>PM Synchronous, No Prerequisites</i>
	Introduction to Aquaponics 6th June 19 - June 23, In-person from 8 AM - 5 PM + two Zoom meetings which will take place after the initial training with dates/times TBD, <i>No Prerequisites</i>

MIDDLE SCHOOL AND ELEMENTARY STEM MODULES

Session I (12 days) May 30th - June 2nd, June 5th - June 9th, June 12th- June 14th	Session II (12 days) June 15th-June 16th, June 19th-June 23rd, June 26th-June 30th
	Elementary Cohort Module Training PK-5 <i>AM Synchronous, No Prerequisites</i>
	Middle School Cohort Module Training 6-8 <i>AM Synchronous, No Prerequisites</i>