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FEB 2 8 2012

COLLEGE OF GRADUATE STUDIES

The University Of Toledo

NEW COURSE PROPOSAL

Level (check one)	Will this course impact program requirements? ⬜ If yes, a Program Modification must be completed.
⬜ Undergraduate	
⊛ Graduate	

Type of course (check all that apply):

⬜ Academic Skills Enhancement ⬜ Writing Intensive (WAC) ⬜ honors

⬜ Univ. Core: *English   Hum   Math   Nat.Sciences   Social Sciences*

Multicultural: Diversity of US Culture   Non-US Culture

⬜ Transfer module: *Arts&Hum   Engl   Math   Nat Sci & Phys   Soc Sci*

(to be considered as core curriculum, question 18 must be completed)

1. College: ENG

   Department:

2. Contact Person: Wm. Ted Evans   Phone: 530-3349   Email: william.evans@utoledo.edu

3. Alpha/Numeric Code (Subject area - number): GNEN 6700

4. Proposed title:

   Management of Projects and Technological Innovation

   Proposed effective term:

5. Planned enrollment per section: 15   per term: 15

6. Is the course cross-listed with another academic unit? ☑ Yes ⬜ No

   Is the course offered at more than one level? ⬜ Yes ☑ No

   If yes to either question, please list additional Alpha/Numeric codes, and submit a separate New Course form or Course Modification form for the course(s) referenced below.

   a. CHEE - 6700   b.

   Approval of other academic unit (signature)   _K Lipscomb_

   Name and title   G. Lipscomb Prof.

   If course is to be offered at more than one level, attach an explanation of the different requirements that students must meet for each level. If the requirements are the same for each level, justification must be provided.

Administrative Use Only
Code:
Approved (senate or Grad Council)
Effective Date: ___ / ___ / ___ (mm/dd/yyyy)
CIP Code:
Sub: ___ Prog: ___ Level: ___

7. Credit hours: Fixed: 3   or Variable: ___ to ___

8. Delivery Mode:

	Primary	Secondary	Tertiary
a. Activity Type*	Other = DL	Lecture	
b. Minimum Credit Hours	3		
Maximum Credit Hours	3		
c. Weekly Contact Hours	3		

*Choices are: Lecture, Recitation, Seminar, Regular Lab, Open Lab, Studio, Clinic, Field, Independent Study, Workshop, Computer Assisted Instruction, Other

9. Terms offered: ⬜ Fall ☑ Spring ⬜ Summer

   Years offered: ⊛ Every Year   Alternate Years

10. Are students permitted to register for more than one section during a term? ⊛ No   Yes

    May the courses be repeated for credit? ⊛ No   Yes   Maximum Hours

FEB 16 2012

11. Grading System:

Undergraduate	Gradute
Normal Grading (A-F,PS/NC.PR, I)	⊛ Normal Grading (A-F,PS/NC.PR, I)
Passing Grade/No Credit (A-C, NC)	Grade Only (A-F)
Credit/No Credit	Satisfactory/Unsatisfactory (G only)

Grade Only (A-F, PR, I)   Audit only

Audit only   No Grade

· No Grade

12. Prerequisites (must be taken before): a. _____ - b. _____ - c. _____ -

                                           PIN (Permisson From Instructor)   PDP (Permission From Department)

    Co-requisites (must·be taken together): a. _____ - b. _____ - c. _____ -

13. If course is to replace an existing, course(s) will be deleted, and when should that deletion occur?

    Course to be removed from inventory ·   _Final Term to be offered   (YYYYT, i.e. use 20064 for Fall'06)_

    a. _____   _____   _____

    b. _____   _____   _____

    c. _____   _____   _____

    d. _____   _____   _____

14. Catalog description (30 words Maximum)

    Study of new Accelerated Radical Innovation discipline targeting 2X-10X improvement in innovation effectiveness, measured by reduced risk, time and cost. Assessment and modeling to speed development, transfer and profitable commercialization.

15. Attach a copy of a complete outline of the major topics covered. (Providing a syllabus that includes this information is acceptable.)

