

2023年度生物医学工程学院专业课程教学大纲

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The immune participates is related to hur diagne i issed on the logic kn is e of this dis	system can d in the mainter man health. E bound from the bound of the mostition and e existing kno cover and t eases by vacc copline in the	isease defense system etect many pathogens nance of the normal f specially in the envir is sated and introduc d function of the imm wledge of senior high echnology in the prev ines and the immunot maintenance of hum other disciplines, whi	s, including viruse inctions of almo onment where ep bavancing oly use health. e the basic know une system, imm school students. rention, diagnosi herapy of tumor an health and the	es and bacteria, a st all tissues and pidemic diseases aps' aria counce, a ledge of immuno une diseases, im On this basis, w s and treatment s. Finally, the st characteristics	and distinguish th organs of the hu are raging around munuhology and ology and related munity and aging e will further disc of diseases, such udents will deeph of the intercent	em from hea man body an I the world ar innlunologies g, antibody te uss the appli- as the preven y understand	Ithy tissues. It d is closely at rechnology , including the , chnology, etc., , ation of infecti the important		
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<ol> <li>掌握电子电路分析、电路 析和排除、电子测量、测试的能 题的能力,实现电子、电气、信 程运用与实践的能力发展;(B' 2.从生物医学工程应用出发 分析能力,提高设计系统的能力 中的应用;(A5,B3)</li> <li>通过团队合作进行实验操 理想模型与实际电路、实际模型 型、简化模型来分析实际电路, 算能力开展优化、工程化处理。</li> <li>培养并养成良好的科学就 度,通过规范原始数据、完整记 量方法的培养,从测试、记录 中,实验方法和能力的培养; 好的科学实验的态度。(B)</li> </ol>	力, 从而要 1, B2) 1, B2) 1, 提理 1, 提理 1, 提理 1, 2) 7 4 7 4 7 4 7 4 7 4 7 4 7 4 7 4 7 4 7	高发现问题和解决问 求对于硬件电路的工 同电路方案进行对比 电路在生物医学领域 机电路中理想电路、 使之能够用理想模 上,利用计算机的运 D1) 的科学工作方法和态 、现象,开展中子评 、现合、死理全过程	测	

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	本门课是生物医学工程专业的专业基础课, 系统等课程后,进一步为学习专业知识打 堂练习、上机实验等多种方式,使学生建立 数字信号处理的基本分析方法和分析工具, 及相关数学方法、分析和解决生物医学工利 或缺的重要地位。主要教学内容包括时域语	2 "数字信号处 为培养和提升	理"的基本概念,掌握 学生利用信号处理以	
	description and system de digital signals; to present convolution; to analyze t to get the Z transform transform and their re the discrete-time signs linear convolution; to system properties acco	rsis of discrete-ti in the basic proce- learn basic skills signs. We will pr- and describe the 1 be spectrum char sector char series, of lattonships, to us ls, to do fast disc realize the digita ording to the zero LATLAB to pres		ant (LSI) signals and LSI mals y to present perform linear a digital system; discrete Fourier ranoform to analyze series and their is; to analyze the sign a digital
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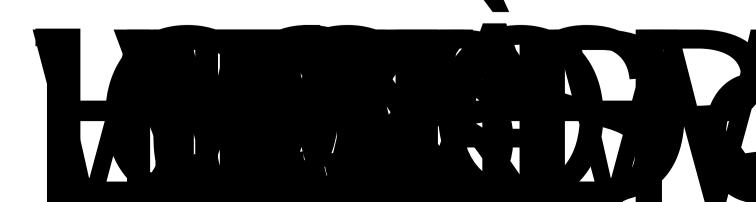

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	In this course, the findamental principles, best technologies, and related state-of-att progresses and clinical applications in Biophysics will be introduced. The basic concepts, methodologies and techniques in Biophysics and Biomedical Engineering will be emphasized. The key princip technologies, and progresses related with biology and medicine will also be highlighted. The latest research progresses in biology and medicine Biophysics (technologies) and techniques in Biophysics of Biophysics, physics on EM waves, the principles on the interactions between EM wave and biological samples, the biological and molecular physics, typical imaging technologies, and microscopy on molecules. Understandings and research ideas on Biophysics and related methods in biology and medicine are required at the end of this course. The interes on inter-discipline are expected to be developed. The students should finally get basic knowledge on Biophysics and some significant progresses on the practical applications in Biology and Medicine.									

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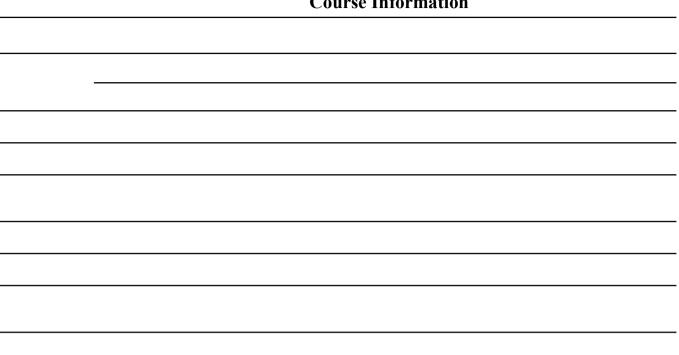
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undergraduate problems in t topics. Amor under the gui industry. Stud R&D project identifying au	e students. Stu he field of bio 1g them, resea dance of teacl lents are guide . The course to nd formulating	ng Senior Design cour idents work in an indi- omedical engineering. arch topics are propos hers; industrial topics ed by both the academ takes students through g a problem, analyzin act to the clinics and/	vidual or in a tear Specifically, it is eed by academic t are issued by ente tic teacher and in a all steps of bion g the problem, pr	m to solve real-u divided into res eachers, and stu erprises in the m dustrial instructo nedical engineeri	world, open-ende earch topics and dents carry out tl adical instrumen ors jointly in on- ing design, from	d industrial he design t going	

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能力 1.能 合后	、素质、价值 了解人工智能的 的前景; (A1	的基本方法,了解 l,A3,B1,B2,	人工智能的发展 B3,B4,C3,	展历程,了解/ D1,D3)	人工智能与相关	学科、应用	5V
2.能1	更用人工智能工	工具,构建针对实	际问题的解决了	<u> </u>	B3, B4, C2,	C3, C5)	

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Medical diag	nosis ł	as been not been as been as been as been as been as a been as		ll in the						
iopsy,		w imaging techno	- 40 C			et and big				
ential in lready	rep	nical diagnostics. presented by mol	oile phone	s, has enabled m	edical diagnosti	ics to move out o	of large diagn	ostic Íaborator		
and V	fu	come available u actional materials	; further ac	celerate innovat:	ion in related m	edical diagnostic	s. Personaliz	ed diagnosis a		
empitieni Trelated		ecision diagnosti Por <i>vas</i> neneselai.cl industries have	h; merpirat	new goals and c dornatosrotiona ted the attention	ofitor heennoise	y and the innov	ation and ent	eas me rapid ( repreneurship		
						to the basics and				
nosis and s; let satualler		students unders	tand the n	ew design softw	are, processes	scientific resear and methods and second	l experimenta	l techniques, a		
. actually course. Thro enables stude		ss   participate 1	teaching,	innovative pract	ice, case analys	sis, presentations	s and discuss	ions, this cour		
ation in biom ical engineerir	edical f		understand the fundamentals of medical diagnostic frontier technology and their app multi-dimensional manner, inspiring students' interest in medical diagnosis and biom the foundation for the current urgent need for cross-combination research talents.							
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