# 2022학년도 2학기 교수계획표

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| 교과목명 (Course Title) | 반도체공학 | 교과목번호 (Course Code) | PM3000590 | 분반 (Section) | |
| 개설학과 (Department) | 전자공학과 | 개설학년 (Level) | 3 | 학점-이론-실습 (Credit-Theory-Practice) | 3.0-3.0-0.0 |
| 강의시간 및 강의실 (Class Hours & Classroom) | | | | | |
| 담당교수 (Lecturer) | 이문석 | 연구실 (Office) | | 상담가능시간 (Office Hours) | |
| | | 연락처 (Telephone) | | 이메일 (E-mail) | |
| 수업방식 (Methodology of Instruction) | 대면강의 | | | | |
| 평가방법 (Evaluation and Grading) | | | | | |
| 선수과목 및 지식 (Prerequisites) | physical electronics and general physics | | | | |
| 교수목표 (Course Objectives) | Understanding of the operational principles and structures of MOSFET<br>Understanding of the operational principles and structures of Bipolar Junction Transistor<br>Understanding of the integrated circuit manufacturing processes<br>Understanding of Semiconductor device modeling principles<br>Understanding of the operational principles of optical devices, high frequency devices, and power device | | | | |
| 강의개요 (Course Description) | Main topics of this subject are understandings of device physics of MOSFET, BJT and other special<br>devices and some basic device modeling concepts will be dealt. Furthermore, basic manufacturing<br>processes of integrated circuit will also be introduced | | | | |
| 교재 및 참고자료(Textbooks and References) | | | | | |
| 주교재 (Required Textbooks) | Semiconductor Physics & Devices (Basic Principles), 4th edition, Donald A. Neamen | | | | |
| 참고자료 (References) | Principles of Semiconductor Devices, Sima Dimitrijev, Oxford 2006 | | | | |

| 주별 강의계획(Weekly Schedule of Classes) | | |
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| 주차<br>(Week No.) | 강의 및 실험 실기 내용<br>(Course Material) | 과제 및 기타 참고사항<br>(Assignments and Other Notes) |
| 제1주<br>(Week 1) | [표절, 시험 부정행위 예방교육 및 실험·실습 안전교육 실시]<br>[Orientation and Education on Academic Misbehavior(e.g. Cheating, Plagiarism) and Safety Education on Experiment and Practice]<br>The Crystal Structure of Solids | |
| 제2주<br>(Week 2) | Introduction to the Quantum Mechanics | |
| 제3주<br>(Week 3) | Introduction to the Quantum Theory of Solids | |
| 제4주<br>(Week 4) | The Semiconductor in Equilibrium | |
| 제5주<br>(Week 5) | Carrier Transport Phenomena | |
| 제6주<br>(Week 6) | Nonequilibrium Excess Carriers in Semiconductors | |
| 제7주<br>(Week 7) | The PN junction | |
| 제8주<br>(Week 8) | The PN junction diode | |
| 제9주<br>(Week 9) | Metal Semiconductor and Semiconductor Heterojunctions | |
| 제10주<br>(Week 10) | Fundamentals of the Metal Oxide Semiconductor Field Effect Transistor | |
| 제11주<br>(Week 11) | Metal Semiconductor Field-Effect Transistor: Additional Concepts | |
| 제12주<br>(Week 12) | | |
| 제13주<br>(Week 13) | | |
| 제14주<br>(Week 14) | | |
| 제15주<br>(Week 15) | | |
| 제16주<br>(Week 16) | | |