    Syllabus: See Attached   Click here to view the Syllabus

    Attachment 1   No Attachment

    Attachment 2   No Attachment ·

16. Where does this course fit in the University/College/Department curriculum? (Be specific by course level, if applicable). Indicate prospective demand.

    GNEN 6700 is a required course in the MSE program of study

17. If the proposed course is similar to another course in the College or University, please describe the difference and provide a rationale for the duplication. (If this course duplicates material covered in another course within your department or college or in another college, attach a letter of endorsement from that area's dean and department chairperson indicating their support. Clarify the maner in which this course will differ).

    This Course is applications based and, as such, does not duplicate another course.

18. If the course is intended to meet a University Undergraduate Core requirement, complete the following and submit a course syllabus using the _template_:

    Please explain how this course fulfills the general education guidelines. (_Guidelines_ are available in _Faculty Senate Website_)

<u>Course Approval:</u>

Department Curriculum Authority:	_William P Evans_	Date	2 / 9 / 2012 (mm/dd/yyyy)
Department Chairperson:		Date	__ / __ / __ (mm/dd/yyyy)
College Curriculum Authority:	_Patricia A. Relue_	Date	2 / 21 / 2012 (mm/dd/yyyy)
College Dean:	_Mohamed Samir_	Date	2 / 21 / 2012 (mm/dd/yyyy)

After college approval, submit the original signed form to the Faculty Senate (UH 3320) for undergraduate-level courses; for graduate-level courses submit the original signed form to the Graduate School (UH3240). For undergraduate/graduate dual-level courses, submit the proposals to each office.

Faculty Senate Undergrad. Curriculum Comm.:		Date / / (mm/dd/yyyy)
Faculty Senate Core Curriculum Comm :		Date / / (mm/dd/yyyy)
Graduate Council :		Date 3 / 20 / 2012 (mm/dd/yyyy)
Office of the Provost :		Date / / (mm/dd/yyyy)
Registrar's Office:		Date / / (mm/dd/yyyy)

1. **COURSE DESCRIPTION**

   MANAGEMENT OF PROJECTS AND TECHNOLOGICAL INNOVATION
   [3 hours] Theory and practice of management technology applied to project management, engineering project development and major technological innovation to address new business needs and opportunities. Topics covered include schedule, budgets, performance, technology assessment and management of time and costs.
   Prerequisite: Graduate standing

2. **COURSE INSTRUCTOR**

   Dr. John P. Dismukes
   Professor, Chemical and Environmental Engineering Department
   3064 Nitschke Hall, MS 305, The University of Toledo, Toledo, Ohio 43606-3390
   419-530-8065 (Tel.); 419-283-8780; John.Dismukes@utoledo.edu

3. **ELECTRONIC COURSE MATERIALS AND ASSIGNMENTS**
   Student will access course materials and graded item assignments by via the Distance Learning Link: www.dl.utoledo.edu and then the GNEN6700 Course, to obtain:
   - Student Welcome Letter, Instructor Background, Course Syllabus and Schedule
   - Weekly Viewgraphs, Reading Assignments and Discussion Assignments
   - Electronic Quizzes, MidTerm Exam and Final Exam via Blackboard
   - Interact via WebCT discussion and email functions and email or external email

   Additional communication as necessary to instructor
   - Via email to John.Dismukes@utoledo.edu
   - Via 419-530-8065 (leave message) or cell phone 419-283-8780 (per appointment)

4. **COURSE OBJECTIVES:**
   Over the past five decades, technological innovation has been the worldwide driver of industrial and societal competition. In the United States during that time it has contributed half of this Nation's economic growth. In the future, *effective management of technology* will be increasingly critical for success, in a 21st Century environment characterized by accelerating availability to information, communication and analysis.
   Evolution of technology, engineering and science, and the emergence of theory and practice for management of technological innovation up through the 20th Century are reviewed and analyzed. Guidelines, illustrations and case studies are presented related to managing technology and innovation in various industries. Student term paper projects will also be shared to provide real time case studies of managing technology in today's industrial environment.
   The course objective is to provide practicing engineers with the **strategic fundamentals and tactical tools** for effective understanding and use of technology in improving the productivity and success of their organizations in the 21st Century. Areas covered include the historical evolution of technology, science and engineering, and the following general topics:
   - **Technological Innovation and the Technological Innovation Process**
   - **Strategic Management of Technology (MOT)**
   - **Strategic Management with Information Technology**
   - **Tactical Management of Projects and Operations**
   - **R&D and Product and Process Development**
   - **Competitive Intelligence and Technology Forecasting**
   - **Technology Strategy and Business Strategy**
   - **Manufacturing, Enterprise Systems and Supply Chains**
   - **Environmental Sustainability Issues in Innovation**

