

The University Of Toledo
NEW COURSE PROPOSAL

COLLEGE OF GRADUATE STUDIES
Will this course impact program requirements? If yes, a Program Modification must be completed.

Level (check one)
 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): GNEEN 6790

4. Proposed title:
Information Accelerated Radical 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 - 6790 b. A. Lynn

Approval of other academic unit (signature)

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.

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

8. Delivery Mode:	Primary	Secondary	Tertiary
a. Activity Type*	<u>Other - DL</u>	<u>Lecture</u>	_____
b. Minimum Credit Hours	<u>3</u>	_____	_____
Maximum Credit Hours	<u>3</u>	_____	_____
c. Weekly Contact Hours	<u>3</u>	_____	_____

*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 _____

11. Grading System: Undergraduate Graduate

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)

FEB 16 2012

Grade Only (A-F, PR, I)	Audit only
Audit only	No Grade
No Grade	

12. Prerequisites (must be taken before):

a.	GNEN - 6700	b.	-	c.	-
	PIN (Permission From Instructor)		PDP (Permission From Department)		

Co-requisites (must be taken together):

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

	<u>Course to be removed from inventory</u>	<u>Final Term to be offered (YYYYT, i.e. use 20064 for Fall'06)</u>
a.	-	-
b.	-	-
c.	-	-
d.	-	-

14. Catalog description (30 words Maximum)

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

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 6790 is an elective course in 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 manner 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)

Course Approval:

Department Curriculum Authority:

William P. Evans Date / / (mm/dd/yyyy)

Department Chairperson:

Date / / (mm/dd/yyyy)

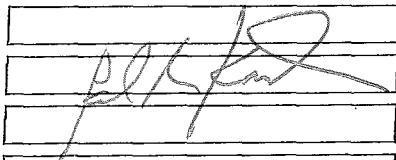
College Curriculum Authority:

Patricia A. Rhee Date / / (mm/dd/yyyy)

College Dean:

Mohamed Samir Date / / (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.:	<input type="text"/>	Date	<input type="text"/>	/	<input type="text"/>	/	<input type="text"/>	(mm/dd/yyyy)
Faculty Senate Core Curriculum Comm :	<input type="text"/>	Date	<input type="text"/>	/	<input type="text"/>	/	<input type="text"/>	(mm/dd/yyyy)
Graduate Council :		Date	3	/	20	/	2012	(mm/dd/yyyy)
Office of the Provost :	<input type="text"/>	Date	<input type="text"/>	/	<input type="text"/>	/	<input type="text"/>	(mm/dd/yyyy)
Registrar's Office:	<input type="text"/>	Date	<input type="text"/>	/	<input type="text"/>	/	<input type="text"/>	(mm/dd/yyyy)

Information Accelerated Radical Innovation
GNEEN 6790 COURSE SYLLABUS: Spring Semester 2012

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1. Instructor Contact, Course Structure, Communication

1.1. Instructor Contact

Dr. John P. Dismukes

Professor, Chemical and Environmental Engineering Department, College of Engineering
3064 Nitschke Hall, MS 305, The University of Toledo, Toledo, Ohio 43606-3390
419-530-8065 (W) or 419-283-8780 (Cell)
Email: johnpdismukes@gmail.com; (home); John.Dismukes@utoledo.edu (work)

1.2. GNEEN6790 Course Structure

Prerequisite:

GNEEN6700 (Management of Projects and Technological Innovation) or Instructor Permission

Delivery:

The course is available anytime, anywhere on The University of Toledo Distance Learning (DL) Site www.dl.utoledo.edu via the Blackboard BB9 Home Page, that posts all required course materials except textbooks (*see 3.1 below*). Students should access additional “electronic” and “written” materials available from the University of Toledo Carlson Library www.cl.utoledo.edu or other electronic sources.

Academic Guidelines:

The University of Toledo Honor Code for Students applies to all individual student assignments. However, communication with classmates is encouraged including outlines and final reports of the Accelerated Radical Innovation Project

1.3 Communication

Student(s) and Instructor communicate with each other via BB9 internal Email and Discussion tools, and via external email, phone, and scheduled office meetings. This includes team based interactions between students in selecting, structuring, assessing and reporting results of Term Projects per the course assignments. All written materials will be submitted electronically in the form of MSWord, Powerpoint, or AdobeAcrobat PDF documents.

