

# INTEGRATED E-LEARNING MODULES

Strategies for Deployment and  
Development of Contextual Activities



University of  
New Haven

TAGLIATELA  
COLLEGE OF ENGINEERING

**KEEN**  
KERN ENTREPRENEURIAL  
ENGINEERING NETWORK

# Contents

- Recommended Integration Strategy
- Example Integration
- Content Import



# Recommended Integration Strategy

1) Deliver content via  
short  
**Online Module**

2) Engage students  
through  
**(Blackboard)  
Discussion**

**Integrated  
e-Learning  
Module**

3) Reinforce learning  
through a  
**Class Project**

4) Assess through  
**Project & Final  
Exam Question**



# Deployment Outline

---

**STEP 1.** Complete the integrated e-Learning module on your own

---

**STEP 2.** Develop your contextual activity.

---

**STEP 3.** Revise your course syllabus to include the finalized contextual activity and the learning outcome(s).

---

**STEP 4.** Deploy the e-Learning module

---

**STEP 5.** Implement the e-Learning module contextual activity in your course

---

**STEP 6.** Assess student work



| University of New Haven

---

TAGLIATELA COLLEGE OF ENGINEERING

# Deployment Outline

## STEP 2.

Develop your contextual activity



### **Recommendation:**

- **Use assessment outcomes listed in the assessment rubric to design your activity**



Week 9	Student in-class robotics project presentation, Project team meetings. <b>Students perform the DC Motor Control lab – second half (RPM motor calibration, RPM motor sub VI).</b> <b>Blackboard discussion on Learning from Failure Module (KEEN)</b>	
Week 10	Student in-class robotics project presentation, Overview of labs presentation, <b>Students perform the DC Motor Control lab (Create feedback controller).</b> <b>Learning from Failure KEEN Module due</b>	Prepare for portfolio evaluation. <b>Learning from Failure KEEN Module due</b>
Week 11	Student in-class robotics project presentation, Project team meetings.	Portfolio evaluation. DC Motor Control Report.
Week 12	<b>Final student in-class robotics project presentation, Set-up and run manufacturing floor activity, Disassemble robots and disassemble conveyor belts.</b>	Robotics Project
Week 13	Introduction to the control projects. Assign control project groups. Control Project team organizational meeting. Students begin working on control projects. <b>KEEN module – Annotate Learning from failure observations and include in Robotics Project Final Written Report</b>	

Sample Syllabus



EASC 1109 Fall 2016 Syllabus

Sample Syllabus

### Course Learning Outcomes

At the conclusion of this course, students should be able:

1. Demonstrate good time management skills.
2. Draw in 2D for technical communication (dimensioning, revision control, Excel Drawing-layouts, figures)
3. Use basic project planning and management techniques.
4. Work effectively in teams.
5. Demonstrate and apply effective oral communication principles (PITCH – technical presentations).
6. Interface and calibrate simple transducers with LabVIEW.
7. Implement feedback control of simple processes using LabVIEW.
8. **Develop a list of practical options to correct or avoid potential mistakes that may occur in specific projects. (KEEN Outcome)**
9. **Explain the potential risks of failure and proposed solutions in terms familiar to various stakeholders. (KEEN Outcome)**

### Course Requirements, Assessment and Administration

Students are evaluated based on (a) two major projects; (b) individual portfolios; (c) homework, quizzes (if

## STEP 3.

Revise your course syllabus to include the finalized contextual activity and the learning outcome(s).

# Deployment Outline

## STEP 4.

Deploy the e-Learning module



**Flipped classroom approach is recommended:**

- **Students review the module outside the class**
- **The contextual activity & the discussions are used to engage students with the material in class**



# Deployment Outline

## STEP 5.

Implement the e-Learning module contextual activity in your course



**Sample activities can be found in the Instructor Guide**





# Deployment Outline

## STEP 6.

Assess student work



### **Recommendation:**

- **Use the module assessment rubric**



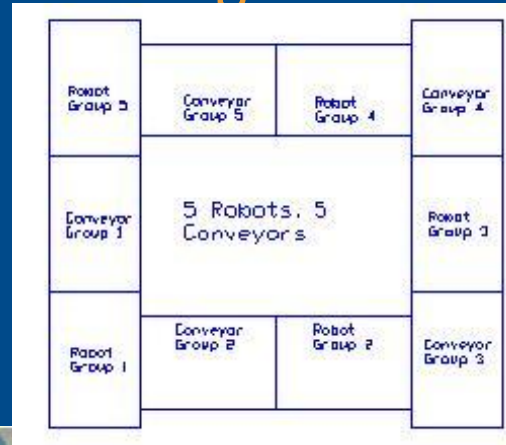
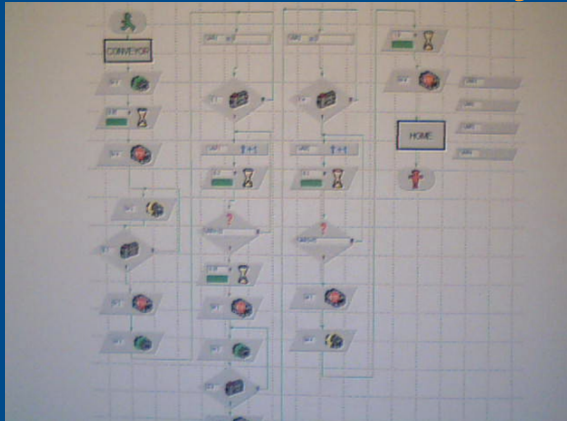
# Example Integration – Learning from Failure

