智能仿真建模技术 教学大纲

Simulation Modelling Subject Syllabus

一、课程信息 Subject Information

课程编号: Subject ID	3100313006	开课学期: Semester	4		
课程分类: Category	专业教育 PA	所属课群:	专业基础 MF		
课程学分: Credit Points	3.5	总学时/周: Total Hours/Weeks	56		
理论学时: LECT. Hours	50	实验学时: EXP. Hours	6		
PBL 学时: PBL Hours	0	实践学时/周: PRAC. Hours/Weeks	0		
开课学院: College	东北大学 悉尼智能科技学院	适用专业: Stream	应用统计学 AS		
课程属性: Pattern	必修 Compulsory	课程模式: Mode	引进 UTS		
中方课程协调人: NEU Coordinator	胡海娟 Haijuan Hu	成绩记载方式: Result Type	百分制 Marks		
先修课程: Requisites	概率论与随机变量 Probability and random variables				
英文参考教材: EN Textbooks	Rubinstein R and Kroese D, Simulation and the Monte Carlo Method, 3rd Edition, Wiley 2017. Grimmett G and Stirzaker D, Probability and Random Processes. 3rd Edition, Oxford 2001.				
中文参考教材: CN Textbooks	周永道, 贺平和宁建辉, 随机模拟的方法和应用, 高等教育出版社, 2021				
教学资源: Resources	https://lms.cloudcampu	https://lms.cloudcampus.com.cn/courses/38			
课程负责人(撰写人): Subject Director	胡海娟 提交日期: Haijuan Hu Submitted Date		单击或点击此处输 入日期。		
任课教师(含负责人): Taught by	胡海娟 Stephen Woodcock Haijuan Hu Stephen Woodcock				
审核人: Checked by	韩鹏	批准人: Approved by	史闻博		
批准日期: 单击或点击此处输 Approved Date 入日期。					

二、教学目标 Subject Learning Objectives (SLOs)

注: 毕业要求及指标点可参照悉尼学院本科生培养方案,可根据实际情况增减行数

Note: GA and index can be referred from undergraduate program in SSTC website. Please add/reduce lines based on subject.

Note: GA and index can be refe	rred from u	indergraduate program in SSTC website. Please add/reduce lines based on subject.		
整体目标:	之一。 松过稻 法包招 法。此 A basic c	《智能仿真建模技术》是应用统计学专业重要的专业基础课程本课程包括随机变量的生成、并用于模拟随机过程,包括泊程、随机游走和排队系统、计算数值积分。 所考虑的模拟方话接受-拒绝、重要性抽样、蒙特卡罗和 Metropolis-Hastings 算公外还介绍统计中的三大分布,参数估计,广义线性模型。pplied regression analysis is one of the important professional courses of students majoring in Statistics. This subject considers		
Overall Objective	process	neration of random variables and their use to simulate random ses including Poisson processes, random walks and queuing is, perform numerical integration, and solve difference equations.		
	The m	ethods of simulation considered include acceptance-rejection,		
	import	ance sampling, Monte Carlo, and the Metropolis-Hastings		
	algorit	hm. In addition, this subject also consider t-distribution,		
	Chi-Sq	uared distribution, F-distribution, Estimation, Generalised		
	linear	models.		
	1 1	仿真模拟简介		
	1-1	Introduction to simulation		
		常见离散型和连续型随机变量的模拟;		
	1-2	Simulation of common random variables		
	1-3	随机变量函数的分布		
		Distributions of functions of random variables		
	1-4	t 分布; 卡方分布; F 分布		
	1-4	t-distribution; Chi-Squared distribution; F-distribution		
(1) 专业目标:	1-5	弱大数定律		
Professional Ability		Weak law of large numbers		
	1-6	参数估计		
	1-0	Estimation		
	1.7	广义线性模型		
	1-7	Generalised linear models		
	1.0	生灭过程和排队模型		
	1-8	Birth-death processes/Queuing models		
	1.0	马氏链 Monte Carlo(MCMC)方法		
	1-9	Markov chain Monte Carlo (MCMC)		
		培养遵守法律、懂规则、守规则的新时代公民		
	2-1	Cultivate citizens of the new era who abide by the law,		
		understand and obey the rules		
(2) 德育目标:		了解主要矛盾和次要矛盾,在面对复杂问题的时候要实事求是、抓住主要矛盾		
Essential Quality	2-2	Understand the main contradiction and secondary		
		contradiction, seek truth from facts and grasp the main		
		contradiction in the face of complex problems		
	2-3	培养服务意识,具有"以人为本"的服务精神		
		I		

