



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 |

****The STEM Renaissance Pathways must be used for students entering grade 9 in the 2024-2025 school year and future cohorts. The archived Louisiana STEM Pathway briefs must be followed for students in grades 10, 11, and 12 in the 2024-2025 school year. Email STEM@la.gov with any questions.**

Universal Documents

[STEM Pathways](#)

[CDF Eligible Courses](#)

[Jump Start Funding](#)

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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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Environmental Protection & Sustainability

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.

| | | | |
|---|--|--|---|
| <p>Math <u>OR</u> Science course* (select 1)</p> <p>*continued on next page</p> | 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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