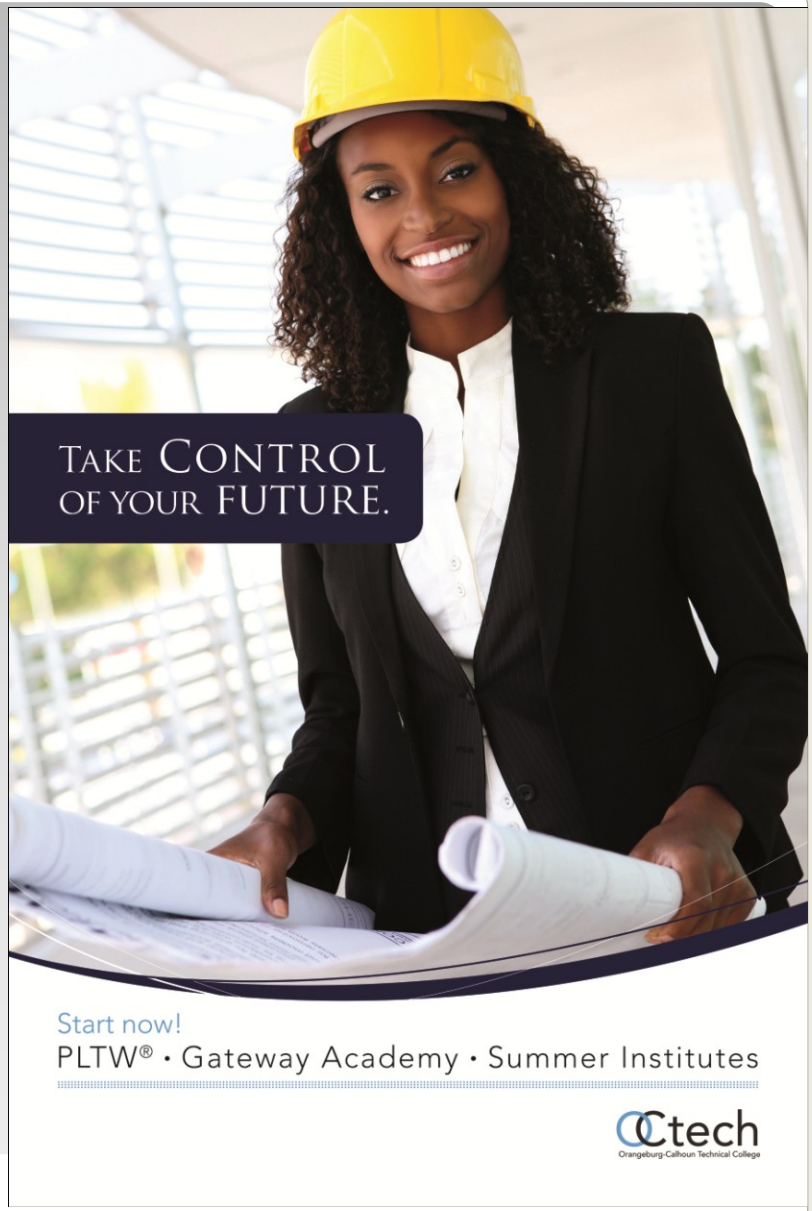
Enhancing Career Clusters and Majors

South Carolina Department of Education
with Higher Education Partners

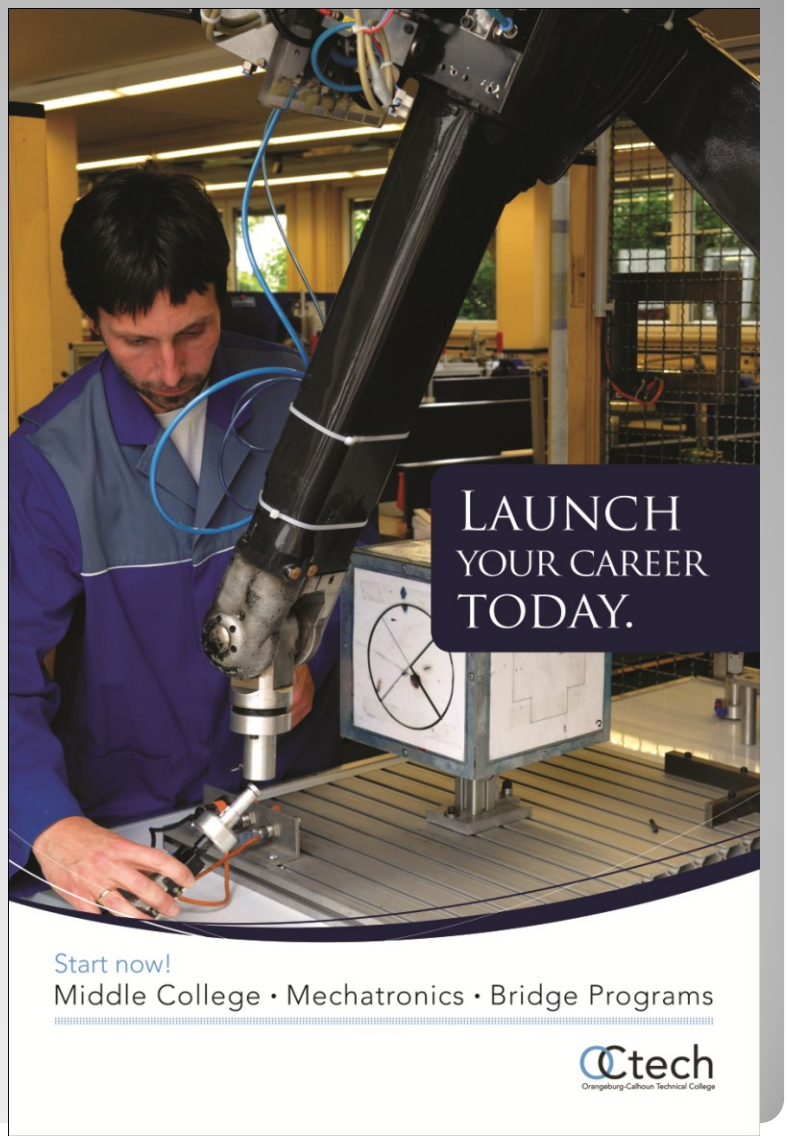
South Carolina has been designated as a Demonstration State for two parallel STEM Career Pathways

- Project Lead the Way ™
- Mechatronics



The goal is to establish statewide pathways and articulation models:

- K-12
- Technical College System
- Four-Year Colleges and Universities



Secondary Partners Use Higher Education Partners to Enhance STEM Career Pathways

- Award Dual Credit
- Leverage Resources
- Leverage Faculty Training
- Expand Student Transfer Opportunities
- Leverage Statewide Articulation Models

- Statewide Agreement Status (PLTW)
  - Dual credit and transfer model created to include transfer of credit from two-year to four year colleges and universities
  - Exemption credit model revisited
  - New Community College PLTW partnership model implemented
  - Statewide transfer brochure published through CHE for general education courses
  - Joint PLTW professional development
  - Collaboration of stakeholders

Major included in e-IGP System

- Statewide Agreement Status (Mechatronics)
  - Competencies agreed upon and validated
  - Postsecondary certificates established
  - Associate degree approved by CHE
  - Dual credit/exemption/transfer models created
  - Certification and assessments under development
  - Joint professional development
  - Affiliate model created
  - Collaboration of stakeholders

