智能数据分析导论 **课程教学大纲**

Introduction to Data Analytics **Subject Syllabus**

一、课程信息 Subject Information

课程编号: Subject ID	3100212002	开课学期: Semester	1
课程分类: Category	专业教育 PA	所属课群: Section	专业基础 MF
课程学分: Credit Points	1	总学时/周: Total Hours/Weeks	16
理论学时: LECT. Hours	16	实验学时: EXP. Hours	0
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	CST/AS
课程属性: Pattern	必修 Compulsory	课程模式: Mode	互认 EQV
课程协调人: Coordinator	史闻博	成绩记载方式: Result Type	百分制 Marks
先修课程: Requisites	无 None		
英文参考教材: EN Textbooks	1. Glenn Brookshear, Dennis Brylow, Computer Science: An Overview, 13th Edition, 人民邮电出版社,2020		
中文参考教材: CN Textbooks	1. Glenn Brookshear, Dennis Brylow，计算机科学概论，第 12 版，人民邮电出版社,2019 2. 佛罗赞，计算机科学导论，第 4 版，机械工业出版社，2020		
教学资源: Resources	教材、课件 Textbook, Presentation slides		
课程负责人(撰写人): Subject Director	史闻博	提交日期: Submitted Date	单击或点击此处输入日期。
任课教师(含负责人): Taught by	史闻博		
审核人: Checked by	韩鹏	批准人: Approved by	史闻博
		批准日期: Approved Date	单击或点击此处输入日期。

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.

整体目标: Overall Objective	随着数据分析工作越来越重要，它未来在人工智能和大数据产业所带来的效益也会越来越显著。本课程讲述有关数据基础知识和数据整理、分析、挖掘，并依据数据分析与挖掘结果做出研究、评估和决策，是人工智能的导论课程，为学习机器学习、深度学习等知识打好必要的技术基础。 As data analysis becomes more and more important, it will bring more and more significant benefits in artificial intelligence and big data industry in the future. This course is about the basic knowledge of data and data collation, analysis and mining, and makes research, evaluation and decision based on the results of data analysis and mining. It is an introduction course of artificial intelligence and lays a necessary technical foundation for learning machine learning and deep learning.	
（1）专业目标: Professional Ability	1-1	具有扎实的专业基础与学科特长，系统掌握统计与数据分析、智能仿真建模技术及其相关领域专门知识与技能。 Have a solid professional foundation and subject expertise, systematically master statistics and data analysis, intelligent simulation modeling technology and related fields of expertise and skills.
	1-2	具有扎实的专业基础与学科特长，系统掌握信息通信系统、项目管理与决策及其相关领域专门知识与技能。 Have a solid professional foundation and subject expertise, systematically master the information and communication system, project management and decision-making and related fields of expertise and skills.
	1-3	具有扎实的专业基础与学科特长，系统掌握大数据与人工智能系统、项目管理与决策及其相关领域专门知识与技能。 Have a solid professional foundation and discipline expertise, systematically master the expertise and skills of big data and artificial intelligence system, project management and decision-making and related fields.
	1-4	掌握有关计算机科学相关知识领域的基本概念、基本现象、基本规律和基本方法，并建立应用计算机技术解决实际问题的能力，为学习后续课程打下基础。 Master the basic concepts, basic phenomena, basic laws and basic methods in the field of computer science related knowledge, and establish the ability to solve practical problems by applying computer technology, so as to lay a foundation for learning the follow-up courses.
	1-5	在建立计算机科学相关知识领域基础知识体系的同时，通过科学思维方法的训练，培养学生运用科学原理解决实际问题的工程能力，为将来从事计算机设计及研发奠定必要

