Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
Submit original form and attach a course syllabus.

1. This request is submitted by the Department of Industrial and Systems Engineering

2. Course prefix, number and complete title of course: ISEN 644. Project Risk Management

3. Course description (not to exceed 50 words): Identifies causes of risks in projects; discusses probabilistic description of risks and formulation of risk models; Bayesian methods for revising probabilities; qualitative and quantitative risk assessment; setting contingencies on budgets and schedules; risk mitigation and risk management; handling technological risk; Utility theory and game theory in management of risks.

4. Prerequisite(s): STAT 601 or equivalent; graduate status in Engineering, approval of instructor

Cross-listed with: CVEN 644

Cross-listed courses require the signature of both department heads.

5. Is this a variable credit course? □ Yes ☒ No

If yes, from ________ to ________

6. Is this a repeatable course? □ Yes ☒ No

If yes, this course may be taken ________ times.

Will this course be repeated within the same semester? □ Yes ☒ No

7. Has this course been taught as a 489/689? □ Yes ☒ No

If yes, how many times? ________

8. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S. Ph.D. in engineering)

   M.S., M.Eng., Ph.D. in Engineering

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

10. Prefix | Course # | Title (excluding punctuation)

| Lect. | Lab | SCH | CIP and Fund Code | Admin. Unit | Acad. Year | FICE Code |
| 0 | 3 | 0 | 0 | 0 | 1 | 4 | 0 | 8 | 0 | 1 | 0 | 0 | 0 | 6 | 1 | 5 | 2 | 2 | 0 | 9 | - | 1 | 0 | 0 | 0 | 3 | 6 | 3 | 2 |

Approval recommended by:

Head of Department: □ Anthony Calello 4/28/08

Chair, College Review Committee: □ N.K. Anand 4/17/08

Dean of College: □ Anthony Calello 4/17/08

Date

Submitted to Coordinating Board by:

Date

Associate Director, Curricular Services

Date

Effective Date

Questions regarding this form should be directed to Sandra Williams at 845-8201.
Curricular Services – 11/07

MAY 07 2008
N.K. ANAND
DEPARTMENT OF INDUSTRIAL AND SYSTEMS ENGINEERING

644 COURSE SYLLABUS

Number and Title of Course: ISEN 644 Project Risk Management

Hours: Lecture 3, Lab 0, Credits 3

Description of Course (Concise statement of purpose or design): Identifies causes of risks in projects; discusses probabilistic description of risks and formulation of risk models; Bayesian methods for revising probabilities; qualitative and quantitative risk assessment; setting contingencies on budgets and schedules; risk mitigation and risk management; handling technological risk; Utility theory and game theory in management of risks.

Learning Outcomes: Students should be able to model and evaluate risk, understand Bayesian methods as applied to risk assessment, and understand risk management.

Textbook: Lecture Notes by the instructor

Prerequisites: STAT 601 or equivalent; graduate status in Engineering, approval of instructor

Course Outline (preliminary - subject to change):

Week 1: Perceptions of risk: management vs decision theoretic
Week 2: Project economics; review of engineering economics, present worth analysis
Week 3: Correlations; Pareto Charts; estimating costs for public works
Week 4: Second Moment methods. Covariances. Risks for total project costs
Week 5: Probability concepts; Bayesian inference
Week 6: Risks under competition. Risk to the owner. Risks to the contractor
Week 7: Project dynamics: feedback loops, iteration, and rework in engineering
Week 8: Class presentations – term projects (preliminary)
Week 9: Mid-term exam
Week 10: Setting contingencies and management reserves. Revising estimates
Week 11: Developing and executing a project risk management plan
Week 12: Modeling uncertainty: Markov processes, Markov decision processes
Week 13: Class presentations – term projects (final)
Week 14: Tracking and controlling projects
Week 15: Review of material. Final Examination

Learning Outcomes: Students should have the ability to:

- Appreciate the impact of uncertainty on projects and project management.
- Identify sources of uncertainty and risks related to projects.
- Infer probability distributions and assess risks subjectively but quantitatively.
- Evaluate the effects of perceptions of risk on decisions by project participants.
- Prepare qualitative and quantitative risk assessments.
- Prepare and execute risk mitigation and management plans.
- Apply risk management principles to future project activities.

Grading:

Assignments – proficiency exercises 25%
Class participation and discussion 15%
Examinations 5%
Term project
  Oral presentation (preliminary) 5%
  Oral presentation (final) 10%
  Written presentation 30%
  Final Examination 10%
Course Instructor: Kenneth Reinschmidt
Telephone number: 845-8599
Office hours: 8-12 MWF
Email address: kreinschmidt@civil.tamu.edu
Office location: Room 702A CE/TTI Building

Americans with Disabilities Act (ADA) Policy Statement
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities in Cain Hall, Room B118, or call 845-1637.

Academic Integrity Statement
"Aggies do not lie, cheat, or steal, nor do they tolerate those who do." It is the responsibility of students and instructors to help maintain scholastic integrity at the university by refusing to participate in or tolerate scholastic dishonesty. (Please see the Honor Council Rules and Procedures at http://www.tamu.edu/aggiehonor)