APS1003 -- 2014
Professional Education and Instruction

This course is designed for people with an interest in continuing education and teaching in the engineering workplace. The course content is applicable to the development of courses, training programs, or the development of documentation such as instructions. Basic concepts in adult learning and current research in professional education will be introduced and discussed. Students will be required to develop teaching materials. By the end of the course, students should have an understanding of the important ideas that currently inform the practice of professional education and have experience applying these ideas to the development of instructional documents. Assignments are used to give students experience putting concepts into practice and producing effective teaching/learning materials.

The class will cover 8 broad topics. Topics include:

- Models and theory of adult learning
- Learning styles and situational factors
- Developing learning outcomes
- Assessment and teaching for transfer
- Design of learning experiences
- Instructional methods
- Feedback concepts and methods
- Basics of mentoring

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Meetings: May 5 to 16, 9:10am to 12:00

Assignments: APS1003 class sessions will be a combination of lectures and discussion. Students will be evaluated based on:

- Portfolio Plan
- Reflections: short written assignments
- Quiz: 1 quiz during the course
- Exam: at the end of the course
- Teaching Portfolio; due approximately a week after the last class session

Course Website:

Course materials will be posted on the portal website.

References

Print:

How People Learn, J.D. Bransford, A.L. Brown, and R.R. Cocking, ed.

Teaching at its Best, L. Nilson

The Adult Learner, M. Knowles, E.F. Holton III, and R.A. Swanson

Learning in Adulthood, S.B. Merriam, R.S. Caffarella, L.M. Baumgartner

Adult Education & Lifelong Learning, P. Jarvis

Planning Programs for Adult Learners, R.S. Caffarella

The Mentor's Guide, L.J. Zachary

On-Line:

Teaching Engineering by Wankat and Oreovicz: out of print but available on-line
access through:
https://engineering.purdue.edu/ChE/AboutUs/Publications/TeachingEng/index.html

Resources in Engineering and Science Education, Richard Felder's home page
http://www.ncsu.edu/felder-public

ERIC which is a library database of journals and publications that pertain to education.

Handouts:
Other readings will be distributed as handouts in class.

Course Objectives: Overall, by the end of this course you should be more aware of the concepts and literature on adult education and be able to apply these concepts to the design of learning experiences. More specifically, by the end of this course you should be able to

- Describe key concepts in adult learning and compare the major orientations.
- Apply adult learning theory to inform your teaching.
- Describe several learning style models and use the concept of learning styles to enhance the effectiveness your teaching and leadership.
- Develop and use learning objectives and outcomes effectively.
- Develop an effective assessment plan for both traditional and non-traditional teaching experiences.
- Use a multi-dimensional approach to the design of a learning experience which takes into account learner characteristics, content, assessment, and instructional alternatives.
- Demonstrate the effective design of a learning experience appropriate for an engineering workplace application.
- Use a conceptual understanding of instructional approaches to rationally choose a method for a particular purpose.
- Use a conceptual understanding of feedback and assessment to design effective tools for a particular situation and purpose.
- Describe and apply a variety of feedback techniques to provide effective feedback.
- Apply some basic tools in mentoring to form an effective mentoring relationship.
- Critique the design of a learning experience in terms of the concepts discussed in this course.
- Analyze a case or scenario based on the concepts discussed in this course.