

글로벌 창의적 제품개발 (Global Innovative Capstone Design)

교과목 번호	명칭	국문	글로벌 창의적 제품개발				학점-강의시간-실습시간	
M2177.002400		영문	Global Innovative Capstone Design				3-2-2	
학과(부)(전공)	공과대학	이수학년	3학년	개설주기	매년	담당교수	김종원,서승우,김성우	
교과구분	전선	개설학기	계절학기	성적부여	A~F	수강정원	20	

본 과목에서는 수강생들에게 대한민국을 넘어 세계로 나가서 스스로 문제를 탐색하고 정의한 후, 그것을 해결하는 설계대안을 도출하고, 핵심기능시제품을 개발할 것을 요구한다. 이러한 훈련을 통해서 수강생들은 미래에 국제/사회적 리더로서 지금까지 존재하지 않았던 제품이나 기술을 개발할 수 있는 "global first mover"의 능력을 배양한다. 본 과목은 서울대학교뿐만 아니라 해외 우수 대학의 공대는 물론 타 단과대학의 다양한 전공의 학생들로 구성되는 다학제 글로벌 설계팀을 구성해서 설계프로젝트를 수행하도록 요구한다. 설계팀은 한 학기 동안 (1) 국제 사회나 기업체가 필요로 하는 문제를 창출해서 고객요사항목록을 작성한 후, (2) 체계적인 공학설계 방법론을 기반으로 개념설계를 수행하여 최적설계대안을 완성하고, (3) 이 설계대안을 바탕으로 핵심기능시제품을 제작하고, (4) 최종적으로 이것을 학기말에 발표하고 전시한다. 공동으로 강의를 운영하는 해외 대학 학생들과의 팀구성 및 팀워크를 위해 해외 대학을 방문하거나 해외 대학 학생들이 서울대학교에 방문할 수 있다. 한편, 설계 프로젝트팀을 지원하기 위해서 마케팅, 산업디자인, 특허법, 창의적 사고, 개념설계 방법론, 문제창출 사례연구 등 다양한 강의를 제공하며, 다학제 교수진, 변리사, 외부 전문가로 이루어진 멘토그룹이 개인별, 조별 멘토링을 한다.

This course requires students to go out into global society and industry companies beyond Korea for seeking and defining a global user-centered design problem by themselves, to develop the engineering design alternative to solve it, and then to build a working critical function prototype. By this type of training, as the leaders in the future, students cultivate the ability of "global first movers," who can develop a product and technology which has not existed before. This course requires to execute a design project by composing a global and interdisciplinary design team, which consists of students from various majors of the other colleges and foreign universities, as well as of the engineering college. For a semester, the design team (1) completes a customer requirement list after creating a global user-centered design problem that is required by the global society and industry companies, and then (2) finishes its optimal design solution based on the systematic design methodology, and (3) builds a critical function prototype of the design solution, and finally, (4) presents and exhibits it at the semester end. Students can visit a collaborative foreign university for team building and team working. Likewise, students of collaborative foreign universities can visit our university. To support the design team, this course provides various lectures such as marketing, industrial design, patent law, creative thinking, conceptual design methodology, case studies in problem creation and so on. Cross-college faculty patent attorney, external experts provide individual and team mentoring for student projects.

Evaluation	Attendance	Assignment	Mid-term	Final	Attitude	Etc.	Total
	10%	80%				10%	100%