5.   COURSE MATERIALS

Main Textbook

Each student must purchase the textbook by Betz (2nd edition) from the University of Toledo Bookstore, or from the Web (e.g. Amazon.com)

- Frederick Betz, "Managing Technological Innovation: Competitive Advantage From Change",
  2nd Edition, John Wiley & Sons, 25 Chapters, 471 Pages, ISBN#0-471-22563-0, New York, 2003.

6.
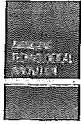
Managing Technological Innovation: Competitive Advantage from Change by Frederick Betz (**Hardcover** - Jul 3, 2003)

AMAON.COM: Buy new: ~~$125.00~~ **$106.25**   In Stock
Used & new from $49.94
Other Edition(s): Hardcover

Electronic Documents on GNEN6700 Blackboard Site

The WebCT site provides additional course materials as electronic documents:

- Weekly Powerpoint Presentations, Weekly Case Studies, Supplementary Innovation Readings, Syllabus, Schedule, and Innovation Project Assignment Guidelines

The Blackboard site also provides tools for use in executing the Assignments:

- Communication (email, discussion), Quizzes, MidTerm Exam, Final Exam, Innovation Term Project Assignment, Student Grades

6.   GRADED ASSIGNMENTS

Assignment	Grade Points	Time Due
Quizzes 1-10 (Multiple Choice Questions)	25 Total	Weeks 2-14
MidTerm Exam • Multiple Choice Questions • Discussion Questions	20 Total 5 15	Week 8
Innovation Term Project Assignment (Presentation & Report) • Title and 20 Word Description • Title and 800 Word Summary • Final Presentation (For Instructor Grade) • Student Rating of Current / Previous Presentations • Final Report (For Instructor Grade)	25 Total Communication MidTerm Exam 10 5 10	 Week 4 Week 8 Week 15 Week 15 Week 17
Final Exam • Multiple Choice Questions • Discussion Questions	20 Total 5 15	 Week 16 Week 16
Class Interaction By Student • Discussion Tool, Email, Phone, Evaluation Questionnnaire	10 Total	Weeks 1-17
TOTAL	100 Course Total	Week 18

