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	104	43	28
Teachers	Schools	Districts*	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.

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VIRTUAL SUMMER TRAINING INSTITUTE INFORMATION[1]	
Session 1: MAY 30- JUNE 14 **Session 2: JUNE 15 - JUNE 30**	$1,920 per course session[2]

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	• Complete and return the electronic **Memorandum of Understanding (MoU)** by April 15th in which the school agrees to:
	  ○ Offer the course(s) in 2023-24
	  ○ Provide necessary technology and other required course materials
	  ○ Pay $80 student fee[3] to LSU for each *high school* student enrolled in an LSU STEM Pathway Course (See below for **rebate** on student fees!)

Teachers	• 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 training[5]

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

Eligibility for REBATE:	REBATE OFFER:
1. Return the MoU April 15th AND 2. Have a **teacher** trained in a high school credit Pathways course this summer AND 3. Have that teacher teach the course in 2023-24	Student fees waived for up to **24 students** for each training section attended!!! *That's **$1,920** in waived fees for a 1 section training or **$3,840** for a 2 section training!!

[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.

[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.

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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.
- 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 which will occur at different points each day.
  - "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 🎓.

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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		Forensics	Comparative Anatomy & Physiology
Computing Course Details Coming Soon		Intro to STEM Pathways & Careers	
Sound Design	Digital Storytelling	Advanced Robotics (VEX)	
Digital Image	Motion Graphics	**Biomedical Sciences, Computing, Digital Design and Emergent Media, Pre-Engineering, Environmental Sustainability, Elementary/Middle, Basic Career Readiness**	
Interactive Media Capstone	Advanced Film and TV Production *PILOT*	**General:** ● 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.	
	Introduction to Esports *PILOT*	**Course Specific** ● **Engineering Economy, Senior Biomedical Capstone, and Bioinformatics** are available on request to teachers**.** Inquire as to suitability.	
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	Principles of Engineering		
Introduction to Robotics	Engineering Design and Development		
	Survey of Drones		
	Environmental Sustainability and Management *Pilot*		
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)

Course Training Details Coming Soon	
Survey of Computer Science	Data Manipulation and Analysis
Cybersecurity I	Cybersecurity II
Intro to Computational Thinking	Programming for STEM
Interactive Computing	Introduction to Computing

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BASIC CAREER READINESS - ALL PATHWAYS

Session I (12 days), 12 PM to 5 PM
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)
No Prerequisites, Basic Career Readiness Course

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BIOMEDICAL SCIENCES	
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 (AM Synchronous) No Prerequisites	**Comparative Anatomy & Physiology** (PM Synchronous) No Prerequisites
Forensics (PM Synchronous) No Prerequisites	
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.	

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COMPUTING

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
Details Coming Soon	

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DIGITAL DESIGN & EMERGENT MEDIA

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 (AM Synchronous) No Prerequisites	**Digital Storytelling** (AM Synchronous) No Prerequisites
Digital Image (AM Synchronous) No Prerequisites	**Motion Graphics** (AM Synchronous) No Prerequisites
Interactive Media Capstone (AM Synchronous) No Prerequisites	**Advanced Film and TV Production** (AM Synchronous) Pilot (Prerequisites : Basic Film & TV Production)
	Introduction to Esports Pilot (AM Synchronous) No Prerequisites
Basic Film and TV Production Section 1 (AM Synchronous), No Prerequisites, Section 2 is Required	**Basic Film and TV Production Section 2** (AM Synchronous), Prerequisites: Section 1
Programming Digital Media Section 1 (AM Synchronous), No Prerequisites, Section 2 is Required	**Programming Digital Media Section 2** (AM Synchronous), Prerequisites: Section 1
Coding for the Web Section 1 (AM Synchronous), No Prerequisites, Section 2 is Required	**Coding for the Web Section 2** (AM Synchronous), Prerequisites: Section 1
Video Game Design Section 1 (Pilot) (AM Synchronous), No Prerequisites, Section 2 is Required	**Video Game Design Section 2 (Pilot)** (AM Synchronous), No Prerequisites, Section 2 is Required
By request we may be able to offer Digital Storytelling in Session 1.	

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PRE-ENGINEERING	
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** (AM Synchronous) No Prerequisites (Dual Enrollment opportunity)	**Engineering Design and Development** (AM Synch.) No Prerequisites (Includes IBC opportunity)
🎓 **Intro to Robotics** (AM Synchronous) No Prerequisites	**Survey of Drones** (AM Synchronous) No Prerequisites (Includes IBC opportunity) For select teachers only; inquire as to suitability
Advanced Robotics VEX (PM Synchronous) Corequisite or Prerequisite: Intro to Robotics Focus is on VEX Competitions	**Principles of Engineering** (AM Synchronous) Prerequisite: Intro to Engineering
Engineering Economy (PM Synchronous) (strong math background preferred)	**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

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ENVIRONMENTAL PROTECTION AND SUSTAINABILITY

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) (AM Synchronous) No Prerequisites, inquire as to suitability
	Aquaponics Design (High School, Pilot Only) 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 No Prerequisites For Select Teachers Only; Inquire for Suitability

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MIDDLE SCHOOL AND ELEMENTARY

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) (AM Synchronous) No Prerequisites	**Elementary Cohort Module Training PK-5** (AM Synchronous) No Prerequisites
Introduction to STEM Pathways and Careers (9th grade, available to 7th/8th grade) (PM Synchronous) No Prerequisites, Basic Career Readiness Course	**Middle School Cohort Module Training 6-8** (AM Synchronous) No Prerequisites
	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 No Prerequisites
Introduction to Computing (6th) Details Coming Soon	
Survey of Computer Science (9th grade, available to 8th grade) Details Coming Soon	