	( )	(*)	Course Title*	(*)	(*)							Course Description		
1	00160093		Introduction to Statistics: the Science and Art of Data Analysis		3	48					Statistics, 4th Edition, W. W. Norton. 2007. D. Freedman, R. Pisani, R. Purves. Statistics: The Art and Science of Learning From Data, 3rd Edition, Pearson Prentice Hall. 2012. A. Agresti and C. A. Franklin. Stats: Data and Models, 4th Edition, Pearson. 2015. R. D. De Veaux, P. F. Velleman, D. E. Bock.	“ ” “ ” “ ” “ ” R “ ” “ ” “ ” “ ” “ ”	This course develops from the mind in statistics, spreads to statistical methodology and cases with realization based on R, with goals of demonstrating corresponding application and influence in different aspects of the whole society. Following the introduction of history, we will introduce methods for collecting and summarizing data, techniques for statistical modeling and making statistical inferences, data science and its connections with statistics, and different advanced topics related to applications in different fields, such as biology, economy and industry.		

2	00740262		Industrial Data Mining and Analysis		2	32					[1] . , 2014 9 ,ISBN: 978-7-121-24295-3 [2] , , , 2013 7 . ISBN: 978-7-121-20486-9 [3] , , ,2016 7 . ISBN: 978-7-111-54372-5	2016 “ ” 2018 Top30 58			1 2 3 3 ( )
3	01510022														

										Application & Design (Third Edition). John Wiley & Sons, Inc. (1998) ISBN: 0-471-153		electronic instrument 7) Recent advances In the experiment of this course, students should design integrated detecting system for ECG, including ECG electrodes, amplifiers, filters, A/D, MCU, wireless transmission and PC programs.		
10	40160773		Reliability Data and Survival Analysis		3	48					1. David W. Hosmer, Stanley Lemeshow, "Applied Survival Analysis: Regression Modeling of Time to Event Data", New York, Wiley, 1999. 2. 2005.		This course introduces the student to the methodology, theory and application of survival analysis and reliability. Topics covered will include: an introduction to reliability data and survival models; nonparametric methods in survival analysis; proportional hazards model; parametric regression models; life testing and statistical inference under exponential distribution; reliability growth model and evaluation of system reliability.		
11	40240902		Artificial Intelligence Technology		2	32					Tom M.Mitchell	α-β	This course mainly introduces the general principles and basic ideas of problem solving approaches in artificial intelligence, including: the general searching problems, such as blind search and heuristic search; Adversarial search (or game search), such as game tree search, Monte Carlo tree search; Predicate calculus in artificial intelligence and its application; Advanced search, such as local search method, simulated annealing algorithm and genetic algorithm, local search method; Statistical learning methods, such as Naive Bayesian method, SVM, decision tree, neural network and deep learning etc.		

12	44030263	System and Computational Neuroscience	3	48

	01510022				
		2	(+)	32		32 / 0 / 32 (/ /)
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Course Description

This course for the industrial production of the connecting part (1), the course content comprehensive main industry category materials, chemical, energy, machinery, automobile, electronics, light industry and construction, and both agriculture and service industry, a positive start complete system of industrial system, open the student nutrition door from the Faculty of Engineering science and engineering. The open system of the course, the integration of engineering, economy, society, technology and industry cross compatible with the situation at home and abroad, combine the epistemology and methodology in engineering practice, ideological education and develop education in business, pay attention to the cultivation of students' thinking atmosphere, for the integration of different culture theory, the creation of new products and services lay a good foundation. The course uses classroom case teaching, field investigation and network cooperation to explore the teaching mode of three parallel lines to promote the teaching effect. Teachers' classroom case teaching is the leading factor, and students' cooperative inquiry learning is the main part of the course, and the practice of industry visiting is complementary. Attending class reading practice is closely linked with each other; training thinking communication is deepening step by step. Guide the students to listen to lectures with the attitude of discussion, take the classroom as the guide, and carry out the course content in reading, practice and cooperative inquiry.

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Course Description

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	01510162				
		2	(+)	64		16/48/32 (/ /)
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Course Description

Such sections are included in the course as the introduction, engineering fundamental training, comprehensive training leading by project and manufacturing system training. Through introduction

course section,students will understand the engineering manufacturing, engineering factors, engineering accomplishment, as well as the basic concept of engineering culture and its internal relationship. Through the fundamental engineering training course section, basic methods and skill of the engineering manufactring will be developed. Through training leading by project course section, students will deeply explore the manufacturing process. Student will experience engineering factors and engineering accomplishment through manufacturing system engineering training section, and will experience engineering cultural connotation on the basis of experience.