		Cultivate service consciousness and have the service spirit of		
		"people-oriented"		
2-4		培养具有不畏困难、不惧失败、锲而不舍而上的精神,并在学习过程中培养自己的约和精神 Cultivate the spirit of not fearing diffi	细心和耐心的勇气	
		perseverance, daring to try, and cultivate their own careful and		
		patient courage and spirit in the process of le		
	2-5	培养有条理和计划,做到心中有数、有条不紊、循序渐进地 完成一项工作 Cultivate a sense of order and plan, and complete a work in an orderly and gradual manner		
课程教学	学目标	与毕业要求的对应关系 Matrix of GA & SL	ıOs	
毕业要求 GA		指标点 GA Index	教学目标 SLOs	
1、理学知识: 具有扎实的数学基础,能够将数学、自然科学和专业知识用于解决复杂实际问题。		1-1: 具有较强的演绎推理能力、准确计算能力、分析归纳能力、抽象思维能力,掌握数学、自然科学和相关专业知识,并使用其建立正确的数学、物理学等模型以解释复杂实际问题; 1-2: 掌握统计调查、统计数据处理、统计分析、计算机与统计软件使用等应用统计学的基本理论、知识与方法,具备采集、处理、分析数据的能力,熟悉预研报告、可行性分析报告、研究方案等文档的撰写规范;	1-1 到 1-9	
2、问题分析:能够借助应用统计学的基本原理、方法和手段,识别、表达、并通过文献研究分析复杂实际问题,以获得有效结论。		2-1: 能够借助应用统计学的基本原理、 方法和手段,分析、识别、表达本专业 相关的复杂实际问题; 2-2: 能够借助应用统计学的基本原理、 方法和手段,针对复杂实际问题设计针 对性的方案,并综合运用文献、科学理 论和技术手段予以解决。	1-1 到 1-9	
11、项目管理与财务:理解 并掌握工程管理原理与经济 决策方法,并能在多学科环 境中应用。		11-1: 掌握基本的工程管理原理和经济决策方法,能对应用统计相关领域的新技术、新应用进行技术分析和比较;	1-1 到 1-9	

三、教学内容 Content (Topics)

注: 以中英文填写,各部分内容的表格可根据实际知识单元数量进行复制、扩展或缩减 Note: Filled in both CN and EN, extend or reduce based on the actual numbers of knowledge unit