2. Course Overview, Objectives and Topics

2.1 Course Overview

Study of new innovation approaches to achieve 2X-10X improvement in creating breakthrough innovations required for 21st Century competitiveness, emphasizing real time information assessment, roadmapping and knowledge management of the innovation process.

2.2 Course Objectives

The goal of this course is to provide graduate students and practicing engineers and managers with the opportunity to contribute improvements to the methodology and application of information to assess, explore and achieve Accelerated Radical Innovation (ARI). To accomplish this we will teach each other through communication, debate, and team oriented analysis and assessment, focusing on a major Potential Radical Innovation of recent interest by industry, government and academia: Algae Generated Biofuels!

Information Accelerated Radical Innovation
GNEN 6790 COURSE SYLLABUS: Spring Semester 2012

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Recent national and international studies support the conclusion that innovation methodologies for cost reduction and incremental improvement of existing technologies that proved successful in the late 20th Century will no longer be effective --- and may even be counterproductive for global competitiveness in today's world. In the increasingly flat 21st Century environment characterized by exponential growth of connectivity of data, information, communication and analysis, technological innovation will be an even more important worldwide driver of industrial and societal competitiveness.

Building on a prerequisite Semester Course (GNEN6700: Management of Projects and Technological Innovation), this course first uses published literature to review the theory and practice of technological innovation and economic development at the beginning of the 21st Century. It then addresses the rationale and methodology for implementation of information accelerated radical innovation throughout the 21st Century. The student's grade is determined by performance on 3 Graded Assignments [MidTerm Exam – 20 points, Final Exam – 20 Points, and An Assessment Report Exploring Acceleration of Algae Biofuels as a Potential Radical Innovation. Radical Team Assessment on Improvement of Information Accelerated Radical Innovation – 60 Points]. Reading material for the 3 Graded Assignments includes:

- GNEN6700 Textbook(as needed): Fred Betz, 2nd Edition 2003, Managing Technological Innovation / Competitive Advantage from Change – Reviews content of prior course.
- Two Books (for reading as needed), available with purchase from www.amazon.com
 - *Andrew Grove, "Only The Paranoid Survive: How To Exploit The Crisis Points That Challenge Every Company and Career", Doubleday, New York, NY, ISBN 0-385-48258-2, 1996.*
 - *Thomas L. Friedman, "Hot, Flat, and Crowded: Why We Need a Green Revolution and How It Can Renew America", Farrar, Straus and Giroux, New York, ISBN-13: 978-0-374-16685-4, 1st Edition, 2008.*
- Published Innovation Articles and Reports via BB9 Home Icon:
 - OTA Chapters 1,2,3
 - Open/Horizontal vs Closed/Vertical Innovation
 - Radical Innovation Dynamics
 - Accelerated Radical Innovation
 - IT/Computer Innovation Impacts
 - Scenario Forecasting/Planning
 - Innovation Cluster Dynamics
 - Outsourcing/Offshoring

2.3 Course Graded Assignments

The course content reflected in topics covered are those summarized above in Sections 2.1 and 2.2. Graded item assignments covering these materials include:

- | | |
|--|---------------------------|
| • MidTerm Exam (Weeks 8-9) | 20 points of Course Grade |
| • Final Exam (Week 16) | 20 points of Course Grade |
| • Report on Potential For Algae Biofuel Radical Innovation | |
| ○ 2 Page Team Project Outline Report | 15 points of Course Grade |
| ○ 20 Page Team Project Final Report | 45 points of Course Grade |

3. Course Instructional Materials

3.1 Selected Reference Texts: Purchase from Amazon.com or equivalent vendor

- 1) Radical innovation imperative to address the inevitability of change

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1. Andrew Grove, "Only The Paranoid Survive: *How To Exploit The Crisis Points That Challenge Every Company and Career*", Doubleday, New York, NY, ISBN 0-385-48258-2, 1996.
- 2) The global innovation impact of alternative energy fuels in the 21st Century
2. Thomas L. Friedman, "Hot, Flat and Crowded: Why We Need a Green Revolution and How It Can Renew America", Farrar, Straus and Giroux, New York, ISBN-978-0-374-16685-4, 1st Edition, 2010.

