

STEM Pathway or Course Design Criteria

Consider the key elements, essential criteria and indicators of quality when designing or proposing a new course or course progression for inclusion within the [Louisiana STEM Pathways \(Grades 9-12\)](#).

Key Element	Essential Criteria	Indicators of Quality
Overall Design	<i>Course work is grounded in the big ideas and foundational knowledge and skills of the targeted STEM discipline</i>	-A clear connection to and alignment with applicable national frameworks, industry standards, and widely accepted positions held by leading authorities within the discipline
	<i>Pathway course(s) developed in collaboration with university and industry leaders in the targeted STEM discipline</i>	-Evidence of input from college/university programs, career and workforce preparation programs, and industry experts is evidenced in the course materials
Pathway Coursework	<i>Course(s), particularly those that are pathway-specific, promote development of high-level 21st-century competencies for college and career readiness</i>	-Student learning experiences are intentionally structured to emphasize scientific, engineering, design, and mathematical practices -Pathway-specific courses are structured with an emphasis on project-based learning and student-centered learning
	<i>A well-coordinated progression of learning is represented in an integrated and transdisciplinary approach</i>	-Explicit connections are made from the proposed course(s) among other courses within the STEM pathway to support deeper learning
	<i>Accurate portrayals of and engagement with rigorous STEM content within, and across, included courses of study</i>	-Aligned with core academic standards for math and science -Maximizes opportunity for authentic integration of engineering and technology as appropriate
Postsecondary Opportunity & Credentials	<i>Embedded credentials furthered by the pathway are directly tied to the targeted STEM pathway discipline and are highly relevant and beneficial for students</i>	-Successful completion of a course will lead to an industry-recognized credential -Credential(s) preparation and skills are articulated within the proposed curriculum

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	<i>Postsecondary opportunities furthered by the pathway are directly tied to the targeted STEM pathway discipline and are highly relevant and beneficial for students</i>	<ul style="list-style-type: none"> -Advanced student opportunities (e.g. apprenticeships, preferential university, programmatic preferences/admission) are available to students
Professional Development	<i>Teacher capacity is developed through an ambitious and comprehensive system of intentionally coordinated assessment, training, and additional supports to support pathway implementation</i>	<ul style="list-style-type: none"> -High-quality educator assessments (portfolios, content exams) are embedded to evaluate and improve teacher preparedness -Initial and sustained formal teacher trainings are provided by qualified personnel and include best practices for teaching and learning
Evaluation & Monitoring	<i>Evaluation and monitoring of pathway implementation to be performed by the provider includes specific mechanisms for data collection and analysis that will inform improvement of implementation</i>	<ul style="list-style-type: none"> -Provider has identified and/or developed specific tools and methods for data collection and monitoring for further analysis (e.g. student work samples, surveys, walk-through checklists) -Provider has articulated a clear plan for how feedback and other data will be used to inform improved outcomes for teaching and learning and successful pathway or course implementation
Implementation & Partnerships	<i>Innovative and strategic partnerships are utilized to ensure successful implementation and support the unique needs of students and school systems</i>	<ul style="list-style-type: none"> -A plan is provided that clearly articulates how the provider intends to message and market to districts and schools -Elements of course design and implementation are developed with evidence of input and support from school systems and other stakeholders as appropriate
Quality Control & Participation Tracking	<i>Agreements and systems are in place for LDOE to initially and regularly assess program quality and utilization</i>	<ul style="list-style-type: none"> -Provider has provided all requested training materials for review -Provider has agreed to invite LDOE to observe all training -Provider has a system in place to track pathway course participation in near real time -Provider designs and maintains a database of trained teachers and school systems that have agreed to support the course