		的基础。 While establishing the basic knowledge system of computer science related knowledge field, through the training of scientific thinking method, students' engineering ability of solving practical problems by using scientific principles is cultivated, which lays a necessary foundation for future computer design and development.
	1-6	培养科学与工程应用的意识和素质，逐步培养学生的探索精神和创新能力。 Cultivate the consciousness and quality of science and engineering application, and gradually cultivate students' exploration spirit and innovation ability.
（2）德育目标: Essential Quality	2-1	具有良好的团队合作能力、项目管理能力与领导力，通晓本专业相关的法律法规与职业规范，具有优异的创新精神和终身学习能力，学习与运用新技术的能力突出，能够适应持续的环境变化与技术变革。 Have good team cooperation ability, project management ability and leadership, be familiar with the relevant laws and regulations and professional norms of the major, have excellent innovation spirit and lifelong learning ability, have outstanding ability to learn and use new technology, and be able to adapt to continuous environmental changes and technological changes.
	2-2	具备优异的国际化发展能力，通晓世界形势与时代发展规律，深刻认识中国的国际战略构想与举措，具备在全英语、跨文化环境下开展学习、研究、实践的能力，具务迎接未来国际化挑战的坚定信心。 has excellent international development ability, is familiar with the world situation and the development law of the times, has a profound understanding of China's international strategic ideas and measures, has the ability to carry out learning, research and practice in the English language and cross-cultural environment, and has the firm confidence to meet the future international challenges.
	2-3	了解数据结构及数据库对国家数据安全存储及应用的重要性，为各行各业大数据安全存储和应用创造更多价值。 Understand the importance of data structure and database for the safe storage and application of national data, and create more value for the safe storage and application of big data in all walks of life.
	2-4	了解计算理论关键问题，提出高适用性的优化算法，推动先进科学技术的发展。 Understand the key problems of computing theory, propose high applicability optimization algorithm, and promote the

		development of advanced science and technology.

课程教学目标与毕业要求的对应关系 Matrix of GA & SLOs		
毕业要求 GA	指标点 GA Index	教学目标 SLOs
工程知识：能够将数学、自然科学、工程基础和专业知识用于解决复杂工程问题。	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	1-1,1-2,1-3,1-4,2-1,2-3,2-4
问题分析：能够应用数学、自然科学和工程科学的基本原理、方法和手段，识别、表达、并通过文献研究分析复杂工程问题，以获得有效结论。	2-1 能够应用数学、自然科学和工程学的基本原理、方法和手段，分析、识别、表达本专业相关的复杂工程问题	1-5,1-6,2-1,2-3,2-4
	2-2 能够应用数学、自然科学和工程学的基本原理、方法和手段，针对实际复杂工程问题设计针对性的技术方案，并综合运用文献、科学基座和技术手段予以解决	1-5,1-6,2-2, 2-3,2-4

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

知识单元序号: Knowledge Unit No.	1	支撑教学目标: SLOs Supported	1-1，1-4，1-5, 1-6
知识单元名称 Unit Title	绪论 Introduction 数据存储 Data Storage		
知识点: Knowledge Delivery	算法的作用 The Role of Algorithms		
	计算机器的由来 The History of Computing		
	学习大纲 An Outline of Our Study		
	计算机科学的首要主题 The Overarching Themes of Computer Science		
	位和位存储 Bits and Their Storage		
	主存储器 Main Memory		
	海量存储器 Mass Storage		

