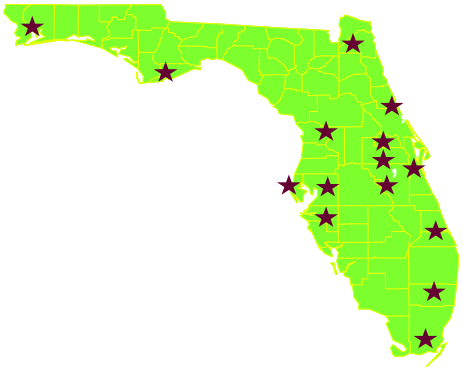
A Process Map for Statewide Engineering Technology / Manufacturing Technology Curriculum Reform



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Manufacturing Workforce Needs

Addressing the needs for skilled workers is a required, competitive and survival strategy for most manufacturers.

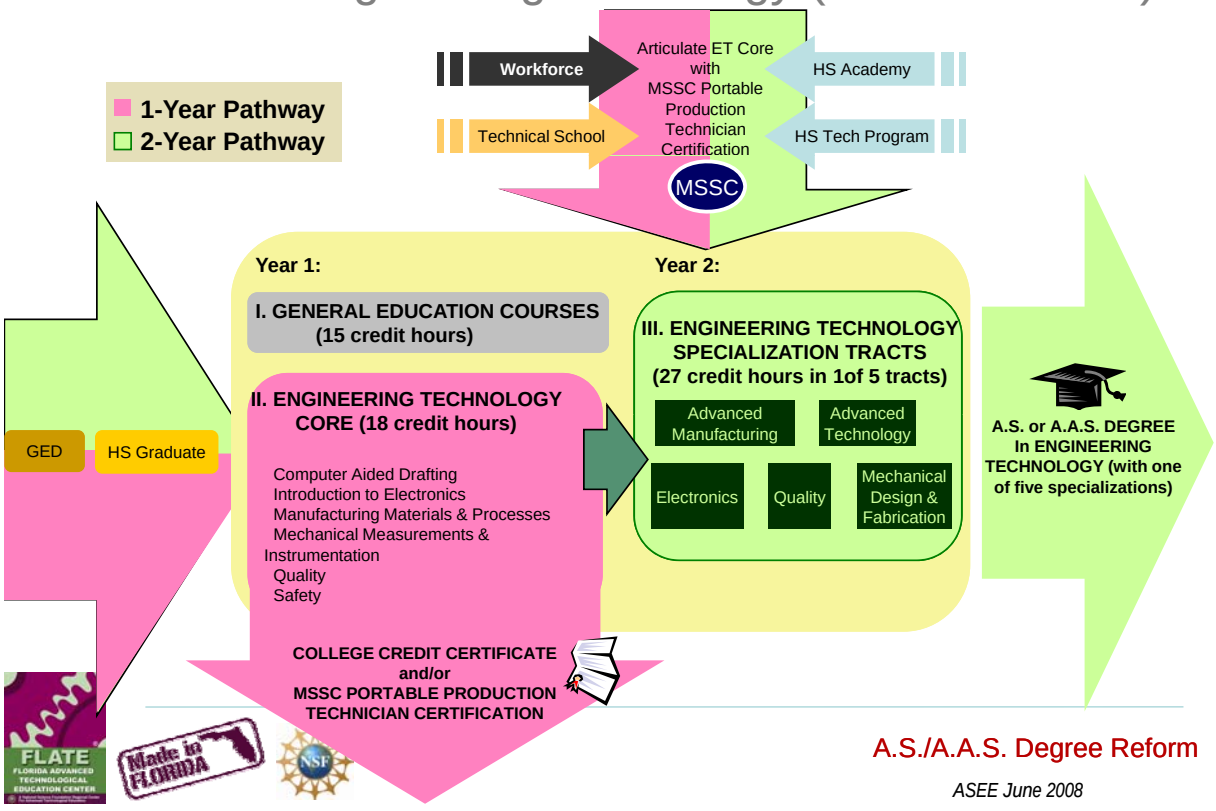
The Educational System must create a rigorous and relevant curriculum that:

- Meets industry competency requirements
- Industry Certification
- Presents consistent offerings
- Contains articulation pathways
- Includes True Business Involvement
- Addresses Employability & Life Skills

Findings

Manufacturers	Community Colleges	State	Schools
• Qualified workers • Certifications • CC offerings • OJT or on site	• Enrollment • Marketing • Competition • Fac. development	• Articulation • Benchmarks • Credentialing • Certifications • Work readiness	• Awareness • Articulations • Frameworks
Lack of communication (silos)			
MSSC - National benchmarks for manufacturing competencies			

A.S./A.A.S. Engineering Technology (60 credit hours)



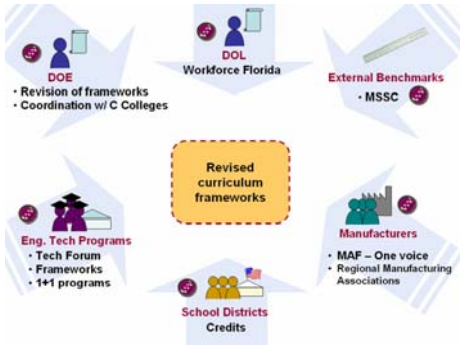
- Advanced Manufacturing Track
  - Automation Certificate
  - Lean Manufacturing Certificate
  - Pneumatics, Hydraulics and Motors for Manufacturing Certificate
- Advanced Technology Track
  - Applied Technology Specialist Certificate
- Electronics Track
  - Electronics Aide Certificate
- Mechanical Design and Fabrication Track
  - CNC Machinist Certificate
  - Computerized Woodworking Certificate
- Quality Track
  - Lean Six Sigma Green Belt Certificate
  - Six Sigma Black Belt Certificate

Framework Design

1 1 + 1 Curriculum

- **Completion points**
- **College Certificates**
- **Industry certification**
- **Specializations**
- **Community needs**
- **System-wide marketing**

2 Revised frameworks



FL DOE

- Revision of frameworks
- Coordination w/ Colleges

DOL

- Workforce Florida
- Statewide needs

External Benchmarks

- Certification
- Industry standards

Revised curriculum frameworks

Eng Tech Programs

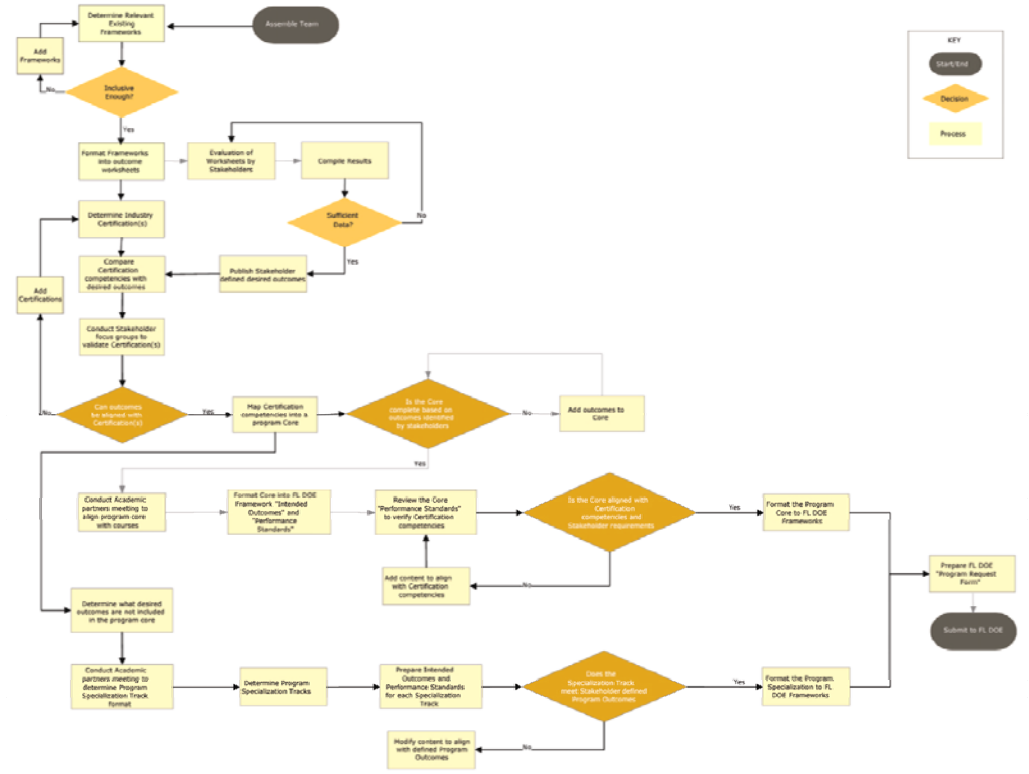
- Eng Tech Forum
- Curriculum Frameworks
- 1+1 program

