| Program | Level of studies | | **Second cycle** | |
|---|---|---|---|---|
| | Program name | | **Physics** | |
| Course name | **SEMICONDUCTOR MICRODEVICES** | | | |
| Course ID | Semester | Course status | ECTS credits | L+E |
| **PCM9621** | **I** | **ELECTIVE** | **6** | **2+0** |
| Lecturer | **Doc. Dr. Maja Đekić** | | | |
| Aims and intended learning outcomes | Course objective is to familiarize students with basic properties of semiconductor micro devices, their production and operating principles.<br>Learning outcomes:<br>1. Understands phenomena in semiconductor micro devices<br>2. Understands the methods for production of semiconductor micro devices<br>3. Is familiar with application of these devices | | | |

Course content

INTRODUCTION. Course content and objective: significance of semiconductor micro devices in modern world. P-n junction. Structure and operating principle. Electrical properties of p-n diode. Temperature dependence-volume and contact resistance. Metal-semiconductor junction-structure and operating principle. Schottky diode. Diode performances with small signals, high speed and frequency. Bipolar transistor-structure and operating principal. Unipolar filed effect transistor. JFET. MESFET. Optoelectronic devices. Photodiodes, Photo conductors, photo detectors. Solar cells. Light emitting diodes. Laser diodes.

| Student workload (hours) | | Grading | |
|---|---|---|---|
| Lectures and Exercises | 30 | Assessment method | Points |
| Exam preparation | 50 | Laboratory exercises | 40 |
| Assignments | 50 | Paper | 40 |
| Other | 20 | Final Exam | 20 |
| Total | 150 | | |
| | | Total | 100 |

Literature


1. R. A. Smith, Semiconductors, Cambridge University Press, 1978.
2. S. M. Sze, Physics of Semiconductor Devices, 3rd ed., John Wiley & Sons, 2002


Remarks