Improving Industrial Technology Education with Flexible Learning Options and Student Support Services

Heartland Community College's (HCC) Flexible Learning for Industrial Technology Education (FLITE) project will demonstrate a new model for industrial technology education that employs an open manufacturing lab and flexible delivery of curriculum to enhance student access and meet industry workforce needs.

FLITE Project Goals Have FIVE Key Objectives:

1. Creating an open lab for industrial-based equipment
   - Modify space for the FLITE Open Lab
   - Offer two online courses this semester, MAIN 101 (Industrial and Building Electricity) and MAIN 202 (Fluid Power and Mechanical Systems), where the students are completing the entire hands-on portion of the online class in the FLITE Open Lab
2. Incorporating innovative student success resources to complement the open lab
   - CTE Program Coaching now offered by full-time program coordinator faculty
   - Supplemental Instruction (SI) strategies being adapted into the FLITE Open Lab
   - New Associate Director of Career and Technical Education advising current students, recruiting new students, and supporting student success
3. Adapting curriculum
   - Review, revise and update syllabus and then work through instructional re-design for each additional course to be offered in the FLITE Open Lab format
4. Promoting equity through educational access
   - Work with Workforce Equity Initiative (WEI) to attract and retain previously underserved students
   - Work with Student Success Coaches to provide support services to promote student success
5. Increasing industrial technology career awareness
   - New Associate Director of Career and Technical Education recruiting new students through community events and school visits

In This SECOND Year Of The Grant, We Will:

1. Instructional re-design continuing for MAIN 102, 220, and 222 (to be offered Spring 2023)
2. Offer courses in the open-access laboratory space
   - Offering two online courses this semester, MAIN 101 and MAIN 202
3. Evaluate the project on several levels
   - For the Fall 2022, we are comparing the traditional F2f sections with online sections for MAIN 101 and for MAIN 202
   - The traditional F2F sections have in class lab time scheduled (and students have the opportunity for additional FLITE lab use)
   - The online sections provide content to the students online and require students to use the FLITE Lab for the hands-on work
   - Instructors report that ALL students in ALL FOUR sections are on track to succeed in these courses
   - Nearly all of the students in the F2F classes are enrolled through apprenticeship programs, while all of the students in the online classes are general students (meaning that none of the students in the online classes are enrolled through apprenticeship programs)
   - There is demographic variety in all four of the classes (female, African American, Hispanic, and 25+ for age)
4. Complete additional SI Leader Training
   - Department faculty, facilitators, staff, and peer leaders will complete additional SI Leader Training and Faculty Awareness Training
   - Some SI training is now being offered internally to student leaders and new project team members
5. HCC working with industry partners and advisory committee members to further develop this project; may include dual credit secondary partnerships to enhance workforce pipelines and promote career pathways and career lattice awareness for area students

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For More Information:
Kimberly Travers (PI), Distinguished Professor of Industrial Technology (Kim.Travers@heartland.edu)
Chris Miller (Co-PI), Distinguished Professor of Industrial Technology (Chris.Miller@heartland.edu)
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Figure 1 | Student working on Skills Activities for MAIN 101 using the Amatrol trainers

Figure 2 | Faculty troubleshooting Skills Activities for MAIN 202 using the Amatrol trainers

Figure 3 | Skills Activities for Amatrol trainers for the MAIN 101 and 202 classes are easily available in the front of the open lab

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