

**강의계획서**

검색조건 :

교양/교직/군사학 ▼

첨성인기초 - 독서와토론 ▼

조회

[수업시간][건물 및 교과구분 코드][검색]

[영문강의계획서보기(Syllabus)]

과목명	반도체소자특성
과목번호	ELEC785001
학점	3.0
개설대학	전자공학부
개설학기	20181
교과구분	전공
담당교수	박홍식
강의시간	월5B6A6B 월7A7B8A
강의실명	IT대학3호관(공대11호관)104 IT대학3호관(공대11호관)104
연락처/E-mail	** 통합정보시스템 로그인- 수업/성적- 수업- "강의담당교수조회"에서 확인 가능함.
면담시간	
강의언어	한국어

**[ 강의계획서 ]**

강의개요 및 목적
Understanding the operation and characterization of electrical and optical semiconductor devices (modern field-effect transistors, memory devices, photodetectors, optical modulators, solar cells) and their practical applications.
교재 및 참고문헌
0. Class notes and lecture slides selected and combined from following references.  1. Yuan Taur, Fundamentals of Modern VLSI Devices (2nd Ed)  2. S Sze, Physics of Semiconductor Devices (3rd Ed)  4. D. K. Schroder, Semiconductor Material and Device Characterization (2nd Ed)
Most topics will be covered by the class notes/slides and textbooks, but some of the topics may go beyond (or beside) the textbook: handouts and references will be provided when necessary

강의진행 방법 및 활용매체
Lecture slides and notes
과제, 평가방법, 선수과목
Midterm exam: 40% Final exam: 40% Attendance and homework: 20%
수강에 특별히 참고할 사항
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장애 학생을 위한 학습지원 사항
Necessary aids will be offered for students with disabilities.

[ 강의 내용 및 일정 ]

no	강의 요목 및 수업목표	과제 및 연구문제	교재 및 참고자료	비고
1	Class overview Review of semiconducting material parameters Review of semiconductor device parameters			
2	Review of semiconductor physics Drawing and understanding band diagrams			
3	Metal-semiconductor junctions and characterization Semiconductor-semiconductor junctions and characterization			
4	Metal-oxide-semiconductor junctions			
5	Field-effect transistors (1)			
6	Field-effect transistors (2)			
7	CMOS technology			
8	In-class midterm exam			
9	CMOS performance factors and scaling issues			
10	Review of memory device technology Volatile memory devices			
11	Nonvolatile memory devices			
12	Nano devices based on low-dimensional materials such as graphene and CNT			
13	Optical devices: photodetectors			
14	Optical devices: solar cells, semiconductor optical modulators			

15	In-class final exam			
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수험부정행위시, 경북대학교 수험부정행위에 관한 처벌규정에 의거 그 정상에 따라 수험자격박탈, 근신, 유기·무기정학, 또는 제적 처분될 수 있으니, 각별히 유의하여 주시기 바랍니다.