7.   GRADING SCALE

A	A-	B+	B	B-	C	D	F
100-90	89-87	86-85	84-80	79-78	77-67	66-57	56-0

8.   SEMESTER SCHEDULE Spring 2011

Spring SEMESTER 2011 SCHEDULE

Class Number	Textbook Assignment	Description of Assignments	Source of Assignments
INTRODUCTION			
Week 1 Jan 10-16	Overview Course Introduction	Week 1 Viewgraphs Preface Case Study 1	Powerpoint File Pages ix-xii Price 1999
TECHNOLOGY IMPERATIVE: Why Innovation is a Competitive Force			
Week 2 Jan 17-23	Overview Chapter 1 Chapter 2 Quiz 1 (End of Week)	Week 2 Viewgraphs Technology in Society Science and Technology Infrastructure Case Study 2	Powerpoint File Pages 1-24 Pages 25-45 Merrifield 1999
Week 3 Jan 24-30	Overview Chapter 3 Chapter 4 Quiz 2 (End of Week)	Week 3 Viewgraphs Technology in Economy Technological Progress Case Study 3	Powerpoint File pp. 46-62 pp. 63-84 Barley 1998
Week 4 Jan 31 – Feb 6	Overview Chapter 7 Chapter 8 Quiz 3 (End of Week)	Week 4 Viewgraphs Industrial Research and Development Technology Forecasting Case Study 4	Powerpoint File pp. 85-98 pp. 99-118 Preez 1999
Week 5 Feb 7-13	Overview Chapter 13 Chapter 14 Chapter 15 Quiz 4 (End of Week)	Week 5 Viewgraphs Research Function Engineering Function Information Function Case Study 5	Powerpoint File pp. 223-240 pp. 241-262 pp. 263-281 Gerybadze 1999
Week 6 Feb 14-20	Overview Chapter 18 Chapter 19 Chapter 20 Quiz 5 (End of Week)	Week 6 Viewgraphs High-Tech Finance Technical Project Management Formulating Technology Strategy Case Study 6	Powerpoint File pp. 316-336 pp. 337-353 pp. 354-372 ProbertShe 1999
Week 7 Feb 21-27	Overview Chapter 9 Chapter 12 Quiz 6 (End of Week)	Week 7 Viewgraphs Industrial Dynamics Radical Innovation Case Study 7 Review Topics for Mid Term Exam	Powerpoint File pp. 157-170 pp. 204-222 Mitchell 1999
Week 8 Feb 28 - Mar 6	**Mid Term** **Take Home Exam** (Released Week 8 and Due Latest End Week 9)	Introduction, Preface, VG 1-7, Case Stud 1-7, Chs 1-4, 7-9, 12-15, 18-20 Outline of Term Paper Report For Instructor Review as Discussion Question 1, MidTerm Exam	Weeks 1-7 Term Paper Assignment
Week 9: Fall Mid Term Exam Study Week (March 7-13)			

Spring SEMESTER 2011 SCHEDULE (continued)

Class Number	Textbook Assignment	Description of Assignments	Source of Assignments
INNOVATION CAPABILITY: What A Business Needs To Be Innovative			
Week 10 Mar 14-20	Overview Chapter 5 Chapter 6	Week 10 Viewgraphs Product System Product Development Process Case Study 8 Term Paper Outlines Approved By Instructor	Powerpoint File Pages 85-98 Pages 99-118 Friar 1999 MidTerm Exam Question 1
Week 11 Mar 21-27	Overview Chapter 16 Chapter 17 Quiz 7 (End of Week)	Week 11 Viewgraphs High-Tech Production High-Tech Marketing Case Study 9	Powerpoint File Pages 282-299 Pages 300-315 Christensen 1999
Week 12 Mar 28 – Apr 3	Overview Chapter 21 Chapter 22 Chapter 23 Quiz 8 (End of Week)	Week 12 Viewgraphs Physical Technology Paradigm Biological Technology Paradigm Information Technology Paradigm Case Study 10	Powerpoint File Pages 316-336 Pages 337-353 Pages 354-372 ProbertFar 1999
TECHNOLOGY STRATEGY: How To Plan Innovation			
Week 13 Apr 4-10	Overview Chapter 10 Chapter 25 Quiz 9 (End of Week) **Student Submit Draft Term Paper Presentation**	Week 13 Viewgraphs New High-Tech Businesses Integrating Technology & Business Strategy Case Study 11 **Student Submit For Instructor Review**	Powerpoint File pp. 171-190 pp. 439-457 Angell1999 **Term Paper Assignment**
Week 14 Apr 11-17	Overview Chapter 11 Chapter 24 Quiz 10 (End of Week) **Student Submit Final Term Paper Presentation**	Week 14 Viewgraphs Technology and Ethics High-Tech Strategy **Instructor Post on WebCT for Student Review**	Powerpoint File pp. 191-203 pp. 422-438 **Term Paper Assignment**
Week 15 Apr 18-24	Final Term Paper Powerpoint Presentation Due End of Week	**Instructor Grading of Term Paper Student Review of 6 Presentations Due End of Week**	Term Paper Assignment Guidelines
Week 16 Apr 25 – May 1	Final Exam Due End of Week	**Weeks 10-14, VGS 10-14, Case Studies 8-11, Chapters 5-6,10-11,16-17, 21-25**	**Multiple Choice and Discussion Questions**
Week 17 May 2-7	Term Paper Report Due End of Week	**Instructor Review / Grade Term Paper Reports – As MSWord Document**	Term Paper Assignment Guidelines
Week 18: End of Semester -- Posting of Final Grades May 11			