Manufacturers

- Employer needs
- MAF – One voice
- Regional Manufacturing Associations

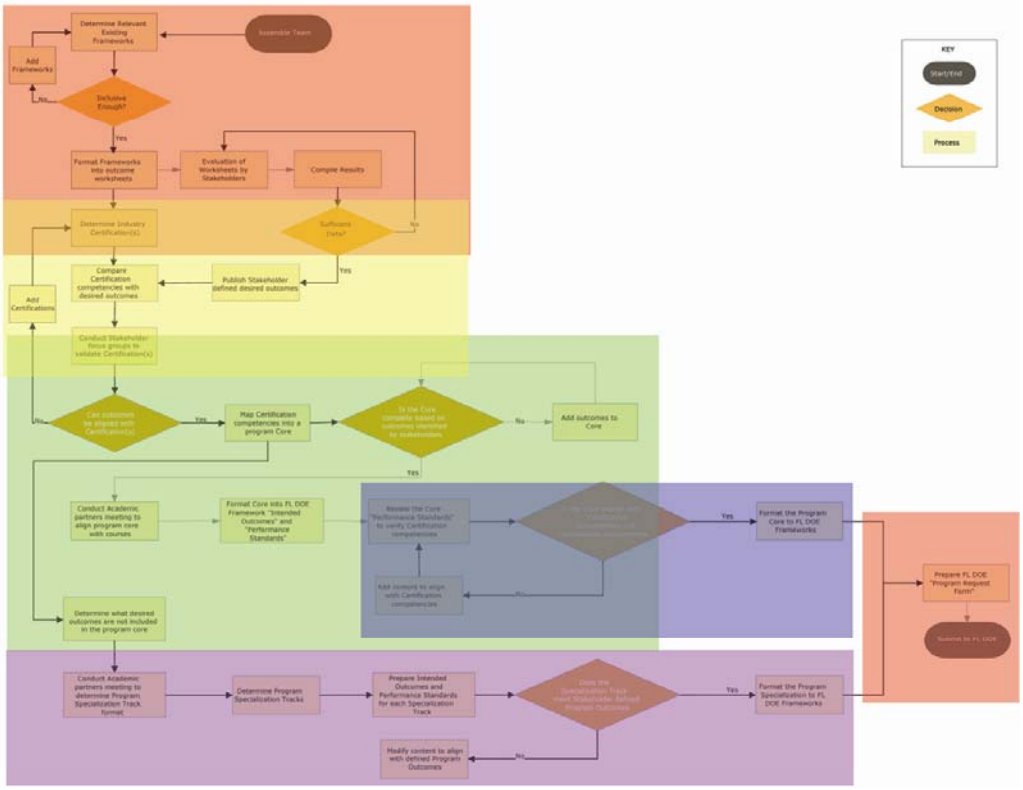
School Districts

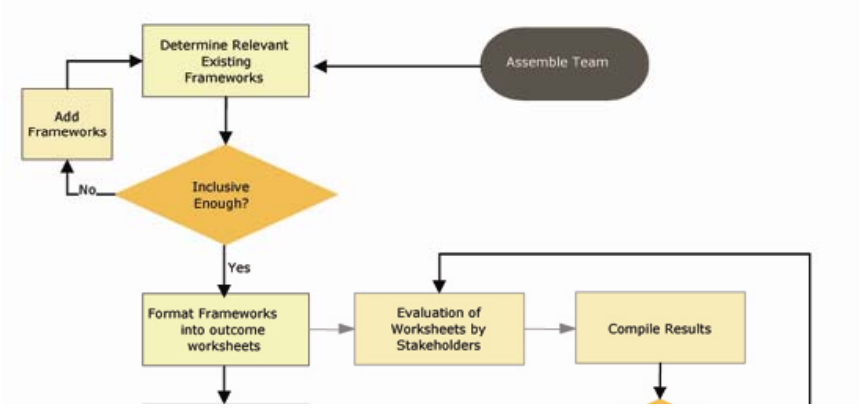
- Credits
- Articulation



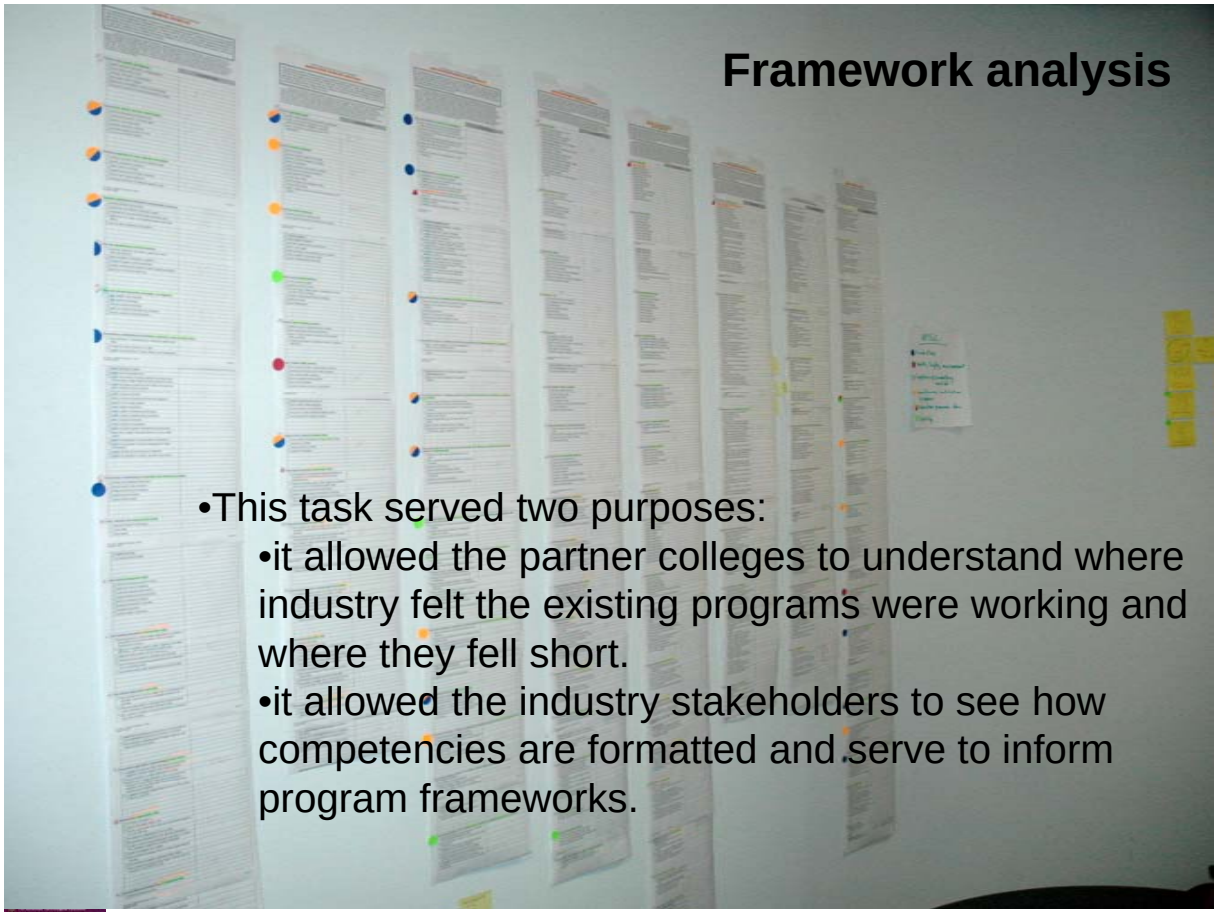
A.S./A.A.S. Degree Reform