(1) 理论教学 Lecture

境中应用。

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知识单元序号:	1		支撑教学目标:	1-1, 2-4
Knowledge Unit No.	1		SLOs Supported	1-1\ 2-4
知识单元名称	仿真模拟简介			
Unit Title	Introduction to	o simulat	ion	
知识点:	仿真模拟简介	<u> </u>		
Knowledge Delivery	A brief Introd	uction to	simulation	
		仿真模		
	了解:	Backgro	ound of simulations	
学习目标:	Recognize	仿真模	拟的应用	
Learning Objectives		The app	lications of simulations	
	理解:	仿真模	拟的目的	
	Understand	The aim	of simulations	
	培养具有不畏困难、不惧失败、锲而不舍、敢于尝试、迎难而上的			
	精神,并在学习过程中培养自己的细心和耐心的勇气和精神			
	Cultivate the spirit of not fearing difficulties or failure, perseverance,			
	daring to try, and cultivate their own careful and patient courage and			
德育目标	spirit in the process of learning			
Moral Objectives	培养服务意识,具有"以人为本"的服务精神			
Morai Objectives	Cultivate service consciousness and have the service spirit of			
	"people-orien	ted"		
	培养遵守法律	津、懂规!	则、守规则的新时代公民	1
	Cultivate citizens of the new era who abide by the law, understand and			
	obey the rules	<u> </u>		
重点:	仿真模拟的目的			
Key Points	The aim of simulation			
	杂支持机构 应用			
难点:				
Focal Points	The application	ons of sim	nulations	
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知识单元序号:	2		支撑教学目标:	1-2, 2-2	
Knowledge Unit No.	2	SLOs Supported	1-2, 2-2		
知识单元名称	常见离散型和	常见离散型和连续型随机变量的模拟			
Unit Title	Simulation of	common	random variables		
	贝努利分布、	二项分	布、几何分布的模拟		
知识点:	Simulation of Bernoulli, binomial and geometric variables				
Knowledge Delivery	指数分布、波松分布的模拟;				
	Simulation of exponential and Poisson random variables				
	理解:	贝努利分布、二项分布、几何分布的模拟			
		Simulation of Bernoulli, binomial and geometric			
兴 刁日标.		variable	S		
学习目标:	Understand	指数分布、波松分布的模拟;			
Learning Objectives		Simulat	ion of exponential and Po	isson random variables	
	掌握:	掌握: 贝努利分布、二项分布、几何分布的模拟			
	Master Simulation of Bernoulli, binomial and geometric				

	variables			
	指数分布、波松分布的模拟;			
	Simulation of exponential and Poisson random variables			
	了解主要矛盾和次要矛盾,在面对复杂问题的时候要实事求是、抓			
 徳育目标	住主要矛盾			
Moral Objectives	Understand the main contradiction and secondary contradiction, seek			
Wiorai Objectives	truth from facts and grasp the main contradiction in the face of			
	complex problems			
	贝努利分布、二项分布、几何分布的模拟			
重点:	Simulation of Bernoulli, binomial and geometric variables			
Key Points	指数分布、波松分布的模拟;			
	Simulation of exponential and Poisson random variables			
	贝努利分布、二项分布、几何分布的模拟			
难点:	Simulation of Bernoulli, binomial and geometric variables			
Focal points	指数分布、波松分布的模拟;			
	Simulation of exponential and Poisson random variables			

知识单元序号:			支撑教学目标:	
Knowledge Unit No.	3		SLOs Supported	1-3, 2-5
知识单元名称	随机变量函数	随机变量函数的分布		
Unit Title	Distributions	of function	ons of random variables	
	多维变量分布			
知识点:	Multivariate d	listributio	ns	
Knowledge Delivery	随机变量函数	数的分布		
	Distributions	of functio	ons of random variables	
	了解:	了解: 多维变量分布		
	Recognize	Multiva	riate distributions	
学习目标:	理解:	理解: 随机变量函数的分布		
Learning Objectives	Understand Distributions of functions of random variables			
	掌握: 随机变量函数的分布			
	Master Distributions of functions of random variables			
	培养有条理和计划,做到心中有数、有条不紊、循序渐进地完成一			
德育目标	项工作			
Moral Objectives	Cultivate a sense of order and plan, and complete a work in an orderly			
	and gradual manner			
重点:	随机变量函数的分布			
Key Points	Distributions of functions of random variables			
难点:	随机变量函数的分布			
Focal points	Distributions	of function	ons of random variables	

知识单元序号:		支撑教学目标:	1-4, 2-3		
Knowledge Unit No.	4	SLOs Supported	1-4, 2-3		
知识单元名称	t 分布、卡方分布和 F 分布				
Unit Title	t-distribution, Chi-Squa	t-distribution, Chi-Squared distribution and F-distribution			

