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| ALL SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION                  | N TO THE GOVERNANCE OFFICE |  |  |  |  |  |
|--|----------------------------|--|--|--|--|--|
|  | Date                       |  |  |  |  |  |
| Signature, Chair, UAF Faculty Senate Curriculum<br>Review Committee  |                            |  |  |  |  |  |
| ADDITIONAL SIGNATURES: (As needed for cross-listing and/or stacking) |                            |  |  |  |  |  |
|  | Date                       |  |  |  |  |  |
| Signature, Chair,  |                            |  |  |  |  |  |
| Program/Department of:   |                            |  |  |  |  |  |
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|  | Date                       |  |  |  |  |  |
| Signature, Chair, College/School                                     |                            |  |  |  |  |  |
| Curriculum Council for:  |                            |  |  |  |  |  |
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|  | Date                       |  |  |  |  |  |
| Signature, Dean, College/School                                      |                            |  |  |  |  |  |

of:

## **Syllabus**

Prerequisites: None. Recommended: College degree in engineering or science or any college degree with construction experience

Meets Monday and Wednesday in the UAF Center for Distance Education conference room, corner of University and Davis Rd., and a remote location, 3PM to 5:15 PM, January 21 to February 9.

Instructor: Dr. Robert Perkins, PE, 253 Duckering, 474 7694, <a href="mailto:ffrap@uaf.edu">ffrap@uaf.edu</a>, Office Hours 9:30 to 12, Tues and Thurs or by appointment.

Course material is available on:

http://www.faculty.uaf.edu/ffrap/CM%20Course%20Info/CM%20Index.html

There is no required textbook. Two documents from the web should be downloaded to your computer and/or printed:

Goals, Description, and Schedule

Goal: Students will develop a basic understanding of risk in project management practice with applications to construction management. They will be able to write a project risk management plan and apply some risk principles to estimates using Excel and Crystal Ball.

Course outline

Classes 1, Wednesday, January 21, 2009

Introduction

Decisions, Certainty, Uncertainty, and Risk.

Risk and Projects

Qualitative Risk Analysis

Class 2, Monday, January 26

Construction

Construction and Risks

Estimating and Risks

Work Breakdown Structure

Class 3, Wednesday, January 28

Quantitative Risk Analysis

**Probability Basics** 

Excel

Simulation with Crystal Ball

Class 4, Monday, February 2

Guest lecture, Bonding and Insurance

Risk Assessment

Planning, Identification and Assessment

FHWA, CalTrans, NCHRP, PMBOK

Class 5, Wednesday, February 4

Risk Management

Monitoring and Response

Public
Applications to Projects - Changes
Contractors Risks
Bid
Changes
Owners Risks

Class 6, Wednesday, February 9 Presentations

## **Project**

Develop a risk management plan for a (hypothetical) small project from the owners and the contractor's perspective. Develop cost and schedule estimates with statements of probability. Note other risks.

Cast an estimate in terms of risk and defend the final result.

Instructional methods: Lecture in class or by video conferencing.

References. These are also on the class web site

1. Guide to Risk Assessment and Allocation for Highway Construction Management, US DOT,