

강의계획서

검색조건 :

교양/교직/군사학 ▼

첨성인기초 - 독서와토론 ▼

조회

[수업시간][건물 및 교과구분 코드][검색]

[한글강의계획서보기]

[Syllabus]

Course Outline					
<p>The goal of this graduate-level class is to understand more advanced physics and electrical properties of semiconductors.</p> <ul style="list-style-type: none"> - Introducing the classification of materials and basic properties of semiconductors - Discussing basics of quantum mechanics that are required to understand semiconductor properties - Discussing energy band theory and equilibrium carrier concentration in semiconductors - Discussing the charge transports in semiconductors 					
Core Competencies					
Innovativeness		Reflection		Character	
Creativity <input checked="" type="checkbox"/>	Convergence <input type="checkbox"/>	Critical Thinking <input type="checkbox"/>	Exploration <input checked="" type="checkbox"/>	Communication <input type="checkbox"/>	Responsibility <input type="checkbox"/>
Course Objectives					
Competencies	Course Objectives				Representative Competence
Exploration	Discussing energy band theory and equilibrium carrier concentration in semiconductors				<input checked="" type="checkbox"/>
Creativity	Discussing the charge transports in semiconductors				<input type="checkbox"/>
Prerequisites					
physical electronics, electronic device					

Recommended Subsequent Courses							
semiconductor device							
Grading Scale(100%)							
Attendance	Midterm Exam	Final Exam	Assignment	Presentation	Discussion	Others	
5%	45%	45%	5%	0%	0%	0%	
Evaluation Methods							
* Grading Criteria – Midterm exam (45%), final exam (45%), homework (5%), attendance (5%)							
Textbook and Other References							
1. [Textbook-1] R. F. Pierret, Advanced Semiconductor Fundamentals (2nd Ed) 2. [Reference-1] C. M. Wolfe, Physical Properties of Semiconductors 3. [Reference-2] J. H. Davies, The Physics of Low-dimensional Semiconductors							
Notice to Students							
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Support Available for Disabled Students							
A. Hearing Impaired : first row priority seating, Class transcripts may also be provided. B. Developmentally Challenged : Extended Test Period. C. Brain lesions : Extended Test Period, Class transcripts may also be provided. D. Visually Impaired : Larger Font test will be provided. Other : Aid offered dependant on specific disabilities.							

[Course Content and Schedule]

no	Unit Goals and Learning Content	Teaching Methods	Assignments and Research Questions	비고
1	Class overview and introduction to semiconductors	Textbook and handout		
2	The crystal structure of semiconductors	Textbook and handout		
3	Basics of quantum mechanics for semiconductors (1)	Textbook and handout		
4	Basics of quantum mechanics for semiconductors (2)	Textbook and handout		
5	Energy band theory (1) – Approximate one-dimensional analysis	Textbook and handout		

6	Energy band theory (2) – Extrapolation of concepts to three dimensions	Textbook and handout		
7	Equilibrium carrier statics (1) – Density of states	Textbook and handout		
8	Midterm exam			
9	Equilibrium carrier statics (2) – Equilibrium carrier concentration	Textbook and handout		
10	Equilibrium carrier statics (3) – Concentration and Fermi level calculations – Determination of Fermi level	Textbook and handout		
11	Recombination–generation processes	Textbook and handout		
12	Carrier transport (1) – Drift	Textbook and handout		
13	Carrier transport (2) – Diffusion	Textbook and handout		
14	Carrier transport (3) – Continuity equations and diffusion equations	Textbook and handout		
15	Final exam			

[Course Evaluation]

Categories	Questions	Note
Self-Rating	1.I participated actively in the course. 2.I have made a lot of effort while taking the course.	
Standard Questions	3.The course syllabus contained the detailed information about the operation of the course. 4.The professor ran the course according to the course syllabus. 5.The professor clearly stated the course plan in the first class. 6.The professor stated objectives of each lecture clearly and explicitly. 7.The professor stimulated my interest in the field. 8.The professor had expertise on the course contents. 9.The professor delivered the class contents adapting to student abilities and learning levels. 10.The professor used various teaching methods considering course contents. 11.The professor encouraged students to ask questions, and responded properly. 12.The professor gave assignments to deepen the course contents. 13.The professor provided meaningful and timely feedback on the students performances. 14.Overall, I would like to recommend this lecture to other students. 15.The course helped me to develop [the representative competency].	
Optional Questions	I-1. The professor explained the course contents well. I-2. The professor gave a lecture in adjusting the intensity and tone of voice to deliver the course contents effectively.	

Cheating, plagiarism, and other dishonest practices will be punished as harshly as Kyungpook National University policies allow. The University specifies that cheating is grounds for dismissal. Penalties less severe may be imposed instead. A list of possible disciplinary actions is given below. Actions by the university:

- Failure in course
- Suspension from university for a designated period
- Expulsion from university