Ming Chuan University Biomedical Engineering Department Course Outline for all students entered on August 2018

2018.03.27

	Course	Credits	Hrs	1st year				2nd year				3rd year				4th year				Note
				Fall		Spring		Fall		Spring		Fall		Spring		Fall		Spring		
				class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	
Core Required Courses	00123 Chinese Literature: Appreciation and Creative Writing I	2	2	2																Graduation Requirement 1
	00124 Chinese Literature: Appreciation and Creative Writing II	2	2			2														
	01106 Practical English I	0	2	1	1															
	01107 Practical English II	0	2			1	1													
	01206 Practical English III	0	2					1	1											
	01207 Practical English IV	0	2							1	1									
	01306 English for Business Communication I	2	3									2	1							Graduation Requirement 1
	01307 English for Business Communication II	2	3											2	1					
	01406 Practical English for Professionals I	2	3													2	1			
	01407 Practical English for Professionals II	2	3															2	1	
	36134 Applied Information Technology：Office Software	2	3	2	1															Graduation Requirement 1
	13285 Programming Design	2	3			2	1													
	General Education	12	12																	Graduation Requirement 2
	00121.00122.00221. 00222.00321.00322 Physical Education I~XI	0	12	2		2		2		2		2		2						Graduation Requirement 1
	Subtotal	28	54	7	2	7	2	3	1	3	1	4	1	4	1	2	1	2	1	
Professional Requi	35109 Calculus I	3	4	3	1															
	67113 Physics I	3	3	3																
	67114 Physics Lab I	1	3	1	2															
	67118 General Chemistry	3	3	3																
	67127 Introduction to Medical Materials Industry	1	1	1																New

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				class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	
required Courses	35110 Calculus II	3	4			3	1													
	67120 Physics II	3	3			3														
	67121 Physics Lab II	1	3			1	2													
	67122 Electronic Circuits	3	3			3														
	67116 General Biology Lab	1	3			1	2													
	67123 Organic Chemistry	3	3			3														
	67126 Introduction to Biomedical Engineering	1	3			3														Change Fall to Spring
	67228 Engineering Mathematics I	3	3					3												
	67243 Electronics I	3	3					3												
	67217 Electronic Circuits Lab I	1	3					1	2											Service Learning
	67214 Anatomy and Physiology I	3	3					3												
	67225 Anatomy and Physiology Lab I	1	3					1	2											
	67226 Biochemistry	3	3					3												
	67229 Engineering Mathematics II	3	3							3										
	67244 Electronics II	3	3							3										
	67220 Electronic Circuits Lab II	1	3							1	2									Service Learning
	67223 Signals and Systems	3	3							3										
	67221 Anatomy and Physiology II	3	3							3										
	67227 Anatomy and Physiology Lab II	1	3							1	2									
	67323 Biomedical Engineering Lab I	1	3									1	2							
	67320 Applied Mechanics	3	3									3								
	67324 Biomedical Engineering Lab II	1	3											1	2					
	67415 Research Project I	1	2													2				
	67416 Research Project II	1	2															2		
	67417 Biomedical Engineering Ethics	1	1															1		
	Subtotal	62	86	11	3	17	5	14	4	14	4	4	2	1	2	2	0	3	0	

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					class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	
Professional Elective Courses	Medical Materials Industry Program	67152 General Biology	3	3	3																Required Elective Courses. Change Spring to Fall.
		67253 Database Management	2	3							2	1									Computer Courses
		67255 Medical Devices Quality System	3	3									3								Distance Learning Courses.
		67361 Medical Electronics	3	3									3								
		67365 Internships Abroad	2	2									2								
		BE074 Medical Informatics	3	3									3								Computer Courses
		67359 Clinical Instrumental Analysis	3	3											3						
		67362 Biostatistics	3	3											3						
		67458 Medical Engineering Lab	3	8													3	5			
		67465 Electromagnetic Compatibility	3	3													3				
		67452 Medical Measurement and Instrumentation	3	3															3		
		67453 Healthcare Photoelectric System	3	3															3		
		67460 Patent Engineering	3	3															3		
		67462 Introduction to Nano Biomedicine	3	3															3		
	Smart Medical Treatment	67257 Programming Design I	2	3					2	1											Required Elective Courses. Computer Courses.
		67258 Programming Design II	2	3							2	1									Required Elective Courses. Computer Courses.
		67256 Introduction to Materials Science	3	3							3										

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				Fall		Spring		Fall		Spring		Fall		Spring		Fall		Spring		
				class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	
Program	67356 Digital System Design	3	3							3										Computer Courses
	67352 Biomedical Materials	3	3									3								
	67353 Introduction to Clinical Medicine	3	3									3								
	67364 Microprocessor	3	3									3								Computer Courses
	67357 Biomedical Signal Processing	3	3											3						Computer Courses
	67358 Materials Mechanics	3	3											3						
	BE075 Embedded Systems	3	3											3						Computer Courses
	67461 Biosensor	3	3													3				
	67454 Introduction to Biomechanics	3	3													3				
	67455 Tissue Engineering	3	3													3				
	BE076 IHE Smart Integrated Interface	3	3													3				Computer Courses
Other	67151 Introduction to Computer Science	2	3	2	1															Computer Courses
	67457 Complementary Medicine Engineering	3	3															3		
	67463 Technical English Writing	2	2													2				English Courses
	67464 Technical English Presentation	2	2															2		English Courses
	BE077 Internship	3	3													3				7+1 Internship as Career Program Courses
	BE078 Advanced Internship	3	3															3		
	BE079 Seminar on Industry Practice	3	3															3		
	00134 Nursing Education I	0	2	2																
	00135 Nursing Education II	0	2			2														

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				class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	
	00241 All-out Defense Education Military Training A	0	2	2																
	00242 All-out Defense Education Military Training B	0	2			2														
	00243 All-out Defense Education Military Training C	0	2					2												
	00244 All-out Defense Education Military Training D	0	2							2										
	00A01 Physical Education IV	2	2													2				
	00A02 Physical Education IV	2	2															2		
Total	Subtotal Required Course Credits	90																		
	At least Elective Course Credits	38																		
	Subtotal Professional Elective Course Credits	19																		
	Outside the department must admit Elective Course Credits	19																		
	Grand Total	128																		

Graduation Requirements：

1. In accordance with the General Provisions for Study, undergraduate students need to satisfactorily complete Service Learning, meet the university-wide basic competencies of English, Information Technology, Chinese, and Sports, and pass the core competencies of their department to be eligible for graduation.
2. Students need to complete at least 12 General Education course credits. General Education courses are divided into three areas: Humanities, Social Science, and Natural Science. Each area is divided into two subcategories: core and extended. Students need to take 1 two-credit course in both of the subcategories within each area to be eligible for graduation. Only 12 course credits will be counted toward graduation. Additional course credits earned in General Education courses are not counted toward graduation.

3.Course credits obtained from Education Program cannot be counted toward students' final grades.

4.General Biology, Programming Design I, Programming Design II, those are elective courses that the Department requires students to take. However, students will not be required to retake the courses if they fail them and this will not affect their eligibility for graduation.

5.The credits of interdisciplinary focused course program are not included in course structure diagram that can be regarded as the other department credits, with a maximum 19 credits.

6.As for retaking professional required courses, students are allowed to take courses from other departments under the conditions of the same course titles or contents, and approval by the department chair. The credits from those retaken courses can be counted toward students' final grades.

7.The newly added elective courses in this academic year can be applied retroactively to students who entered from 2018-19 academic year.