Composite Structural Engineering Safety Awareness Course Development

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Agenda

- Background
- Overview of education and training through FAA sponsorship and guidance
- Structural engineering course development process
- Hands-on laboratory
- Course format concept

Background

Extracted from Larry Ilcewicz slide presentation at CACRC (2010)

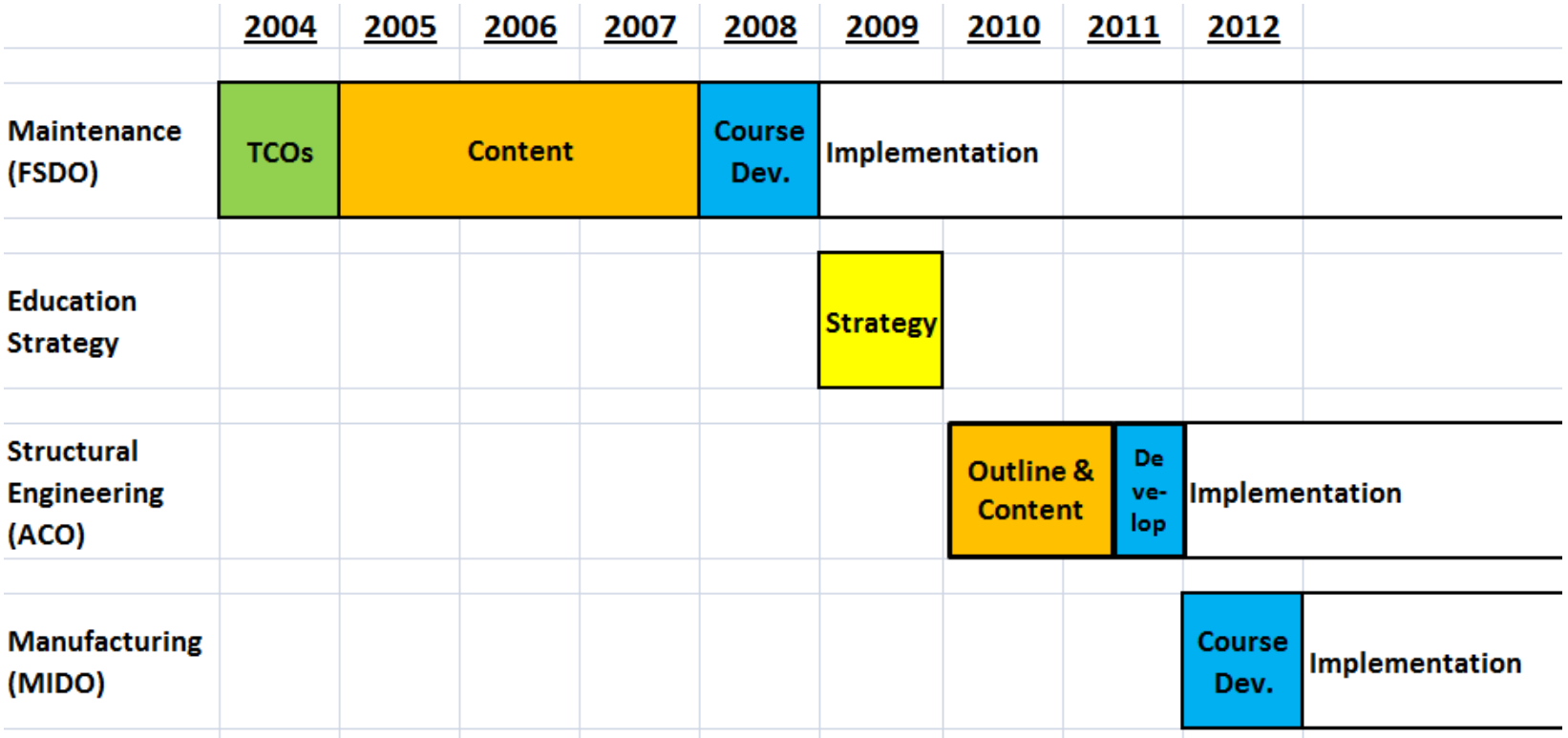
How Can FAA Reduce Composite Concerns?