	用位模式表示信息 Representing Information as Bit Patterns	
	二进制系统 The Binary System	
	整数的存储 Storing Integers	
	小数的存储 Storing Fractions	
	数据压缩 Data Compression	
学习目标: Learning Objectives	了解: Recognize	算法的作用，计算机器的由来, 磁系统，光系统，闪存驱动器，图像压缩，音频和视频压缩 The Role of Algorithms, The History of Computing, Magnetic Systems, Optical Systems, Flash Drives, Compressing Images, Compressing Audio and Video
	理解: Understand	图像的表示，声音的表示，二进制中的小数，二进制补码计数法，二进制补码的加法，溢出的问题，余码计数法，浮点记数法，截断误差，通用的数据压缩技术 Representing Images, Representing Sound, Fractions in Binary, Two's Complement Notation, Addition in Two's Complement Notation, The Problem of Overflow, Excess Notation, Floating-Point Notation, Truncation Errors, Generic Data Compression Techniques
	掌握: Master	布尔运算，门和触发器，十六进制记数法，存储器结构，存储器容量的度量，文本的表示，数值的表示，二进制记数法 Boolean Operations, Gates and Flip-Flops, Hexadecimal Notation, Memory Organization, Measuring Memory Capacity, Representing Text, Representing Numeric Values, Binary Notation
德育目标 Moral Objectives	具有良好的团队合作能力、项目管理能力与领导力，通晓本专业相关的法律法规与职业规范，具有优异的创新精神和终身学习能力，学习与运用新技术的能力突出，能够适应持续的环境变化与技术变革。 Have good team cooperation ability, project management ability and leadership, be familiar with the relevant laws and regulations and professional norms of the major, have excellent innovation spirit and lifelong learning ability, have outstanding ability to learn and use new technology, and be able to adapt to continuous environmental changes and technological changes. 具备优异的国际化发展能力，通晓世界形势与时代发展规律，深刻认识中国的国际战略构想与举措，具备在全英语、跨文化环境下开展学习、研究、实践的能力，具务迎接未来国际化挑战的坚定信心。 has excellent international development ability, is familiar with the world situation and the development law of the times, has a profound understanding of China's international strategic ideas and measures, has the ability to carry out learning, research and practice in the English	

	language and cross-cultural environment, and has the firm confidence to meet the future international challenges. 了解计算理论关键问题，提出高适用性的优化算法，推动先进科学技术的发展。 Understand the key problems of computing theory, propose high applicability optimization algorithm, and promote the development of advanced science and technology.
重点: Key Points	布尔运算，门和触发器，十六进制记数法，存储器结构，数值的表示，二进制记数法 Boolean Operations, Gates and Flip-Flops, Hexadecimal Notation, Memory Organization, Representing Numeric Values, Binary Notation
难点: Focal points	二进制补码计数法，二进制补码的加法，溢出的问题，余码计数法 Two's Complement Notation, Addition in Two's Complement Notation, The Problem of Overflow, Excess Notation

知识单元序号: Knowledge Unit No.	2	支撑教学目标: SLOs Supported	1-1，1-4，1-5, 1-6
知识单元名称 Unit Title	数据操控 Data Manipulation		
知识点: Knowledge Delivery	计算机体系结构 Computer Architecture		
	机器语言 Machine Language		
	程序执行 Program Execution		
	算术/逻辑指令 Arithmetic/Logic Instructions		
	与其他设备通信 Communicating with Other Devices		
	其他体系结构 Other Architectures		
学习目标: Learning Objectives	了解: Recognize	流行的通信媒介，通信速率，流水线，多处理器机器 Popular Communication Media, Communication Rates, Pipelining, Multiprocessor Machines	
	理解: Understand	控制器的作用，直接存储器存取，握手 The Role of Controllers, Direct Memory Access, Handshaking	
	掌握: Master	CPU 基础知识，存储程序的概念，指令系统，数据传输，算术/逻辑，控制，程序执行，程序与数据，逻辑运算，循环移位运算及移位运算，算术运算 CPU Basics, The Stored-Program Concept, The Instruction Repertoire, Data Transfer, Arithmetic/Logic, Control, Program Execution, Programs Versus Data, Logic Operations, Rotation and Shift Operations, Arithmetic Operations	
德育目标 Moral Objectives	具有良好的团队合作能力、项目管理能力与领导力，通晓本专业相关的法律法规与职业规范，具有优异的创新精神和终身学习能力，学习与运用新技术的能力突出，能够适应持续的环境变化与技术变革。 Have good team cooperation ability, project management ability and		

