

May 3, 2005

Memorandum For: Chair, Undergraduate Curriculum Committee

Through: Dr. Ashok Pandit, Head, Civil Engineering Department

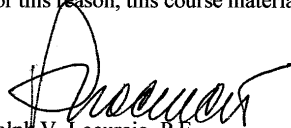


Subject: Addition of CVE 4074 – Leading Construction Operations to Undergraduate Curriculum

Request that the subject course, CVE 4074 – Leading Construction Operations be added to the undergraduate curriculum as a bi-level course with CVE 5074. The content of this course is designed to prepare engineering professionals for leadership tasks in the construction industry. An approved “Add a Course” form is attached hereto.

The rationale for this request is the determination of the Civil Engineering faculty that this course has great utility for graduating seniors as well as for graduate students. The course is taught at an introductory level for both graduate and undergraduate students. Consequently, the theoretical background of the course material is fairly basic and graduate school background is, therefore, not necessary for successful completion of the course. In addition, the mix of graduate and undergraduate students adds richness and depth to the class discussions and exercises without compromising quality.

Based on trends in the construction industry, guidance from ABET accreditation Boards, and as fortified by feedback received from the Florida Tech Construction Industry Advisory Board (CIAB), there is a growing need for increased proficiency in team building, communication and leadership skills for civil engineering graduates immediately upon graduation as well as following completion of a masters degree. For this reason, this course material is an important addition to the undergraduate curriculum.



Ralph V. Locurcio, P.E.
Professor, Department of Civil Engineering
Director, Construction Management Program

This course is available for student registration only after the approval process has been completed.

Subject CVE Course No. 4074 Credit Hours 3 Term to be added to the file Fall 2005
Alpha Prefix (e.g., CSE) Number Choice (e.g., 1301) (e.g., Fall 2003)

Class Hours 3 Lecture Hours 3 Lab Hours 0 Contact Hours (CEU only) _____

Department Civil Engineering Schedule Type Lecture/Discussion
(e.g., Computer Sciences) (e.g., lecture, lab or special project)

College/School College of Engineering-01 School of Aeronautics-03 SEGS-90
(Please check appropriate box) College of Science and Liberal Arts (science)-20 School of Management-22
 College of Science and Liberal Arts (liberal arts)-21 School of Psychology-05

Computer Title (restricted to 25 spaces, including blanks) Leading Construction Operations

Catalog Title Leading Construction Operations

Catalog Description of Course (limited to 350 characters, including spaces)

Specialized application of leadership fundamentals and team building to construction operations. Focus is on the basic principles of leadership including motivation, organizational dynamics, team formation, and conflict resolution. Examines construction operations, work practices and ethics in the business environment. Prerequisites: CVE4070

In addition, you may attach a course syllabus and/or more detailed description.

Restrictions Prerequisite CVE 4070 Corequisite _____ Grades to be issued
(course number) (course number) A, B, C, D, F
 Prerequisite _____ Corequisite _____ S, U
(course number) (course number) P, F
 Prerequisite _____ Corequisite _____ Other _____
(course number) (course number)

Additional Restriction _____
(e.g., major, class level, department head approval)

If this course replaces a course currently offered in BANNER, please indicate old course information

Subject CVE Course No. 4074
Alpha Prefix (e.g., CSE) (e.g., 1301)

APPROVALS

Upon completion of appropriate department approvals, submit form to Chair, Graduate Council, or Chair, Undergraduate Curriculum Committee for approval below and forward to Catalog Coordinator.

Originator [Signature] Date 4/28/05 Chair, Graduate Council Date _____
 Department Head/Program Chair [Signature] Date 5/13/05 OR
 Dean or Associate Dean [Signature] Date 5-3-05 Chair, Undergraduate Curriculum Committee Date _____

CATALOG COORDINATOR

REGISTRAR'S USE ONLY

Catalog Coordinator _____ Date _____ SCACRSE _____ SCADETL _____ SCAPREQ _____ SCABASE _____
 SCARRES _____ Operator Init _____ Date _____

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**General Syllabus
For
CVE 4074: Leading Construction Operations
Department of Civil Engineering, Florida Tech**

Credits: 3

Number of Class Sessions: 30

Instructor / Contact Information

Professor Ralph V. Locurcio, P.E.
Tel: 321-674-8048
Email: locurcio@fit.edu

Text (T) and References (R):

- (T) The Practice of Construction Management by Barry Fryer (fourth edition)
- (R) Construction Project Administration & by Edward R. Fisk (seventh edition)
- (R) Project Management, Kerzner, Van Nostrand Reinhold (Eighth Edition)

Other Materials

- In-class handouts & exercises
- Current topics and events related to the course material (handouts)
- Student research
- Videos

Approach:

- Successful leadership of construction operations requires a basic understanding of leadership principles with specific application to the unique environment of construction operations.
- Emphasis is on interactive class participation, exercises, personal analysis and student projects.
- Class exercises, reading, projects, and discussion will be customized to meet course objectives.
- Emphasis is on application of leadership principles and text material to actual real-world practice.