Lecture schedule

W	Day	Lecture topic #1 (15:00-17:00)	Lecture topic #2 (17:00-19:00)	Place
		Jongwon Kim, jongkim@snu.ac.kr 02-880-7138 Seung-Woo Seo, sseo@snu.ac.kr , 02-880-8418 Seong-Woo Kim, sinabrlo@snu.ac.kr , 02-880-1888	TA: mynkyu@snu.ac.kr	
0	Aug. 25	Kick-off meeting (- Aug. 30)		HK
1	Sep. 1	Course opening - Online greeting, updates	Lean startup product lifecycle management (HK)	
2	Sep. 8	Formative evaluation for product design(SE)	Industry case study #1 (SE)	
3	Sep. 15	Holiday		
4	Sep. 22	Design methodology (SE)	Industry case study #2 (HK)	
5	Sep. 29	Project management (HK)	Industry case study #3 (SE)	
6	Oct. 6	Face-to-face design review meeting #2 (Oct. 4 - 7) for design idea sophistication		SE
7	Oct. 13	Summative evaluation for product design (SE)	Industry case study #4 (BJ)	
8	Oct. 20	Business plan and venture capital (HK)	Industry case study #5 (BJ)	
9	Oct. 27	Online design review #3 with invited expert panels for conceptual design		
10	Nov. 3	Supply chain, distribution and risk (HK)	Eco-manufacturing methods and strategies (BJ)	
11	Nov. 10	Design for assembly/disassembly (BJ)	Industry case study #5 (HK)	
12	Nov. 17	Intellectual property right (SE)	Toward manufacturing (BJ)	
13	Nov. 24	Final presentation and exhibition (-Nov. 29)		BJ
14	Dec. 1	Final report submission, peer-to-peer team member evaluation		
15	Dec. 8	Grading		

Kick-off meeting (- Aug. 30) → Hong Kong would make a kick-off meeting plan at HKUST + Shenzhen/ Song Shan Lake

- Course introduction, Team building, One day workshop on Ideation methodology: Brainstorming, KJ method, Lateral thinking, Persona, KD method etc. (SE), Industry visit

	Aug. 25	Aug. 26	Aug. 27	Aug. 28	Aug. 29	Aug. 30
09:00-12:00		- Icebreaking - Course introduction	- Team working	- Face-to-face meeting with Faculty - Team working	- Team working	- Wrap-up - Move to Hong Kong
13:00-17:00	To Hong Kong	- Team building - Workshop: Ideation method	- Move to Song Shan lake - Visit DJI	- Visit Song Shan Lake - Team working	- Problem Presentation	To the airport
16:00-	Reception dinner	- Team working	- Team working	- Team working	Farewell dinner	

Face-to-face design review meeting (Oct. 4 - 7) → Seoul would make a design review meeting plan at SNU

- Lecturing: Robust engineering design, team communication / conflict management, Workshop – making a promotion brochure, poster, and video, Industry visit

	Oct 3 (Mon)	Oct 4 (Tue)	Oct 5 (Wed)	Oct 6 (Tue)	Oct. 7 (Fri)	Oct 8–9 (SAT, SUN)
09:00-12:00		- Robust eng. design - Team comm. / conflict managem. - Workshop: Promotion video, brochure	- Team working	- Team working - Face-to-face meeting with Faculty	- Presentation	- (Option) Discounted accommodation if students want to stay
13:00-17:00		- Team working	- Industry visit	- Team working	- Farewell lunch - Move to the airport	
16:00-	- To Seoul	- Reception dinner	- Team working	- Team working		

Online design review with invited expert panels (Oct. 27) → Seoul would make an online meeting plan

- 12 mins PT + 8 mins critique per each team on video conferencing

Final presentation and exhibition (-Nov. 29) → Beijing would make a final presentation and exhibition plan at Beijing

- Booth setup for prototype exhibition, Final presentation (10 mins PT + 5 mins Q&A)

	Nov. 24 (Thu)	Nov. 25(Fri)	Nov. 26 (Sat)	Nov. 27 (Sun)	Nov. 28 (Mon)	Nov. 29 (Tue)
09:00-12:00		- Exhibition plan overview	- Sightseeing - Great-wall	- Team working	- Presentation	
13:00-17:00	- To Beijing	- Team working		- Team working	- Farewell lunch - Exhibition with prototype	- Move to the airport
16:00-	- Reception dinner	- Team working	- Team working	- Team working	- Farewell Dinner	