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	01510272				
		2	(+)	32		26 / 6 / 32 (/ /)

TRIZ

Course Description

This course mainly through teaching, discussion and experience a variety of teaching methods, such as to make the students to be familiar with the development of science and technology, to understand a variety of innovative thinking method, to grasp the method of technology innovation, finally understand technological innovation is a process of integration of the science, technology and economic. Firstly use teaching and discussing mode, make the students learn a variety of innovative ways, such as the Trial and Error testing, Brainstorming, etc., focus on TRIZ theory, which including engineering, separation principle, innovation principle, contradiction matrix, technical and physical contradictions, transformation and application, technology system evolution laws, etc. Secondly, using the practice teaching, make students understand and grasp that the technological innovation is a multi-stage decision process which including market demand, design implementation, problem solving, achievements and share.

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	11510023				
		3	(+)	54	39 / 15 / 100 (/ /)
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3

Course Description

The overall framework of this course identified as "engineering standard; overall thinking; economic and cultural perspective". The course uses industrial production as the carrier, the basic law of system science as the clue. The course constructs a systemthe through main industrial category and related engineering disciplines that helps students to contact the engineering practice and experience, to get the industrial arts and communication effect in a short period of time.

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		2	(+)	32		28/4/32 (/ /)
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Course Description

The course takes the industrial production process as the carrier, takes the system science basic law as the clue, launches the content, and intersect with the industry, the economy, the management,

the society and the humanities. Through the combination of theory and practice, the students can achieve the effect of contacting engineering practice and obtaining industrial experience, and help to sublimate engineering thinking and engineering methodology while learning industrial knowledge.

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Course Description

This course develops from the mind in statistics, spreads to statistical methodology and cases with realization based on R, with goals of demonstrating corresponding application and influence in different aspects of the whole society. Following the introduction of history, we will introduce methods for collecting and summarizing data, techniques for statistical modeling and making statistical inferences, data science and its connections with statistics, and different advanced topics related to applications in different fields, such as biology, economy and industry.

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	k-means					

	KM Cox					

	00740262				
		2	(+)	32	20 / 12 / 12 (/ /)

	40160773				
		3	(+)	48		48 / 0 / 21 (/ /)

Course Description

This course introduces the student to the methodology, theory and application of survival

analysis and reliability. Topics covered will include: an introduction to reliability data and survival models; nonparametric methods in survival analysis; proportional hazards model; parametric regression models; life testing and statistical inference under exponential distribution; reliability growth model and evaluation of system reliability.

	PL					
	Turnbull					
	Gehan-Wilcoxon Cox-Mantel Peto-Wilcoxon					
	Mantel-Haenszel					

	34030064				
		4	(+)	64		48 / 16 / 128 (/ /)

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Course Description

The main contents of this course includes: 1) Basic introduction of medical electronic instrument 2) Basic introduction of biomedical electrical signals (ECG, EEG, etc.) 3) Design of main modules of medical electronic instrument (amplification, filtering, A/D, etc.) 4) System design of medical electronic instrument (methods and interfaces) 5) Biomedical electrical stimulation 6) Safety standards and evaluation of medical electronic instrument 7) Recent advances In the experiment of this course, students should design integrated detecting system for ECG, including ECG electrodes, amplifiers, filters, A/D, MCU, wireless transmission and PC programs.

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	44030263				
		3	(+)	48		45 / 3 / 37 (/ /)

Course Description

Systems and computational neuroscience is a major branch of brain science, bridging the gap between molecular neuroscience and cognitive neuroscience, and laying the foundation for the development of applied technologies, such as brain computer interface, brain-like intelligence, neural modulation, neural rehabilitation, etc. The goal of systems and computational neuroscience is to understand the brain structure and functions at the level of neural circuit and network, to elucidate the neural substrates of human behavior and cognition, and to inspire the development of next generation of artificial intelligence. Systems and computational neuroscience integrates the approaches of experimentation, computation and theoretical modeling, for the understanding of sophisticated and challenging questions in brain science. This course will get you familiar with the basic research tools and technologies in the field, and guide you through the physiological basis, working principles and computational models of major brain functions, including vision, audition, tactile sensation, motor, language, memory and learning. Students will also be able to explore the inherent connections between these brain mechanisms and the current development of brain computer interface and artificial intelligence.

	Course introduction(neuroanatomy, organizations of the brain)					
	Experimental methods for neural imaging					
	Neural recording and spike train analysis					
	Psychophysics methods, correlations between neural activity and behavior					
	Visual					

	perception and periphery visual system					
	Central visual system and neural mechanisms for high-level vision					
	1 Neural Coding and Representation (1)					
	Auditory perception and the periphery auditory system					
	Central auditory processing					
	Tactile perception and the somatosensory system					
	2 Neural Coding and Representation (2)					
	Motor system					
	Brain-machine interface and neural prosthesis					
	Speech and language processing in human brain					
	Leaning and memory					