ICM 6762:

International Construction Risk Management

START HERE:

Read and familiarize yourself with all the information in the syllabus below, then work through the modules in order.

INSTRUCTOR:

Dr. Ian Flood, room RNK 319, Rinker School, College of Design, Construction and Planning, University of Florida, Gainesville, FL 32601, USA. Email: flood@ufl.edu

SCHEDULE AND OFFICE HOURS:

To schedule a teleconference please first check my schedule, or you can make an appointment (flood@ufl.edu).

PREREQUISITES:

None.

SUBJECT:

Determining the most appropriate decision to make in construction project management, when there are many alternative choices available, using formal methods of analysis.

OBJECTIVES:

The course is designed to teach the student the principles of Decision Analysis, and how to apply these methods to make appropriate decisions in Project Management, in terms of time, cost, and quality, for example. The approach is applicable where there are many alternative decisions available to a manager, which is most often the case, and where there is uncertainty about the project under consideration. At all times, the practicality of applying the methods in a working construction environment is maintained.

An underlying understanding of the decision making process is first developed. This includes understanding key concepts such as, risk, uncertainty, utility, objectives, and multiple criteria decisions. This is followed by an introduction to the main tools used in Decision Analysis, (including, Decision Trees, and Monte Carlo analysis), and their potential for application in management. All methods are illustrated with practical examples.

Following this, a detailed understanding of modeling techniques as applied to Decision Analysis, is provided. This includes both an understanding of the different types of model, how they can be used to represent different types of systems, and how they can be used to develop an understanding of those systems with the objective of improving their design.

The course finishes with a look at some recent developments in Decision Analysis, such as the application of Artificial Intelligence in Project Management decision-making.

COURSE CONTENT:

The course material (including lecture notes, presentations, interactive media and assignments) should be followed in the order presented.

Exam Assignment: Available on request once all preceding modules have been substantially completed.

REFERENCES:

This course strictly follows the required text, and it is therefore compulsory that you obtain a copy of that book. Supplementary information to the course text, such as journal articles, spreadsheets, and handouts, are either referenced or provided, at the relevant section of the course. The course text required for this course is:

- **Risk and Decision Analysis in Projects, *by John Schuyler*, published by The Project Management Institute, Second edition, 2001**

Other texts that you may refer to are:

- Identifying and Managing Project Risk: Essential Tools for Failure-Proofing Your Project, *by Tom Kendrick,* published by AMACOM, 3rd Edition, 2016.

- Decision and Risk Analysis for Construction Management, *by Melvin W Lifson, and Edward F Shaifer Jr.,* published by John Wiley and Sons, 1982.

- Civil Engineering Systems Analysis and Decision, *by Alan A Smith, Ernest Hinton, and Roland W Lewis,* published by John Wiley and Sons, 1983.

INSTRUCTIONS ON SUBMITTING ASSIGNMENTS:

Online submission of assignments requires files to be in either MS Word, Excel or PDF format - each assignment identifies the file type(s) that it permits. All answers to an assignment must be put in the correct order with the question clearly identified. Combining parts of a question into one file (where needed) can be achieved in several ways: (a) in MS Word you can type-in answers, draw pictures, and cut&paste or import images and other objects; (b) Windows provides an easy to use Snipping Tool that allows you to gather images from any part of the screen and then paste them into the file to be submitted; and (c) you can use a scanner to create a single PDF file for submission.

GRADING:

Assignment 1 to 12 (7.5% each)	90%
Exam Assignment 1	10%
Total	100%

Letter Grade	% Grade
A	>= 93.3
A-	>= 90
B+	>= 86.7
B	>= 83.3
B-	>= 80
C+	>= 76.7
C	>= 73.3
C-	>= 70
D+	>= 67.7
D	>= 63.3
D-	>= 60
E	< 60

SOFTWARE AND HARDWARE REQUIREMENTS:

This course requires extensive use of *The DecisionTools Suite* by Palisade, which is an add-on to MS Excel. The student version is sufficient for this course and is currently available for a 1 year license for $50 at the following link:

http://www.palisade.com/cart/products_EN.asp?cat=51&panel=0

Other requirements for running this software (Excel versions, operating systems, and hardware) are also presented at this link. If you have difficulty accessing this link please inform the instructor, Dr. Ian Flood (contact details above).