

Technology Education: Engineering-Manufacturing Software

COMPONENT #: 1-209-002

POINTS TO BE EARNED: 120 MPP

PART I – PLANNING

DESCRIPTION: Write a brief description of content and intent of component.

This component is designed to enable the participant to develop and/or update technical knowledge of the software in the program areas of Aerospace, Construction, Engineering, Information Technology, Materials Processes, Production, Robotics, Transportation, and Technology Studies at the middle school and senior high school level with the emphasis on software skills used in industry, but also including, academic support, STEM integration and instructional software.

Upon successful completion of this professional development activity, the participant will be able to demonstrate skills attained in the workshop and incorporate the workshop principles into classroom instruction.

STANDARDS/FOCUS AREAS ADDRESSED BY COMPONENT: Identify the standards, national/state/district imperatives, initiatives or key focus areas this component supports.

Standards for Professional Learning (choose one)

- | | |
|---|--|
| <input type="checkbox"/> Learning Communities | <input type="checkbox"/> Learning Designs |
| <input type="checkbox"/> Leadership | <input type="checkbox"/> Implementation |
| <input type="checkbox"/> Resources | <input checked="" type="checkbox"/> Outcomes |
| <input type="checkbox"/> Data | |

Florida Educator Accomplished Practices (check all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Instructional Design and Lesson Planning | <input checked="" type="checkbox"/> Assessment |
| <input type="checkbox"/> The Learning Environment | <input type="checkbox"/> Continuous Professional Improvement |
| <input checked="" type="checkbox"/> Instructional Delivery and Facilitation | <input type="checkbox"/> Professional Responsibility and Ethical Conduct |

Florida Leadership Standards (check all that apply)

- | | |
|---|---|
| <input type="checkbox"/> Student Learning Results | <input type="checkbox"/> Decision Making |
| <input type="checkbox"/> Student Learning as a Priority | <input type="checkbox"/> Leadership Development |
| <input checked="" type="checkbox"/> Instructional Plan Implementation | <input type="checkbox"/> School Management |
| <input type="checkbox"/> Faculty Development | <input type="checkbox"/> Communication |
| <input type="checkbox"/> Learning Environment | <input type="checkbox"/> Professional and Ethical Behaviors |

IPEGS Standards (check all that apply)

- | | |
|---|--|
| <input checked="" type="checkbox"/> PS 2 – Knowledge of Learners | <input type="checkbox"/> PS 6 – Communication |
| <input checked="" type="checkbox"/> PS 3 – Instructional Planning | <input checked="" type="checkbox"/> PS 7 – Professionalism |
| <input type="checkbox"/> PS 4 – Instructional Delivery and Engagement | <input type="checkbox"/> PS 8 – Learning Environment |
| <input checked="" type="checkbox"/> PS 5 – Assessment | |

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IMPACT FOCUS AREA(S): select the intended impact focus area(s) from the choices below. Note that Impact Evaluation procedures should reflect this level of impact.

X Educator knowledge/skill (content)

X Student learning

X Educator (professional growth)

Organizational support and change

SPECIFIC LEARNER OUTCOMES: Identify the intended learner outcomes (number and content of learner outcomes should be reflective of the total points participants will earn as a result of completing this learning).

1. Identify the industry applications of the software in the related career clusters of Engineering, Information Technology, STEM, Manufacturing and/or Transportation.
2. Demonstrate and use software with proficiency in the appropriate job-specific application.
3. Identify the Career Technical Education state approved curriculum standards that correlate with specific instructional objectives related to the specific engineering and related software skills.
4. Identify the Standards for Technological Literacy that correlate with the implementation of the software in a specific job assignment in related careers.
5. Develop hands-on instructional activities integrating technology into the curriculum and learning delivery system.
6. Develop and align interim and final assessments to match learning objectives, and effectively evaluate students' knowledge and operational skills
7. Use interim and formative assessments and monitor student progress to guide instruction.
8. Modify assessment tools to accommodate learning styles and varying levels of software skill knowledge.
9. Share student assessment data with students and parents to assist student achievement of subject content skills of job-specific software.
10. Apply technology to organize and integrate assessment interim and final data.
11. Guide students to achieve industry certification of software applications skills in specific careers, and for post-secondary career preparation.

PART II – LEARNING

LEARNING PROCEDURES: Describe the experiences (the “what”) and formats/methods (the “how”) that will be used to provide participants with the knowledge and skills sufficient to master the intended learner outcome of this component.

1. Participants will have a variety of experiences that will include, but are not limited to, a blended format to include:
 - o Presentation of current research
 - o Demonstration of best practices
 - o Web based resources
 - o Live online course sessions
 - o Hands-on applied learning activities
 - o Case studies
 - o Collaborative learning activities

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2. Participate actively in the instructor's lectures/presentations, discussions and activities on innovative strategies/techniques, technology integration and/or materials for the attainment of software knowledge and skills (SLO 1-10).
3. Implement specific instructional strategies and activities that will address the needs of diverse learners (SLO 2, 4, 7 & 8).
4. Practice using the software application in a "hands-on" workshop (SLO 2, 7 & 8).
5. Create lessons by using the Technology Education Curriculum Frameworks, selected standards for Technological Literacy, and current Florida Standards (SLO 3, 5 & 6).

PART III – IMPLEMENTATION

IMPLEMENTATION PROCEDURES: Method(s) and resource(s) that will be provided to support implementation of new learning for participants (check all that apply).

- X Apply newly acquired professional knowledge, skills, dispositions, and behaviors to improve practice.
- X Provide sufficient classroom- and school-focused support and assistance by skillful coaches, mentors, or others to the educator to ensure high-fidelity implementation of professional learning.
- X Provide educators with web-based resources and assistance to support implementation of professional learning.

PART IV – EVALUATION

IMPACT EVALUATION PROCEDURES: Describe the processes that will be used to determine the impact (as identified in previous section titled "Impact Focus Areas"). Description should reflect methods for determining at least ONE of those areas, and will include a specific section for each impact focus area identified for this component.

1. Educator Knowledge/skill: Will consist of observation of participants using the identified skills, techniques, methods, specified in the component objectives during the learning events.
2. Educator: Evidence will include classroom walk-throughs, student portfolios, surveys, participant reflections, participant portfolios.
3. Student Learning: Evidence will include evidence of implementation through documented impact on student achievement.

COMPONENT EVALUATION PROCEDURES: Describe the process(es) that will be used to determine the effectiveness of this component to include design, implementation and impact (check all that apply).

- Evaluate the impact of all professional learning on educator's practice through reflection, assessment, collaborative protocols for examining educator practice and work samples, peer visits, and/or professional portfolios.
- X Determine the degree to which educator's professional learning contributed to student performance gains as measured by classroom assessment data.

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- X Use summative and formative data from state or national standardized student achievement measures, when available, or other measures of student learning and behavior such as district achievement tests, progress monitoring, educator-constructed tests, action research results, discipline referrals, and/or portfolios of student work to assess the impact of professional learning.

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Department: Career & Technical Education

Name of Author/Position: Pamela B. Lopez - Curriculum Support Specialist