ASEE June 2008



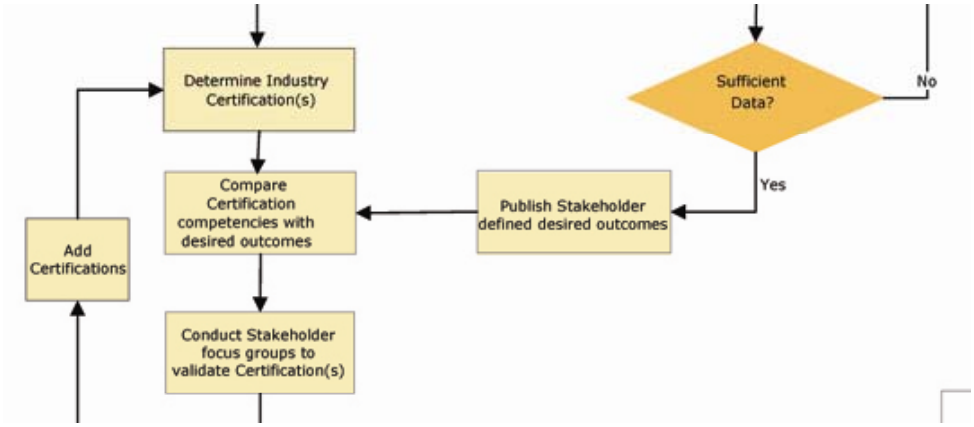


- Determine the need and define the scope:
  - stakeholder input to determine desired program competencies
  - cross reference competencies with the existing program frameworks

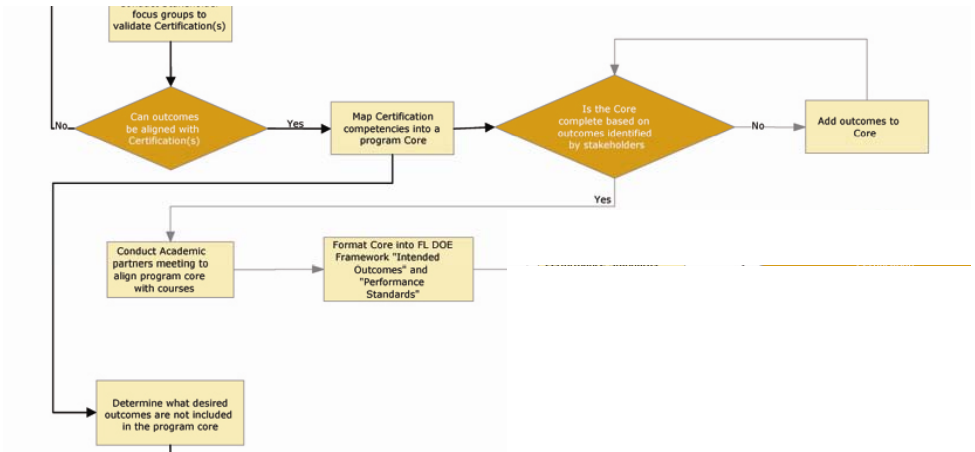


Framework analysis

- This task served two purposes:
  - it allowed the partner colleges to understand where industry felt the existing programs were working and where they fell short.
  - it allowed the industry stakeholders to see how competencies are formatted and serve to inform program frameworks.