Major included in e-IGP System

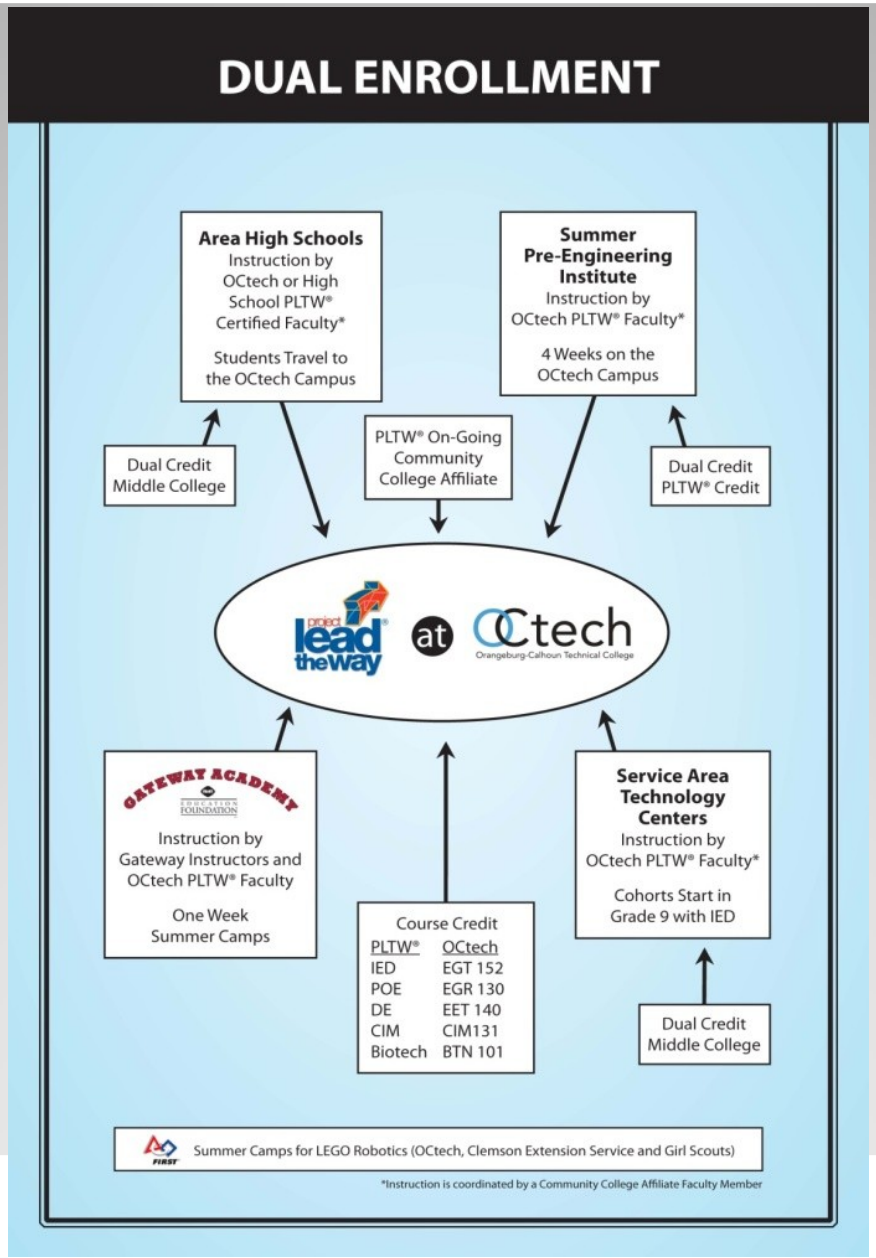
- Tools
  - Statewide e-Individual Graduation Plan system
  - Statewide Articulation System (under development)
  - CHE course alignment project

Funded by State EEDA

Sample Dual Credit Pre-Engineering Major Using Nationally Recognized *Project Lead the Way* Pre-Engineering Curriculum:

- Intro to Engineering Design (EGT 152)
- Principles of Engineering (EGR 130)
- Digital Electronics (EET 140)
- Computer Integrated Manufacturing (CIM 131)

Project Lead the Way: 12 Credits


DUAL ENROLLMENT
Area High Schools
Instruction by OCtech or High School PLTW® Certified Faculty*
Students Travel to the OCtech Campus
Summer Pre-Engineering Institute
Instruction by OCtech PLTW® Faculty*
4 Weeks on the OCtech Campus
Dual Credit Middle College
PLTW® On-Going Community College Affiliate
Dual Credit PLTW® Credit
project lead the way
at
OCtech
Orangeburg-Calhoun Technical College
GATEWAY ACADEMY
EDUCATION FOUNDATION
Instruction by Gateway Instructors and OCtech PLTW® Faculty
One Week Summer Camps
Course Credit
PLTW® OCtech
IED EGT 152
POE EGR 130
DE EET 140
CIM CIM131
Biotech BTN 101
Service Area Technology Centers
Instruction by OCtech PLTW® Faculty*
Cohorts Start in Grade 9 with IED
Dual Credit Middle College
FIRST
Summer Camps for LEGO Robotics (OCtech, Clemson Extension Service and Girl Scouts)
*Instruction is coordinated by a Community College Affiliate Faculty Member

Sample Dual Credit State Developed and Industry Validated Mechatronics Major:

- Mechatronics I
- Mechatronics II… (IMT 102, IMT 112)
- Mechatronics III
- Mechatronics IV… (EEM 117, IMT 131)