Area of Focus:

- Principles of leadership as distinct from management.
- Understanding of individual and professional personality and its application to leadership.
- Group behavior and organizational dynamics as related to construction operations.
- Team building in relation to construction practice.
- Development of a “personal leadership style” for application upon graduation.
- Development of communication skills with oral presentations and writing projects.
- Role of professionalism and ethics in relation to construction leadership.

Homework and Exams:

- Weekly reading assignments from text and from in-class handouts, exercises and projects.
- Individual research and presentations on topics related to class subject matter.
- Book report and oral presentation.
- Written final paper and presentation on “My Personal Leadership Style”

Chronology:

- Course will progress from coverage of individual to organizational leadership to team building.
- Students will analyze construction operations in comparison to other work environments.
- Emphasis will be on personal leadership and team building style.
- Example chronology attached.

Expectations of instructor:

Students should actively participate in classroom instruction to learn, and demonstrate an understanding of the following basic requirements for leadership of construction operations.

- The principles of individual leadership.
- The role of personality in leadership style and group dynamics.
- The characteristics of professionals and workers in the construction industry.
- The fundamentals of group behavior and organizational dynamics.
- The difference between leadership and management.
- The dynamics of team behavior and leadership of teams.
- The management and leadership of change in construction organizations.
- Professional ethics as applied to construction situations.
- Development of a “personal leadership style” for application to construction practice.

Admin Notes:

- Grading:** There are no written examinations in this course
3 Presentations (300pts) – due Periods 8, 17 & 28
Book Report (200pts) – due Period 18
Grading Student Presentations (100pts) – Periods 17 & 28
Final Paper (300pts) – due Period 28
Leadership Notebook (100pts) – due Period 29
Homework/Projects/Attendance (150pts)
Other assignments (50pts-course point total will be adjusted accordingly)
Total (1150pts + other assignments)
Grades will be based on a percentage of total course points for all work.
A=90% or above, B=80% or above, C=70% or above, D=60% or above
Class Attendance mandatory; unexcused absence will result in 10% point reduction
- Homework:** Will be assigned periodically. Effort on homework should reflect the grade you expect to receive in terms of accuracy and quality. Assignments must be handed in at class on due date; late work will not be accepted. Work must be completed in a professional, business-like manner; be sure your name and course number are clearly written on top right of page; written work should be done on a word processor; drawings or calculations should be on quad ruled paper.
- Notebook:** Keep all of your class notes, graded work, class handouts and homework in a loose-leaf “Leadership Notebook” which you can keep and expand as you progress in your career. The notebook will be graded.
- Other:** Notes:
1. See me during office hours if you need help (ext: 7149, email: locurcio@fit.edu)
 2. Bring your work with you when come to see me for help.
 3. Attendance is mandatory; see me before if you miss a class
 4. The above are minimum stated requirements for the class. Failure to use best efforts in performing these requirements, individually and in conjunction with team assignments, will be reflected in the final grading.

Department of Civil Engineering
Florida Institute of Technology

Syllabus CVE 4074 (Fall 2005)
Leading Construction Operations

Instructor: Prof. Ralph V. Locurcio, P.E.

PART I – Personal Leadership

Class 1: Introduction – Absolutes of Leadership I

Handouts

1. Introduction – 30 min
 - a. Course Purpose and Approach
 - b. Course Admin, Grading and Assignments
 - c. Assign 5 Min. Student Presentation due Period 4, “Your Personal Leadership Style”
 - d. Assign Book Report due Period 8 & Presentation due Periods 9 & 10
 - e. Syllabus handout & discussion of course requirements & presentations
 - f. Student questions.
2. Lecture on Absolutes of Leadership I

Class 2: Leadership Fundamentals

Fryer Chapter 2

1. Absolutes of Leadership II
2. An overview of essential leadership traits
3. Analysis of famous leaders and their traits
4. Assignment of Myers-Briggs Test

Homework Exercise: Complete Meyers-Briggs Type Indicator Test for period #2

Go to: www.humanmetrics.com

This is the home page for HUMANMETRICS.