知识点: Knowledge Delivery	t 分布 t-distribution 卡方分布 Chi-Squared o F 分布 F-distribution			
学习目标: Learning Objectives	理解: Understand 掌握: Master	三个分布的构成 Construction of t-distribution, Chi-Squared distribution and F-distribution 三个分布的构成 Construction of t-distribution, Chi-Squared distribution and F-distribution		
德育目标 Moral Objectives	培养服务意识,具有"以人为本"的服务精神 Cultivate service consciousness and have the service spirit of "people-oriented"			
重点: Key Points	三个分布的构成 Construction of t-distribution, Chi-Squared distribution and F-distribution			
难点: Focal points	三个分布的构成 Construction of t-distribution, Chi-Squared distribution and F-distribution			

知识单元序号:	5		支撑教学目标:	1-5, 2-3		
Knowledge Unit No.	3		SLOs Supported	1-3, 2-3		
知识单元名称	弱大数定律					
Unit Title	Weak law of l	Weak law of large numbers				
	弱大数定律					
	Weak law of l	large num	bers			
知识点:	Markov 和 Ch	nebyshev	不等式			
Knowledge Delivery	Markov and C	Chebyshev	inequalities			
	Monte Carlo	Monte Carlo 方法计算定积分				
	Monte Carlo	Monte Carlo method for definite integrals				
		弱大数	定律			
	了解: Weak law of large numbers					
	Recognize	Markov	和 Chebyshev 不等式			
学习目标:		Markov	and Chebyshev inequalities	1		
Learning Objectives	理解:	Monte C	Carlo 方法计算定积分			
	Understand	Monte C	Carlo method for definite int	egrals		
	掌握:	Monte C	Carlo 方法计算定积分			
	Master	Monte C	Carlo method for definite int	egrals		
	培养服务意识,具有"以人为本"的服务精神					
	Cultivate service consciousness and have the service spirit of					
Moral Objectives	"people-oriented"					

重点:	Monte Carlo 方法计算定积分
Key Points	Monte Carlo method for definite integrals
难点:	Monte Carlo 方法计算定积分
Focal points	Monte Carlo method for definite integrals

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知识单元序号:	6		支撑教学目标:	1-6, 2-5		
Knowledge Unit No.	O O		SLOs Supported	1 0, 2 3		
知识单元名称	参数估计	参数估计				
Unit Title	Estimation	Estimation				
	矩估计和最大似然估计					
	Method of moments;					
	Maximum likelihood estimation					
	线性回归					
	Linear regress	sion				
知识点:	最小二乘估计	+				
Knowledge Delivery	Least squares	estimatio	n			
Knowledge Denvery	置信区间					
	Confidence in	itervals;				
	预测区间					
	Prediction int	ervals;				
	偏差					
	Bias					
		预测区	间			
	了解: Recognize		on intervals;			
		偏差				
		Bias				
		最小二				
学习目标:	理解:	Least squares estimation				
Learning Objectives	Understand	置信区				
		Confidence intervals;				
			和最大似然估计			
	掌握:	Method of moments;				
	Master		ım likelihood estimation			
		线性回				
		l .	egression			
		旧计划,有	故到心中有数、有条不紊、征	首序渐进地完成一		
德育目标	项工作					
Moral Objectives	Cultivate a sense of order and plan, and complete a work in an orderly					
	and gradual m		N1			
	矩估计和最为		rt			
重点:	Method of mo					
Key Points	Maximum lik	elihood e	stimation			
_	线性回归					
	Linear regress	S10n				