Mechatronics: 13 credits

Sample Dual Credit State Developed and Industry Validated Mechatronics and Pre-Engineering Blended Major:

- Mechatronics I
- Mechatronics II (IMT 102, IMT 112)
- Intro to Engineering (EGT 152 will be equivalent for IMT 104)
- Principles of Engineering (EGR 130 will be equivalent of EGR 104)

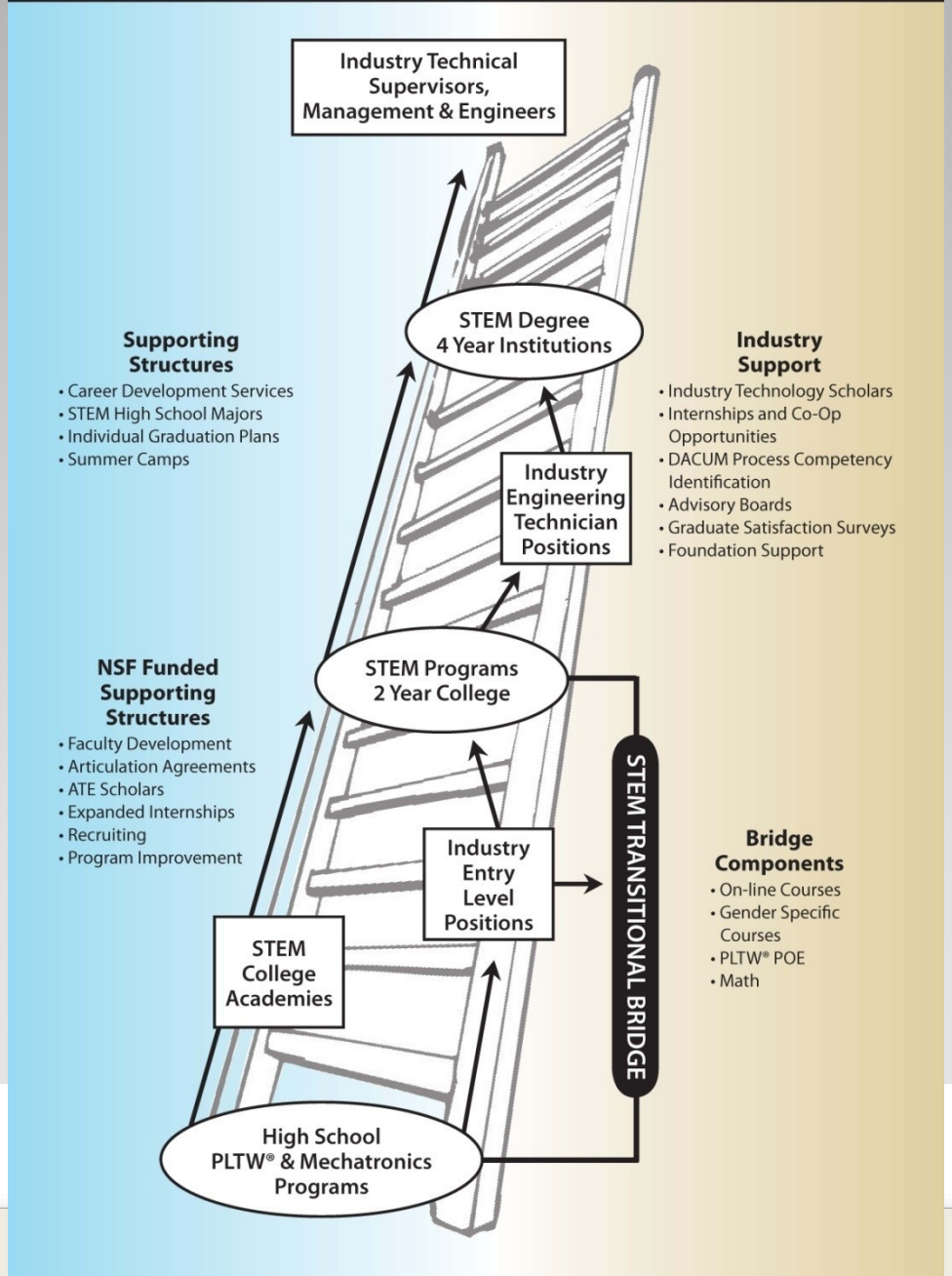
Mechatronics: 11 credits

Sample Dual Credit State Developed and Industry Validated Mechatronics and Pre-Engineering Blended Major:

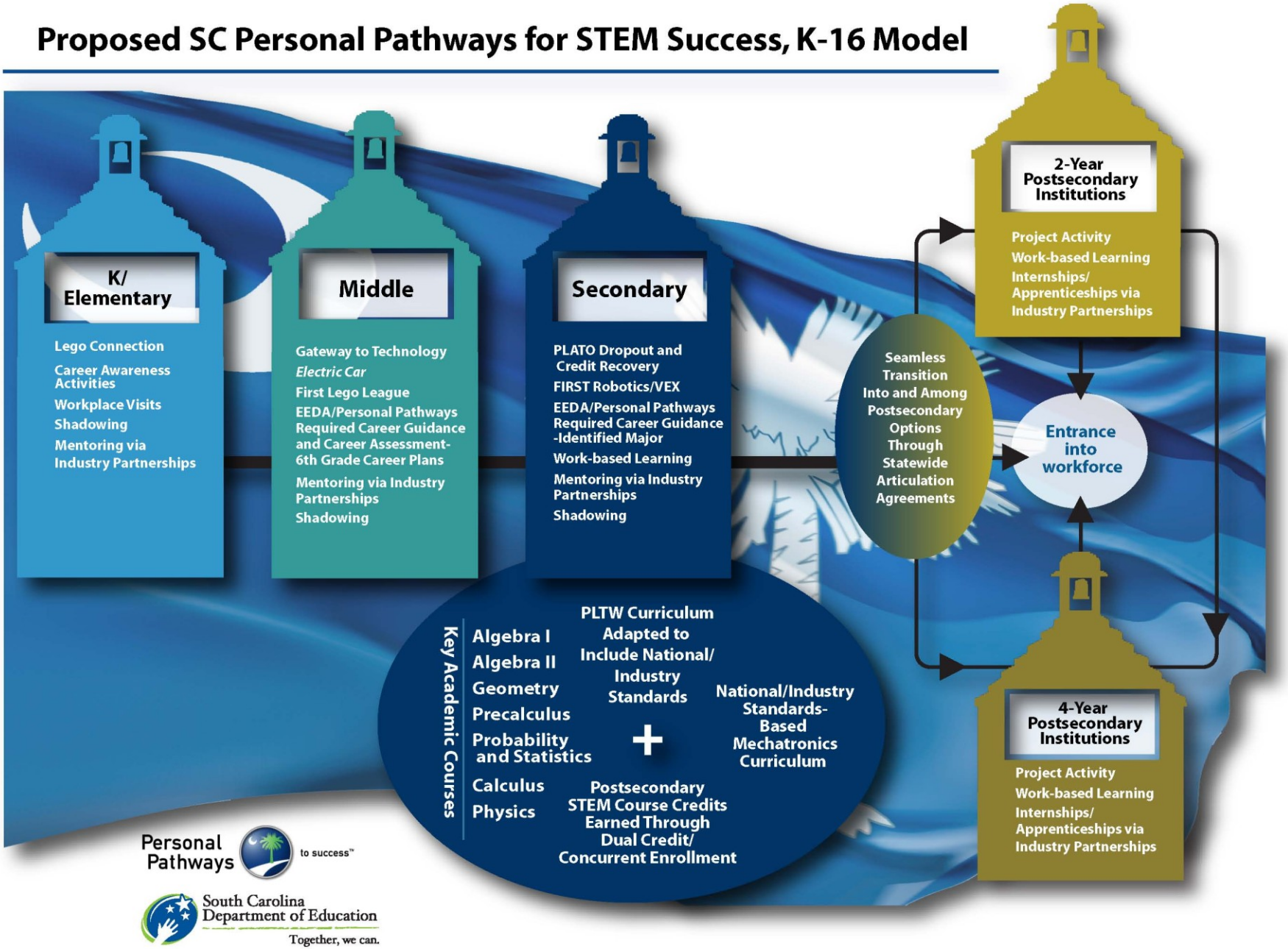
- Intro to Engineering Design (EGT 152 will be equivalent of IMT 104)
- Principles of Engineering (EGR 130 will be equivalent of EGR 104)
- Mechatronics I
- Mechatronics II.. (IMT 102, IMT 112)