In the blue “Take a Test” box on the left, click on “Jung Typology Test” Scroll down to the bottom of the Test Description and click the “Do It” box. This will lead you to an online test with 72 questions. When completed click on “Score It”, print the page with the four letter designator for your personality type and bring it to class for discussion. Also click on the buttons for the Kiersey and Butt descriptions of your personality type. Print these out and bring these to class.

You may also want to browse the site for other applications of personality type designations.

However, we will discuss this at length in Class 3.

Class 3: Personal Leadership

Fryer Chapter 7 (111-122)

1. Leadership starts with you – knowing who you are
2. Role of Personality in Personal Leadership
3. Understanding Personality Types
4. Myers-Briggs Personality Type Indicator
5. Understanding “your” preferred personality type
6. Discussion of individual personality profiles
7. Using personality in your work
8. **Assign student homework (50pts):**
Research project – “Characteristics of engineers-describe the engineer worker”
One page paper; turn in at period 4. Students will be asked to make a brief presentation of their findings in Period 4.

Class 4: Leadership I – Understanding the Basics

Fryer Chapter 4

1. The Engineer as an individual - what makes engineers tick?
2. Is there an Engineer Profile or Stereotype?
3. Is there a Construction Profile or Stereotype
4. Are there differences between design engineers and construction engineers?

Class 5: Communications

Fryer Chapter 5

1. Communication as an essential leadership tool
2. The communications process
3. Why communication fails
4. Developing good communication skills

Class 6: Motivation

Fryer Chapter 8

1. The essence of motivation
2. Motivation and human needs – Mazlow’s Hierarchy of Needs
3. Relationship to leadership and management style
4. Exercise in “What Motivates Engineers”
5. The leader’s role in motivating workers

Class 7: Leadership Styles

Handout-Blanchard, et al

1. Basic Leadership Styles
 - Theory X or Theory Y
 - Authoritarian vs. Laissez Faire
 - Dominant vs. Participatory
2. Situational Leadership

Class 8: Student Presentations I – “My Personal Leadership Style”

1. Students 1-10 make presentations on their leadership style
2. Each student makes a 5 min oral presentation
3. No visual aides; 3x5 card allowed
4. Timing, content and clarity of delivery are grading factors
5. **Value: 100pts toward final grade**
6. (50pts) Students grade presentations & prepare a one page summary of good & bad points.

Class 9: Student Presentations II – “My Personal Leadership Style”

1. Students 11-20 make presentations on their leadership style
2. **Value: 100pts toward final grade**
3. (50pts) Students grade presentations & prepare a one page summary of good & bad points.

PART II – Leadership in Organizations

Class 10: Working in Groups

Fryer Chapter 1

Fryer Chapter 7

1. Organization theory & group behavior
2. History & theory of group behavioral studies
3. Management vs. Leadership

Class 11: The Structure of Construction Organizations

Fryer Chapter 3

1. Types of organizations: hierarchical, functional, matrix
2. Organizational dynamics
3. Development of departmental teams
4. Pros & cons of team development
5. Barriers to collaboration in organizations
6. Structure of construction organizations

Class 12: Leadership in structured organizations

Fryer Chapter 2

1. Authority and Responsibility
2. Empowerment and worker satisfaction
3. Leadership styles for differing purposes
4. Policies and Procedures
5. Communications in formal organizations
6. Informal Leadership - Who's the real leader?

Class 13: Delegation and Direction

Fryer Chapter 9

1. Nature of direction
2. What is an order or directive
3. Characteristics of good directives
4. Directives used in construction practice

Class 14: Organization and Culture

Fryer Chapter 3

1. What is organizational culture?
2. The engineering culture... is there one?
3. Culture in a construction organization... does it differ from engineering?
4. Other professional cultures: legal, environmental
5. How culture effects work performance
6. How a leader uses culture accomplish a task

Class 15: Strategic Planning

Handout

1. Planning - Purpose, Scope and Process
2. Vision - Goals - Objectives - Tactics - Budget - Strategic Planning
3. Why plan - How to plan - Results - Value of Planning
4. Contingency Plans and other essentials
5. Changing the plan
6. Planning in construction operations
7. Good leaders clearly set the vision & communicate a plan

