Engineering Faculty Forum
“Collaborative Learning”

Experience in Design Courses
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moving life forward
Engineering Faculty Forum
“Collaborative Learning”

Active Learning

Collaborative Learning

Experience-based Learning
Quality organization of lectures/seminars/labs

- Yellow page for ALE
- Note for location of ALE
- Markers for lecture length
- Markers for lecture end
ALE’s’ bottom line: excellent technique

**BUT**

- Works best for engineering science classes
- Not easy to implement
- Expect difficulties during start-up
- Don’t use ALE’s spontaneously
- Takes time to find “good” ALE’s
- Develop many, drop bad ones, add new
ALE’s - what to expect from students:

• Initially: awkward silence / bewilderment
• Must feel genuine and natural
• Needs techniques to engage students
  - mingle with crowd
  - call students by name
  - remembering previous answers
  - include “fun-facts”
Mechanical Engineering Design Courses

- MECE 260 – Intro to engineering design
- MECE 360 – Advanced design concepts (codes & standards, engineering analysis)
- MECE 460 – Capstone project
Common to All MECE X60 Courses

- Traditional lecture component, exams
- **Considerable project component ➔ Teamwork**
- Design teams with 4 or 5 students
- Project mark dominated by design reports
- Awards for top performing teams ($)

www.engineering.ualberta.ca/mece
Ensuring Positive Teamwork Experience

- **Professionalism**
  MECE 260: Learning styles, group dynamics, engineering ethics

- **Calibration of team goals and expectations**
Ensuring Positive Teamwork Experience

- **Guidance and mentoring by instructor**

  MECE 360, 460: frequent scheduled meetings with design teams, progress reporting
Ensuring Positive Teamwork Experience

- **Fairness** conflict resolution strategies, confidential team evaluation by all team members and effect on grading