- Integrated into EASC1109: Project Planning and Development

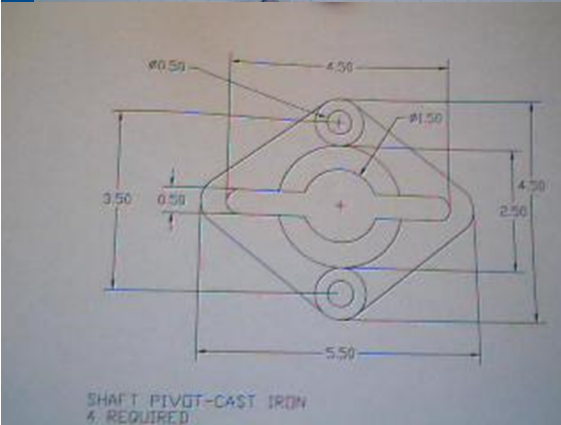
EML Outcomes		
Dimension	Target	Depth
CURIOSITY	Demonstrate constant curiosity about our changing world	Low
	Explore a contrarian view of accepted solution	Medium
CONNECTIONS	Integrate information from many sources to gain insight	Medium
	Assess and manage risk	High
CREATING VALUE	Identify unexpected opportunities to create extraordinary value	Low
	Persist through and learn from failure	High
EML Complementary Skills		
Dimension	Target	Depth
OPPORTUNITY	Identify an opportunity	
	Investigate the market	
	Create a preliminary business model	
	Evaluate technical feasibility, customer value, societal benefits, economic viability	High
	Test concepts quickly via customer engagement	
	Assess policy and regulatory issues	
IMPACT	Communicate an engineering solution in economic terms	
	Communicate an engineering solution in terms of societal benefits	Medium
	Validate market interest	
	Develop partnerships and build a team	High
	Identify supply chains distribution methods	
	Protect intellectual property	



# EASC1109: Project Planning and Development – Freshman Course



- Students develop the skills required to successfully plan and implement selected projects within budgetary and time constraints using project management software.
- Projects use LabVIEW© programming for data acquisition and control and CAD tools and presentation software for technical communication of design information.
- Students gain proficiency in each of these three areas as they apply to a series of projects spanning the course.
- Failures within the group and failures during assembly is expected.



University of New Haven

# Example Integration – Learning from Failure

- New course learning outcomes (to add to the course syllabus):
  1. Develop a list of practical options to correct or avoid potential mistakes that may occur in specific projects; and
  2. Explain the potential risks of failure and propose solutions in terms familiar to various stakeholders.

Deployment timetable	
Activity	Week
Online module completion	7-8
Blackboard discussion Questions	8-9
Contextual activity (class project)	8-12
Student Feedback Survey	14
Final assessment	16



# Example Integration – Learning from Failure

Discussion Questions: **posted on Blackboard (or other LMS)**

- Find and research a company/product on the brink of failure;
- Take the reins of the company/product and recommend a turnaround strategy.

## Execution

- Students are to:
  - Do an initial post
  - Review and comment on at least two other posts in the follow up discussion



University of New Haven

# Example Integration – Learning from Failure

Project: includes the two questions below which forms the contextual activity

- Q1: From the lessons learned in the Learning from Failure e-learning module, list what could have been done differently to avoid the mistakes that occurred while implementing this project.
- Q2: Discuss what potential risks of failure exist for a project like this if done in industry, and propose solutions to alleviate these risks in terms familiar to various stakeholders.

Execution

- As part of the project work, students submit individual short reports that addresses the questions listed above.
- Note: While the class project is team-based, the reflection papers are done individually



University of New Haven



# Content Import

- Common course cartridges available to import in your LMS
- For more information, please refer to Module Import Instructions document.





# For more information, contact us

- [KEEN@newhaven.edu](mailto:KEEN@newhaven.edu)
- [www.newhaven.edu/KEEN](http://www.newhaven.edu/KEEN)



| University of New Haven

TAGLIATELA COLLEGE OF ENGINEERING

Integrated e-Learning Modules