3.2 Additional Selected Published Articles By Radical Innovation Authors
Posted Publications Available via ICONS on GNEN6790 Home Page

- OTA Chapters 1,2,3 ICON
- Open/Horizontal vs Closed/Vertical Innovation ICON
- Radical Innovation Dynamics ICON
- Accelerated Radical Innovation ICON
- IT/Computer Innovation Impacts ICON
- Scenario Forecasting/Planning ICON
- Innovation Cluster Dynamics ICON
- Outsourcing/Offshoring ICON (*for consultation as needed*)

4. Graded Assignments and Grading Scale

4.1 Graded Assignments

Assignment	Points	Due
Course Instructional Materials in Item 3 and Student Welcome Letter ➤ Reference Textbooks (Item 3.1) and Publications (Item 3.2)	3 Graded Assignments	Weeks 1-17
MidTerm Exam (To Be Submitted Latest Week 9) Based on Reference Texts and Published Articles on Blackboard Page	20	Latest Week 9
Final Exam (To Be Submitted end of Week 15) Based on Reference Texts and Published Articles on WebCT	20	End Week 15
Algae Biofuel Potential Innovation Assessment Project Student Team Term Project Applying IARI Methodology <ul style="list-style-type: none"> • 2-Page Team Project Outline Report • Final Report (nominal 20 pages with Abstract, Introduction, Assessment, Conclusions, References, Figures, Tables) 	60 15 45	 Week 6 Week 17
TOTAL	100	

4.2 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

Information Accelerated Radical Innovation
GNEEN 6790 COURSE SYLLABUS: Spring Semester 2012

5. **GNEEN 6790 Spring 2012 Course Schedule**

Class	Student Assignments	Description
Week 1 Jan 10-16 To Week 4 Jan 31 -Feb 6	Utilize Course Materials on Homepage Use Email and Discussion Tools Purchase from Amazon.com and Review Special Reference Texts and OTA Reports as Needed Understand the 3 graded assignments Review Literature on Algae Biofuel (e.g. on Blackboard Homepage and via Literature Search) as a Potential Radical Innovation, and Submit 2-Page Report Outline to Instructor in Week 5	Welcome, Schedule/Syllabus, Content Icons Communicate With Instructor and Classmates Andrew Grove, "Only The Paranoid Survive" Thomas L. Friedman, "Hot, Flat and Crowded" 1. Algae Biofuel Proposal Overview (15 Points) 2. Algae Biofuel Innovation Report (45 Points) 3. MidTerm Exam (20 Points) 4. Final Exam (20 Points) Communicate with classmates and instructor about proposed Algae Biofuel Radical Innovation
Week 5 Feb 7-13 To Week 9 Mar 7-13	Continue literature research on Algae Biofuel and communicate with classmates and instructor Review Innovation Readings Posted on Homepage and from Reference Texts Review Mid Term Exam Questions and Prepare for MidTerm Exam	Complete initial assessment of potential of Algae Biofuel as a radical innovation Week 5 – Prepare 2 Page Outline Project Report proposing an Algae Biofuel Radical Innovation, submit to Instructor and Classmates (15 points) Week 8- Submit Mid Term Exam (20 points)
Week 10 Mar 14-20 To Week 13 April 4-10	Continue Your Algae Biofuel Project Development, Using Literature Review and Exchange of Ideas with Classmates Exchange Team Project Report Drafts with Classmates and Instructor <i>Begin Final Exam Preparation</i>	Search literature for further information related to Algae Biofuel as a radical innovation Complete assessment of Algae Biofuel as a Radical Innovation, and submit Final 20 page Report by End of Week 16 <i>Review Articles Related to Final Exam Questions</i>
Week 14 April 11-17 To Week 17 May 2-8	Upgrade Initial Report Drafts to 20Page Final Report by end Week 16 Submit Final Exam Answers via Blackboard by end of Week 16	Instructor grade Final Report Worth 45 Points of final grade Instructor grade Final Exam Worth 20 Points of final grade
Week 18: End of Semester -- Posting of Final Grades May 11		