



STEM Renaissance Pathway Brief

Environmental Protection & Sustainability



AN INITIATIVE OF  **LDOE**

Environmental Protection & Sustainability

The Environmental Protection and Sustainability Pathway has been established to provide both TOPS University and TOPS Tech diploma-seeking high school students with the knowledge and skills necessary to pursue careers connected to the natural environment. The ultimate goal of this pathway is to allow students the opportunity to understand the weather, geology, and ecology that is specific to our region. Students will understand careers available to them in a variety of different settings in order to prepare for the sustainability of natural resources and the future of our state’s citizens.

College and Career Connections

Finding high-wage career opportunities directly out of high school can be challenging. It typically requires advanced capstone credentials accompanied by work experience and/or apprenticeships in the field of study.

High School to Career	Community/ technical College to Career	University to Career
Agricultural/ Farmer Logger Recycling Worker Seafood Industry Worker	Environmental Compliance Officer Forest Conservation Worker Occupational Health & Safety Technician Water Distribution Technician	Environmental Science/ Law Geologist Meteorologist Wildlife Enforcement Agent

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Capstone Credentials

In order to graduate, Jump Start students must earn at least one credential from the options below.

*Please contact the individual providers to confirm if provider specific courses are structured to offer the credential.

INDUSTRY BASED CREDENTIALS: Depending on student course completion
Ducks Unlimited Ecology Conservation and Management Certification
Geographic Information System (GIS)- Entry Level Technician Certification
Water Distribution Operator I
Water Production Operator I
Water treatment Operator I

STEM Renaissance Digital Design & Emergent Media Pathway Structure

To earn the **Silver STEM Diploma Seal** students must pass one course from each of the four following concentration areas: Environmental Science STEM Pathway Approved course, Humans in the Biosphere, Surveying and cartography, and Environmental Protection and Sustainability Career Exploration Course. (These course options are listed on the following chart.)

To earn the **Gold STEM Diploma Seal** students must complete the requirements for the Silver STEM Diploma Seal, pass three Environmental Protection and Sustainability Elective courses from the approved STEM Pathway listing, and pass an additional Math or Science course. (These course options are listed on the following chart.)

To complete the **TOPS Tech Diploma** students must complete the Gold STEM Diploma Seal requirements and one course from the approved Career Readiness Course list.

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STEM Pathway Course Options

Concentration Area	Course Code	Course Title	Carnegie Credits
To earn the Silver STEM Diploma Seal students <u>must</u> pass one course from each of the four following concentration areas: Environmental Science STEM Pathway Approved course, Humans in the Biosphere, Surveying and Cartography, and Environmental Protection and Sustainability Career Exploration Course.			
Environmental Science STEM Pathway Approved Course (Select 1)	150311	AP Environmental Science OR	1
	150914	Environmental Science DE- CEVA 1103 OR	1
	312090	Louisiana Wetlands Ecology	1
Human in the Biosphere (Select 1)	220310	AP Human Geography OR	1
	010356	Biotechnology in Agriscience OR	1
	312094	Conservation Biology (LSU Partnership) OR	1
	010361	Forestry	1
Surveying and Cartography (select 1)	010102	Elementary Surveying Measurements OR	1
	010103	GIS Entry Level 1 OR	1
	891300	Remote Sensing	1
Exploration Course for Environmental Protection and sustainability (Select 1)	010475	CASE (Curriculum for Agri & Sci Ed) Animal Science OR	1
	010474	CASE (Curriculum for Agri & Sci Ed) Plant Science OR	1
	312091	Intro to Maritime Careers and Opportunities OR	1
	TBA*	Weather Hazard Mitigation (University of Louisiana Monroe) *Please email STEM@la.gov for course code	1