Class 16: Managing Change - Dynamic leadership

Fryer Chapter 10

1. Recognizing the need for change
2. Stimulating creativity and innovation
3. Communicating change
4. Training for change
5. Motivation and rewards
6. Organizational consequences- disruption, timing, rumors
7. Good leaders must master the ability to change.
8. **Book report due.**

Class 17: Student Presentations I – Book Reports

1. **Students submit written book report on leadership book (3-5pages)**
Value 200 points toward final grade.
 - a. Students 1-10 prepare and present 5min oral report on the contents of their book
 - b. Content emphasizes key points on leadership they learned from the book
 - c. Relate key points to leading engineers and course content
 - d. Visual aides allowed; power point or other graphics
 - e. Timing, content and clarity of delivery are grading factors
 - f. **Value: 100pts toward final grade**
2. **(50pts)** Students grade presentations & prepare a one page summary of good & bad points.

Class 18: Student Presentations II – Book Reports

1. Students 11-20 prepare and present 5min oral report on the contents of their book
2. **(50pts)** Students grade presentations & prepare a one page summary of good & bad points.

PART III – Construction Teams

Class 19: Team Building I

Handout

1. Understanding professional differences
2. Cultural development of professionals
3. Training, education, values
4. Goals, personal and professional

Class 20: Team Building II

Fryer Chapter 7 (123-132)

1. Elements of team building
2. Dynamics of team performance
3. Personality types and team structure
4. Characteristics of a hi-performance team
5. Team building exercise

Class 21: The Project Team

Handout

1. The composition of construction teams
2. The General Contractor's team
3. Sub-Contractors' teams
4. The Owner's team
5. Forging a "Project Team" culture

Class 22: Conflict Management

Fryer Chapter 6

1. Sources of conflict in construction operations
2. Dynamics of conflict, it's effect on performance
3. Functional and dysfunctional conflict
4. Formal and informal conflict
5. Disputes in construction
6. Resolution of disputes and conflict

Class 23: Group Exercise in Team Building

Handout

1. Students participate in classroom exercise
2. Students observe disaster scenario – make individual decision on rescue plan
3. Students form teams, select leader, make team decisions decision on rescue plan
4. Critique of team solutions vs. individual solutions

Class 24: Managing Risk in Construction Projects

Fryer Chapter 11

1. Nature of Risk
2. Risk and motivation; the reluctance to assume risk
3. Value management
4. Collaboration & enhanced team dynamics
5. Strategies and methods for sharing risk

Class 25: Partnering and Partnerships in Construction

Fryer Chapter 13

1. Partnering defined
2. Objectives of partnering
3. The process of partnering, a typical agenda
4. Agreements reached through partnering
5. Measurement and follow-up in partnering agreements
6. Student exercise in partnering

Class 26: Managing Quality in Construction Operations

Fryer Chapter 18

1. What is quality management
2. The nature of quality operations
3. Value of quality: perceived vs. real
4. Responsibility for quality in construction operations
5. Quality management systems
6. Motivating the team to excel in quality

Class 27: Ethics in Construction Operations

Handout

1. Values and Standards
2. Ethics & Integrity and Leadership
3. Leading from the Front – the Leader sets the tone
4. Ethics in Construction Operations
5. Situations which stress ethical standards in construction
6. Walking the talk – leadership under ethical stress
7. Basis and Value of Trust
8. Student exercise in Business Ethics

PART IV – Putting It All Together

Class 28: Student Presentations I

1. **Students submit written paper on “My Leadership Style Going Forward” (10pages)
Value 300 points toward final grade.**
2. Students 1-10 prepare and present 5-10min oral presentation on their paper
 - a. Content emphasizes key points on leadership they learned from the class
 - b. Relate key points to leading engineers and your personal style going forward
 - c. May use Power Point or other appropriate visual aides
 - d. Timing, content and clarity of delivery are grading factors
 - e. **Value: 100pts toward final grade**

Class 29: Presentations II

1. Students 11-20 complete 5-10min oral presentations on their papers
Value: 100pts toward final grade
2. **Turn in “Leadership Notebook” for grading**

Class 30: Course Conclusion

1. Course wrap-up
 - a. Application of course material to real world situations
 - b. Discussion of specific changes in the technology of engineering
 - c. Discussion of changes in the engineer, his training and make-up
 - d. Discussion of the client, his needs and demands
2. Course evaluation