难点:	矩估计和最大似然估计
Focal points	Method of moments and Maximum likelihood estimation

知识单元序号:	7		支撑教学目标:	1-7, 2-1			
Knowledge Unit No.	,		SLOs Supported	1,, 21			
知识单元名称	广义线性模型	广义线性模型					
Unit Title	Generalised li	near mod	els				
	广义线性模型	궽					
知识点:	Generalised li	near mod	els				
Knowledge Delivery	指数族						
	Exponential fa	amily					
		广义线性模型					
	理解:	理解: Generalised linear models					
	Understand	d 指数族					
学习目标:		Exponential family					
Learning Objectives		广义线性模型					
	掌握:	General	ised linear models				
	Master	指数族					
		Exponer	ntial family				
	培养遵守法律	‡、懂规!	则、守规则的新时代公民				
Moral Objectives	Cultivate citiz	ens of the	e new era who abide by the	law, understand and			
Worar Objectives	obey the rules						
重点:	指数族						
Key Points	Exponential family						
难点:	广义线性模型						
Focal points	Generalised linear models						

知识单元序号:	8		支撑教学目标:	1-8, 2-5			
Knowledge Unit No.	o		SLOs Supported	1-8, 2-3			
知识单元名称	生灭过程和排	生灭过程和排队模型					
Unit Title	Birth-death pr	ocesses a	and queuing models				
	生灭过程						
知识点:	Birth-death pr	ocesses					
Knowledge Delivery	排队模型	排队模型					
	Queuing mode	Queuing models					
	生灭过程						
 学习目标:	理解:	Birth-death processes					
Learning Objectives	Understand	排队模	型				
	Queuing models						
	培养有条理和计划,做到心中有数、有条不紊、循序渐进地完成一						
德育目标	项工作						
Moral Objectives	Cultivate a sense of order and plan, and complete a work in an orderly						
	and gradual m	nanner					

重点:	生灭过程
Key Points	Birth-death processes
难点:	排队模型
Focal points	Queuing models

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知识单元序号:	9		支撑教学目标:	1-9, 2-5		
Knowledge Unit No.	7 The		SLOs Supported			
知识单元名称		马氏链 Monte Carlo(MCMC)方法				
Unit Title		Markov chain Monte Carlo (MCMC)				
	马氏链 Monte Carlo(MCMC)方法					
	Markov chain	Monte C	arlo (MCMC)			
	Metropolis-Ha	astings 方	法			
知识点:	Metropolis-Ha	astings al	gorithm			
Knowledge Delivery	MCMC 诊断					
	MCMC Diagr	nostics				
	贝叶斯推断和共轭先验					
	Bayesian inference and conjugate priors					
	了解:	MCMC 诊断				
	Recognize	MCMC Diagnostics				
		马氏链 Monte Carlo(MCMC)方法				
	理解:	R: Markov chain Monte Carlo (MCMC)				
学习目标:	Understand	Metropo	olis-Hastings 方法			
Learning Objectives		Metropo	olis-Hastings algorithm			
		Metropolis-Hastings 方法				
	掌握:					
	Master	贝叶斯	推断和共轭先验			
		Bayesia	n inference and conjugate price	ors		
	培养有条理和	•	故到心中有数、有条不紊 、 很			
德育目标	项工作					
Moral Objectives	Cultivate a se	nse of or	der and plan, and complete a	work in an orderly		
	and gradual manner					
重点:	马氏链 Monte		ICMC)方法			
Key Points	Markov chain Monte Carlo (MCMC)					
难点:	贝叶斯推断和共轭先验					
Focal points	Bayesian inference and conjugate priors					
1 / Jacobs I and						

(2) 实验教学 Experiments

注: 可根据实际情况增减行数。实验类型可分为验证性、设计性、综合性,实验性质可分为选做、必做。

Note: Please add/reduce lines based on subject. The Type contains Verify, Design, and Comprehensive, while the Pattern contains Required and Elective