Additional Course Options	Course Code	Course Title	Carnegie Credits
<p>To earn the Gold STEM Diploma Seal students <u>must</u> complete the requirements for the Silver STEM Diploma Seal, pass three Environmental Protection and Sustainability Elective courses from the approved STEM Pathway listing, and pass an additional Math or Science course.</p>			
<p>Approved Environmental Protection and Sustainability Gold Course Options (Select 3)</p>	061177	AP Computer Science A OR	1
	061175	AP Computer Science Principles OR	1
	0802202	CDF Qualifying CTE Internship I OR	1
	312094	Conservation Biology (LSU Partnership) OR	1
	080532	Data Manipulation and analysis (LSU Partnership) OR	1
	150909	Earth Science: DE - CGEO 1103 Physical Geology OR	1
	010102	Elementary Surveying Measurements OR	1
	010430	Environmental Studies in Agriculture OR	1
	010361	Forestry OR	1
	010103	GIS Entry Level 1 OR	1
	010104	GIS Level 2 OR	1
	010452	Horticulture I OR	1
	110801	Intro to Engineering (LSU Partnership) OR	1
	312091	Intro to Maritime Careers and Opportunities OR	1
	312092	Introduction to the History of water Management OR	1
	312090	Louisiana Wetlands Ecology OR	1
	061100	PLTW Computer Science Essentials OR	1
	110802	PLTW Intro to Engineering Design OR	1
	TBA	Weather Hazard Mitigation (University of Louisiana Monroe) *Please email STEM@la.gov for course code	1
	010390	Veterinary Assistant OR	1
	010391	Veterinary Assistant II OR	1
110502	Water Distribution Operator OR	1	
110500	Water Production Operator OR	1	
110501	Water Treatment Operator	1	

Math OR Science course students should select ONE course option.

Math <u>OR</u> Science course* (select 1) *continued on next page	160347	Advanced Math- Functions and Statistics OR	1
	160346	Advanced Math- Pre-Calculus OR	1
	160501	Advanced Math-Pre-Calculus: DE-CMAT 1223 Trigonometry OR	1
	150307	Biology II: AP Biology OR	1
	160327	AP Calculus AB OR	1
	160328	AP Calculus BC OR	1
	150410	AP Chemistry OR	1
	150311	AP Environmental Science OR	1
	150794	AP Physics C: Electricity and Magnetism OR	1
	150795	AP Physics C: Mechanics OR	1
	150724	Physics I: AP Physics I- Algebra Based OR	1
	150725	Physics: AP Physics II- Calculus Based OR	1
	222004	AP Psychology OR	1
	160352	AP Statistics OR	1
	150321	Biology: DE CBIO 1013 General Biology I OR	1
	150322	Biology I: DE CBIO 1033 General Biology I (Science Majors) OR	1
	150302	Biology II OR	1
	150324	Biology II: DE CBIO 1033 General Biology I (Science Majors) OR	1
	150326	Biology II: DE CBIO 1043 General Biology II (Science Majors) OR	1
	149995	Biology II: DE CBIO 2103 Microbiology OR	1
	160506	Calculus DE CMAT 2113-5 Calculus I OR	1
	160507	Calculus DE CMAT 2123-5 Calculus II OR	1
	150414	Chemistry I: DE CCEM 1103 Chemistry I OR	1
150322	Chemistry I: DE CCEM 1123 General Chemistry I (Science Majors) OR	1	
150402	Chemistry II OR	1	

Math OR Science course options continued.		
150420	Chemistry II: DE CCEM 1123 General Chemistry II (Science Majors) OR	1
150422	Chemistry II: DE CCEM 1133 General Chemistry II (Science Majors) OR	1
150914	Environmental Science DE- CEVS 1103 OR	1
225011	Introduction to Psychology CPSY 2013 OR	1
150726	Physics I: DE CPHY 2113 Physics I (Algebra/Trig Based) OR	1
150728	Physics I: DE CPHY 2113 Physics I (Calculus Based) OR	1
150701	Physics II OR	1
160348	Pre-Calculus OR	1
160349	Probability and Statistics OR	1
160356	Probability and Statistics: DE CMAT 1303 OR	1
222001	Psychology	1

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