Lecture Information

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Course information

- 1. Course title: Chemical Engineering Fundamentals and Design (course number: 34565)
- 2. Time and location

Class I: Tuesday 5,6 (310-419) / Thursday 5 (310-419)

- 3. Medium of instruction: English A
- 4. Reference: "Creative Engineering Design" (Brian S. Thompson)
- 5. Lecture materials: downloading PDF files from website (http://nemlcau.wix.com/neml)

Instructor information

- 1. Name: Sang Hyun Ahn
- 2. Contact information: 310-328 (location), 02-820-5287 (phone), shahn@cau.ac.kr (e-mail)
- 3. Available office hour for student meeting: right after class, or anytime by appointment
- 4. Teaching assistants: Junhyeong Kim (207-528, <u>blueholl3205@naver.com</u>)

Hyunki Kim (207-528, gusrl7811@naver.com)

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Course description

The course will teach students to develop the creative problem-solving ability in practical aspects. The students will be instructed to define given problems and find methodologies for the solutions based on fundamental scientific knowledges. Team projects will be carried out on a team and individual basis. The results will be presented and evaluated.

Assessment

- 1. Attendance (10%): students must attend the class over 75% of class dates (if not, he/she will get "F" grade).
- 2. Quiz (10 %), Mid-term exam (20 %)
- 3. Presentation*: individual (15 %) + team (15 %)
- 4. Reports: proposal (10 %) + final (10 %)
- 5. Attitude (10%): debating in presentation

Grading

A grade (< 50 %) + B grade (< 90 %) + C, D grade (> 10 %)

*Individual: $8 \sim 10 \min (\text{presentation}) + 2 \sim 4 \min (Q \& A)$ *Team: $18 \sim 20 \min (\text{presentation}) + 5 \sim 7 \min (Q \& A)$

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Lecture schedule

Week	Contents		Contents	
1	Lecture Information		Individual Presentation II	
2	Creative Idea of Chemical Engineering I		Individual Presentation III	
3	Creative Idea of Chemical Engineering II		Individual Presentation IV	
4	Creative Idea of Chemical Engineering III (Quiz)		Individual Presentation V	
5	Design Proposal I		Individual Presentation VI	
6	Design Proposal II	14	Team Presentation I	
7	Individual Presentation I		Team Presentation II	
8	Mid-Term Exam		Final Exam Period	

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Canceled class schedule

Week	Thursday	Tuesday	Week	Thursday	Tuesday	
1	03/02	03/07	9	04/27	05/02	
2	03/09	03/14 10		05/04	05/09	
3	03/16	03/21	11	05/11 (KSIEC 2017)	05/16	
4	03/23	03/28 (Patent Attorney)	12	05/18 (MRSK 2017)	05/23	
5	03/30 (Patent Attorney)	04/04 (ICNME 2017)	13	05/25	05/30	
6	04/06 (KECS 2017)	04/11	14	06/01	06/06 (Memorial Day)	
7	04/13	04/18	15	06/08	06/13	
8	04/20 (Mid-term Exam)	04/25 (Mid-term Exam)	16	06/15 (Final Exam)	06/20 (Final Exam)	

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Evaluations

1. Individual Project Presentation Evaluation

Date	Name (Presenter)	Topic & Comments						
		Title:						
		Comments:						
2017					1			
		Creativity (30)	Logic (30)	Clarity (20)	Preparedness (20)	Total (100)		

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Evaluations

2. Team Project Presentation Evaluation

Date	Name	Topic & Comments						
2017		Title: Comments:						
		Creativity (30)	Logic (30)	Clarity (20)	Preparedness (20)	Total (100)		

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Evaluations

3. Team Project Presentation Self-Evaluation

Member	Evaluation items	Grade					
Name		Poor (5)	Moderate (10)	Average (15)	Good (20)	Excellent (25)	
	Participation						
	Contribution						
	Cooperation						
	Communication						
	Total						

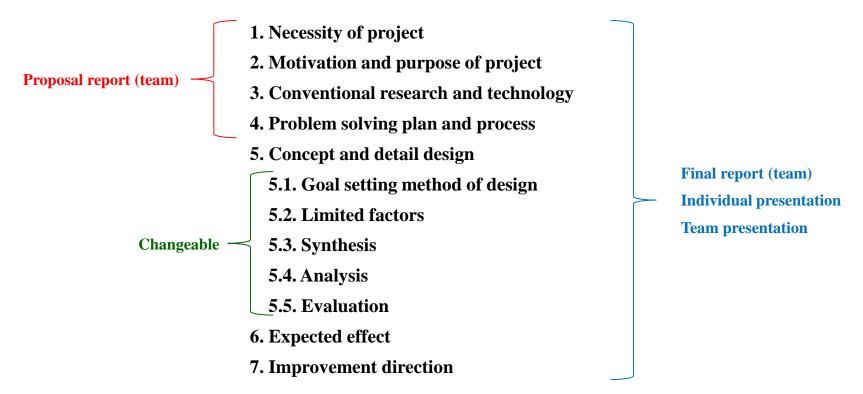
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Subjects

- 1. Individual presentation: free topic
- 2. Team presentation: grand challenges for engineering (<u>http://www.engineeringchallenges.org/cms/8996.aspx</u>)
- 2.1. Make Solar Energy Economical
- 2.2. Provide Energy from Fusion
- 2.3. Develop Carbon Sequestration Methods
- 2.4. Manage the Nitrogen Cycle
- 2.5. Provide Access to Clean Water
- 2.6. Restore and Improve Urban Infrastructure
- 2.7. Advance Health Informatics
- 2.8. Engineer Better Medicines
- 2.9. Reverse-Engineer the Brain
- 2.10. Prevent Nuclear Terror
- 2.11. Secure Cyberspace
- 2.12. Enhance Virtual Reality
- 2.13. Advance Personalized Learning
- 2.14. Engineer the Tools of Scientific Discovery

Lecture information

Your reports and presentation should include...



All reports and presentation materials should be prepared by English.