序号	实验项目名称	学时	每组人数	实验类型	实验性质
No.	Experiment Topic	Hours	MPG*	Type	Pattern

1	离散事件、离散型变量、连续型随机变量模拟 Discrete event and discrete variable simulation;Simulation of continuous random variables	2	1	验证性 Verify	必做 Elec
2	Monte Carlo 方法计算定积分 Monte Carlo method for definite integrals	2	1	验证性 Verify	必做 Elec
3	马氏 Monte Carlo(MCMC)方法; Metropolis-Hastings 方法 Markov chain Monte Carlo (MCMC) ; Metropolis-Hastings algorithm	2	1	验证性 Verify	必做 Elec
	总计 Total	6			

*MPG: Members per group

实验项目序号:	1	支撑教学目标:	1-2			
Experiment No.	1	SLOs Supported	1-2			
每组成员:	1	指导教师:	胡海娟			
Members per Group	1	Tutor	Haijuan Hu			
实验名称:	常见随机变量模拟					
Experiment Title	Simulation of common	random variables				
」 实验内容:	离散事件、离散型变量	量、连续型随机变量模	拟			
天狐內谷. Content	Discrete event and disc	rete variable simulation a	and simulation of			
Content	continuous random var	continuous random variables				
学习目标:	掌握常见随机变量的模拟方法					
Learning Objectives	Master the method of Simulation of common random variables					
教学要求: Requirements	会模拟常见的随机变量。 Know how to simulate common random variables					
实验场地:	实验室/机房 (科技楼 5082)					
Location	Computer room 5082					
实验软硬件设备:	计算机					
Software/Hardware	Computer					

实验项目序号:	2	支撑教学目标:	1-5			
Experiment No.	2	SLOs Supported	1.5			
每组成员:	1	指导教师:	胡海娟			
Members per Group	1	Tutor	Haijuan Hu			
实验名称:	Monte Carlo 方法计算定积分					
Experiment Title	Monte Carlo method for definite integrals					
实验内容: Content	用 Monte Carlo 方法计算定积分 Monte Carlo method for definite integrals					

学习目标:	会用 Monte Carlo 方法计算定积分				
Learning Objectives	Master Monte Carlo method for definite integrals				
教学要求: Requirements					
实验场地:	实验室/机房 (科技楼 5082)				
Location	Computer room 5082				
实验软硬件设备:	计算机				
Software/Hardware	Computer				

实验项目序号:	3	支撑教学目标:	1-9		
Experiment No.	3	SLOs Supported	1-9		
每组成员:	1	指导教师:	胡海娟		
Members per Group	1	Tutor	Haijuan Hu		
」 实验名称:	马氏 Monte Carlo(MC	MC)法和 Metropolis-Ha	stings 方法		
Experiment Title	Markov chain Monte C	Carlo (MCMC) and Metro	polis-Hastings		
Experiment Title	algorithm				
实验内容:	用 Metropolis-Hastings 方法解决应用问题				
Content	Solve problems using Metropolis-Hastings algorithm				
学习目标:	会用 Metropolis-Hastings 方法解决应用问题				
Learning Objectives	Solve problems using Metropolis-Hastings algorithm				
教学要求:	会用 Metropolis-Hastii	ngs 方法解决应用问题			
Requirements	Solve problems using N	Metropolis-Hastings algor	rithm		
实验场地:	实验室/机房 (科技楼 5082)				
Location	Computer room 5082				
实验软硬件设备:	计算机				
Software/Hardware	Computer				

四、教学安排 Teaching Schedule

注: 可根据实际情况增减行数

Note: Please add/reduce lines based on subject.

	学时(周) Hour(Week)			
教学内容 Teaching Content	理论	实验	课外实践	集中实践
	LECT.	EXP.	PBL	PRAC.
仿真模拟简介 Introduction to simulation		0		
常见离散型和连续型随机变量的模拟;		2		
Simulation of common random variables		2		
随机变量函数的分布		0		

Distributions of functions of random variables			
t 分布; 卡方分布; F 分布			
t-distribution; Chi-Squared distribution;	4	0	
F-distribution			
弱大数定律	4	2	
Weak law of large numbers	4	2	
参数估计	12	0	
Estimation	12	0	
广义线性模型	6	0	
Generalised linear models	6		
生灭过程和排队模型		0	
Birth-death processes/Queuing models	4		
氏链 Monte Carlo(MCMC)方法		2	
Markov chain Monte Carlo (MCMC)	0	2	
总计 Total	50	6	

五、教学方法 Teaching Methodology

注: 可根据实际情况增减行数或修改内容

Note: Please add/reduce lines or revise content based on subject.