- **Promote standardization**
- **Develop guidance that recognizes safety concerns with industry push to minimize costs**

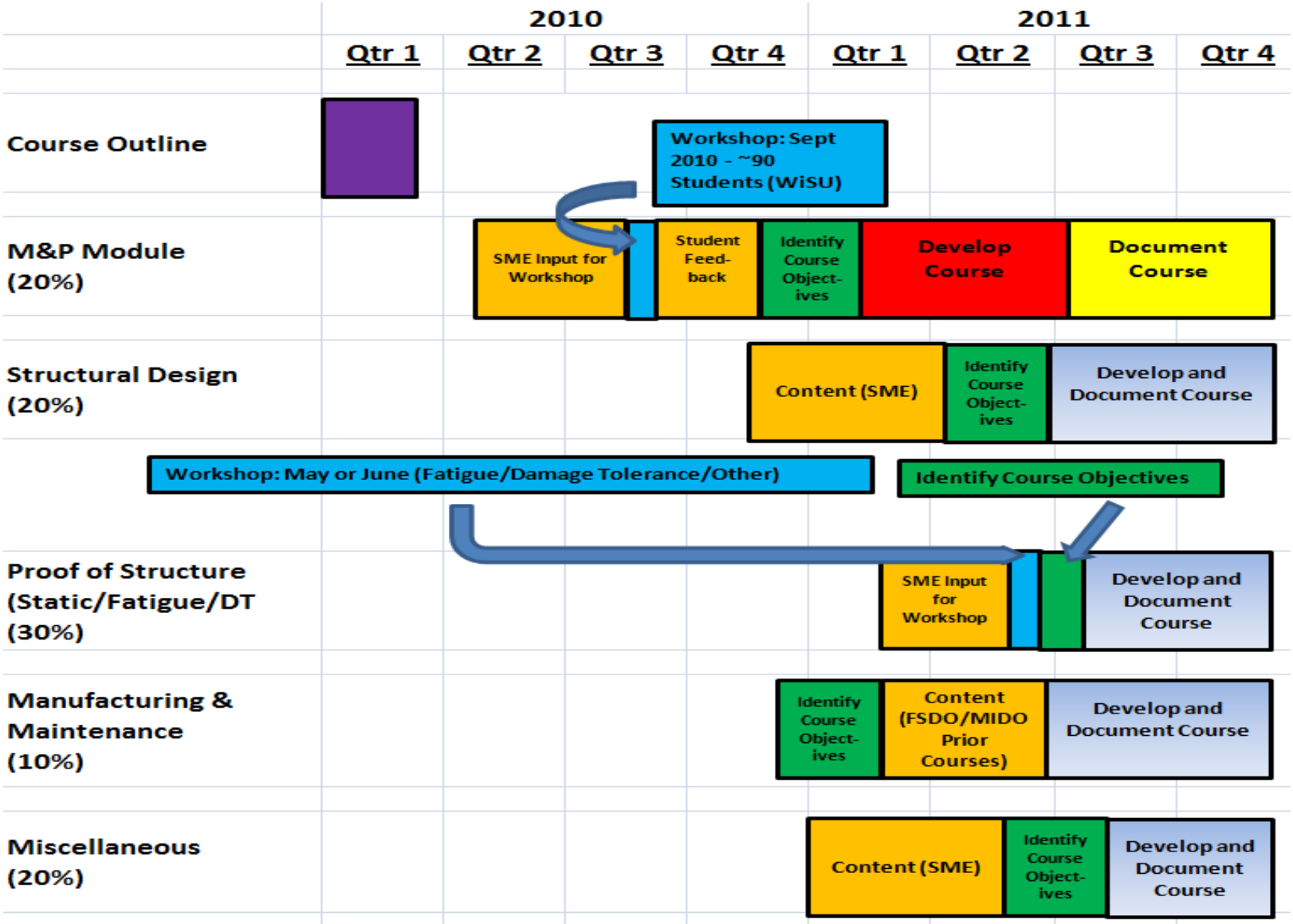
- **Establish safety awareness education for FAA Workforce (FSDO, ACO, MIDO, industry designees)**
- **Continue to benchmark the industry groups and members showing leadership for safe composite applications**
  - Standards organizations (CMH-17, CACRC, ASTM)
  - Applicants that portray leadership as "Model Citizens"
  - FAA/EASA/Industry Workshops

Presentations, recaps and breakout session summaries at:
http://www.niar.wichita.edu/niarworkshops/

Overview of FAA Education Development



Course Development Process



Laboratory

- Concept: 3-Day hands-on, following content
- Composites Technology
  - Build ‘take-home’ component (e.g. clipboard/wall plaque)
  - Exposure to manufacturing process (work instructions, layup, bagging, autoclave, machining)
- Composites Maintenance
  - Documentation (SRM)
  - Essential processes (Preparation (drying), Scarf/bolted repair techniques, hot bonder use)
  - NDT evaluation

Draft Format

- Online teaching format (Blackboard/eCollege/ FAA Proprietary (?))
- Contextual learning
  - Laboratory
  - Discussions/interactions among students and subject matter experts (asynchronous online)
  - Case studies

Transport Flap Case Study

250°F film adhesive well over 6" diameter

Incorrect film adhesive (SRM limits to 6 inches)

Burn marks on upper skin from overtemping during hot bond repairs.

Improper use/location of thermocouples resulted in overheating