

課程資訊 (Course Information)					
科號 Course Number	BMES531600	學分 Credit	3	人數限制 Size of Limit	NA
中文名稱 Course Title	生醫電學				
英文名稱 Course English Title	Biomedical Electronics				
任課教師 Instructor	王廷瑋(Wang, Ting Wei)				
上課時間 Time	T2T3T4	上課教室 Room	419		
課程大綱 (Syllabus)					
<p>一、課程說明(Course Description)</p> <p>The course will provide students with an introduction to electrical knowledge that is commonly used in biomedical engineering, including circuit, semiconductor physics, microelectronics, and electromagnetism. The content includes the principle of mentioned electrical knowledge and applications in biomedical engineering. The main goal of this course is to help students thoroughly understand the role of electrical knowledge in biomedical engineering from principle to application. The content includes abundant electrical technologies that will greatly help students to perform multidisciplinary research in the future.</p> <p>二、教學方式(Teaching Method)</p> <p>Lectures and presentations.</p> <p>三、教學進度(Syllabus)</p> <ol style="list-style-type: none"> 1. Circuit: circuit analysis 2. Microelectronics theorem: operation amplifier and filter 3. Semiconductor theorem: semiconductor physics and process 4. Microelectronics theorem: diode 5. Microelectronics theorem: bipolar junction transistor and field effect transistor 6. Microelectronics theorem: single stage amplifier and multiple stage amplifier 7. Microelectronics biomedical application: ECG sensor and pulse rate circuit 8. Electromagnetism theorem: vector analysis 9. Electromagnetism theorem: electrostatic field and magnetostatic field 10. Electromagnetism theorem: Maxwell's equations 11. Electromagnetism biomedical application: transcranial magnetic stimulation <p>四、成績考核(Evaluation)</p> <p>Participation (50%)</p> <p>Classroom experiments (students work in groups on carefully designed guided inquiry questions) (50%)</p>					