Mechatronics: 11 credits

ATE PATHWAYS MODEL



Proposed SC Personal Pathways for STEM Success, K-16 Model

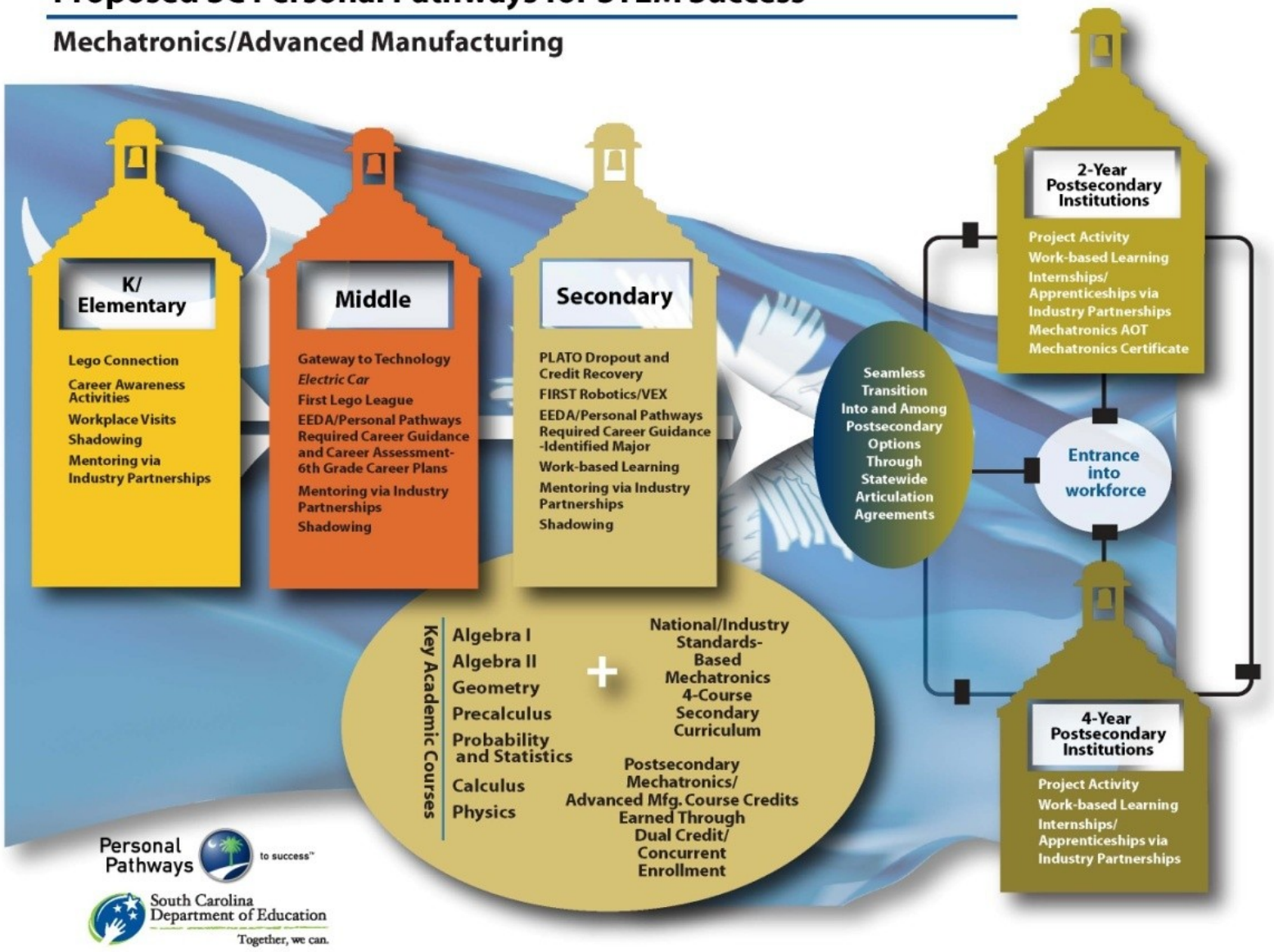


Personal Pathways to success™

South Carolina Department of Education
Together, we can.

Proposed SC Personal Pathways for STEM Success

Mechatronics/Advanced Manufacturing



- Challenges
  - Four-year institution participation
  - Textbook, software, and equipment costs are barriers to implementation
  - Cost of PLTW professional development
  - Secondary credentials and accreditation issues