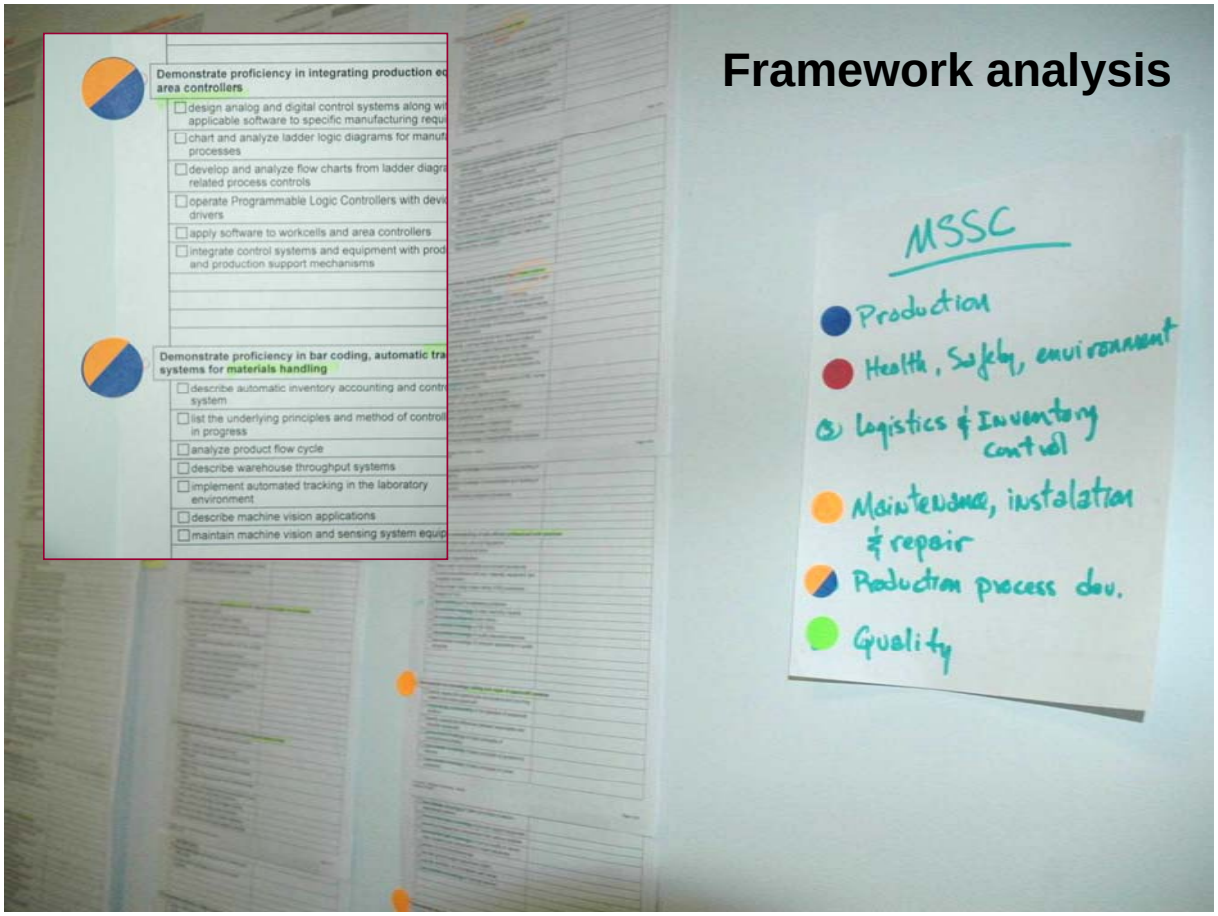


- Determine relevant industry certifications aligned with
  - stakeholder data
  - post-secondary academic programs
  - state's targeted occupation list