勾选 Check	教学方法与特色 Teaching Methodology & Characters
M	多媒体教学:基于信息化设备的课堂教学
	Multi-media-based lecturing
M	实践能力传授: 理论与行业、实际案例相结合
<u> </u>	Combining theory with industrial practical problems
V	课程思政建设:知识讲授与德育相结合
	Knowledge delivery with ethic education
	PBL 教学:问题驱动的分组学习与交流
	Problem-based learning
	其他:单击或点击此处输入文字。
	Other:单击或点击此处输入文字。

六、成绩评定 Assessment

注: 可根据实际情况增减行数或修改内容

Note: Please add/reduce lines or revise content based on subject.

考核环节:	半时 Behavior	环节负责人:	胡海娟
Assessment Content		Director	Haijuan Hu
给分形式:	百分制 Marks	课程总成绩比重(%):	40
Result Type	自分型 Marks	Percentage (%)	40
考核方式:	满分 100 分,使用"学习通"进行。出勤,50分;作业,50分。		
Measures	The full score is 100 points. Students' usual classroom performance is		

recorded by "XueXiTong". 5 points are counted for each attendance,
and no score is given for absence. And 5 points are counted for each
assignment, no score for plagiarism, plagiarism for others or no
assignment. The final total score is not more than 100 points, not less
than 0 points

考核环节:	实验 Experiment	环节负责人:	胡海娟
Assessment Content	头独 Experiment	Director	Haijuan Hu
给分形式:	百分制 Marks	课程总成绩比重(%):	10
Result Type	自分型 Walks	Percentage (%)	10
	满分 100 分, 共 3 次上机实验课, 共需要提交两个报告, 每次报告		
考核方式:	50分。		
一	The full score is 100 points. There are 3 computer experiment classes I		
	in total. Two reports are needed to be submitted, with 50 points for		
	each report.		

考核环节:	期末 Final	环节负责人:	胡海娟
Assessment Content	州水 Fillal	Director	Haijuan Hu
给分形式:	百分制 Marks	课程总成绩比重(%):	50
Result Type	日分市 Warks	Percentage (%)	30
考核方式:	满分 100 分,通过批阅期末考试试卷给出学生成绩。 The full score is 100, and the students' scores are given by marking the		
Measures			
ivieasures	final examination papers.		

七、改进机制 Improvement Mechanism

注: 未尽事宜以教学团队以及学院教学指导委员会商定为准。

Note: Matters not covered in this file shall be determined by TAB of SSTC, NEU.

教学大纲改进机制 Subject Syllabus Improvement Mechanism			
考核周期(年):	4	修订周期(年):	4
Check Period (YR)	4	Revise Period (YR)	4
	并修改教学大纲,报	教学内容与人才培养目 分管教学工作副院长审	核后由执行院长批准。
改进措施:	The subject coordinator	r shall be responsible for	the syllabus discussion
Measures	and improvement, and the revised version shall be submitted to deputy		
	dean (teaching affairs) for reviewing then to executive dean for approval		
成绩评定改进机制 Assessment Improvement Mechanism			
考核周期(年):	1	修订周期(年):	1
Check Period (YR)	1	Revise Period (YR)	1
改进措施:	课程负责人根据课程教学内容、课堂教学效果以及成绩分布,对课		
Measures	程教学方法和成绩评定环节进行改进,并同步优化评定办法。		

The subject coordinator shall revise the syllabus based on the teaching
content, effect and result distribution while optimize the assessment
measures.