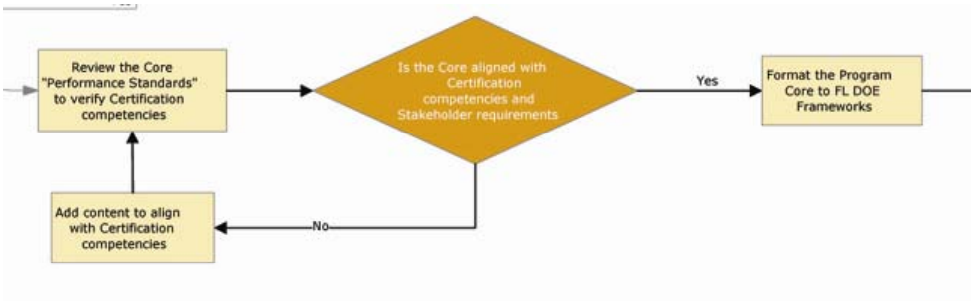
- Map stakeholders' feedback into the identified certifications
- Determine the most relevant industry certification
- Draft a degree core

By selecting an industry certification to inform and anchor the program core allowed for currency, precision, relevance, abundant required competencies, and possible articulation pathways.



MANUFACTURING SKILL STANDARDS COUNCIL
MSSC
Tools for Workforce Excellence

Manufacturing Skills Standards Council Portable Production Technician Certification



- Define the core framework and course options
  - These core courses are required of all the degree specializations

Completion of the common ET Core creates a portable completion point that allows students to transfer within the community college system to an institution with their desired specialization.

FORUM on Engineering Technology

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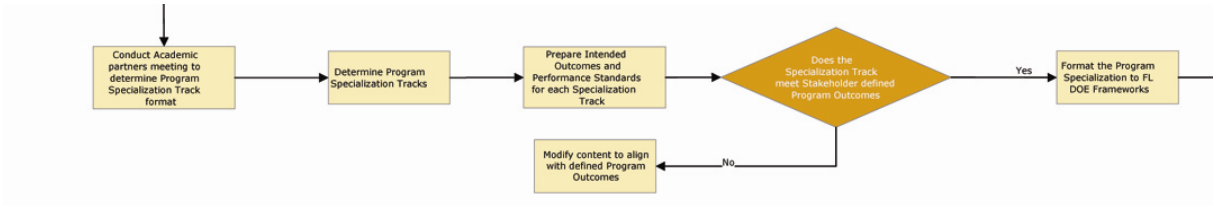
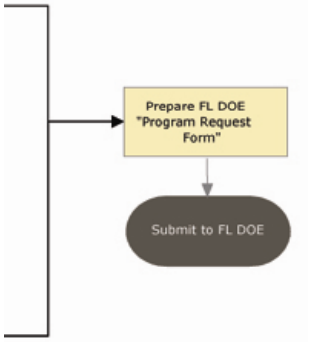


- Determine the specialization tracks
  - specializations needed to be different enough to warrant their own degree track, but common enough to fit under one unified degree

- Prepare the specialization tracks:
  - team members with the most expertise in those disciplines undertook the drafting of the specific frameworks and recommendation of the courses that could be used to meet them
  - each specialization track's framework were reviewed by the working group and then finalized



- Prepare the program for submission to DOE
  - The ET Core frameworks were joined with the specialization tracks' frameworks
  - The program was submitted to DOE

This multi-track format was new to the Department of Education

- The resulting degree in Engineering Technology is:
  - a statewide degree,
  - with a common technology core,
  - based on a national certification,
  - with five specialization tracks to meet local needs.

- Students have:
  - multiple entry and exit points,
  - the opportunity to earn college certificates aligned with the specializations,
  - earn an A.S. or A.A.S. degree in Engineering Technology with a specialization in their area of interest.

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