	leadership, be familiar with the relevant laws and regulations and professional norms of the major, have excellent innovation spirit and lifelong learning ability, have outstanding ability to learn and use new technology, and be able to adapt to continuous environmental changes and technological changes. 具备优异的国际化发展能力，通晓世界形势与时代发展规律，深刻认识中国的国际战略构想与举措，具备在全英语、跨文化环境下开展学习、研究、实践的能力，具务迎接未来国际化挑战的坚定信心。 has excellent international development ability, is familiar with the world situation and the development law of the times, has a profound understanding of China's international strategic ideas and measures, has the ability to carry out learning, research and practice in the English language and cross-cultural environment, and has the firm confidence to meet the future international challenges. 了解计算理论关键问题，提出高适用性的优化算法，推动先进科学技术的发展。 Understand the key problems of computing theory, propose high applicability optimization algorithm, and promote the development of advanced science and technology.
重点: Key Points	CPU 基础知识，存储程序的概念，指令系统，程序执行，程序与数据，逻辑运算，算术运算 CPU Basics, The Stored-Program Concept, The Instruction Repertoire, Program Execution, Programs Versus Data, Logic Operations, Arithmetic Operations
难点: Focal points	直接存储器存取，握手，流水线，多处理器机器 Direct Memory Access, Handshaking, Pipelining, Multiprocessor Machines

知识单元序号: Knowledge Unit No.	3	支撑教学目标: SLOs Supported	1-1，1-4，1-5, 1-6
知识单元名称 Unit Title	操作系统 Operating Systems		
知识点: Knowledge Delivery	操作系统的历史 The History of Operating Systems		
	操作系统的体系结构 Operating System Architecture		
	协调机器的活动 Coordinating the Machine’s Activities		
	处理进程间的竞争 Handling Competition Among Processes		
	安全性 Security		
学习目标: Learning Objectives	了解: Recognize	操作系统的历史，来自外部的攻击，来自内部的攻击 The History of Operating Systems, Attacks from the Outside, Attacks from Within	
	理解: Understand	软件概述，操作系统的组成部分，系统启动，进程管理 Software Survey, Components of an Operating System, Getting It Started, Process Administration	

	掌握: Master	进程的概念，信号量，死锁 The Concept of a Process, Semaphores, Deadlock
德育目标 Moral Objectives	具有良好的团队合作能力、项目管理能力与领导力，通晓本专业相关的法律法规与职业规范，具有优异的创新精神和终身学习能力，学习与运用新技术的能力突出，能够适应持续的环境变化与技术变革。 Have good team cooperation ability, project management ability and leadership, be familiar with the relevant laws and regulations and professional norms of the major, have excellent innovation spirit and lifelong learning ability, have outstanding ability to learn and use new technology, and be able to adapt to continuous environmental changes and technological changes. 具备优异的国际化发展能力，通晓世界形势与时代发展规律，深刻认识中国的国际战略构想与举措，具备在全英语、跨文化环境下开展学习、研究、实践的能力，具务迎接未来国际化挑战的坚定信心。 has excellent international development ability, is familiar with the world situation and the development law of the times, has a profound understanding of China's international strategic ideas and measures, has the ability to carry out learning, research and practice in the English language and cross-cultural environment, and has the firm confidence to meet the future international challenges. 了解计算理论关键问题，提出高适用性的优化算法，推动先进科学技术的发展。 Understand the key problems of computing theory, propose high applicability optimization algorithm, and promote the development of advanced science and technology.	
重点: Key Points	进程的概念，信号量，死锁 The Concept of a Process, Semaphores, Deadlock	
难点: Focal points	进程管理，来自外部的攻击，来自内部的攻击 Process Administration, Attacks from the Outside, Attacks from Within	

知识单元序号: Knowledge Unit No.	4	支撑教学目标: SLOs Supported	1-2，1-4，1-6
知识单元名称 Unit Title	组网及因特网 Networks and The Internet		
知识点: Knowledge Delivery	网络基础 Network Fundamentals		
	因特网 The Internet		
	万维网		

	The World Wide Web	
	安全性 Security	
学习目标: Learning Objectives	了解: Recognize	网络分类，TCP/IP 协议簇，因特网应用，万维网，网络安全 Network Classifications， The TCP/IP Protocol Suite， Internet Applications，TheWorld Wide Web，NetworkSecurity
	理解: Understand	协议，进程间的通信方法，入侵的形式, 超文本标记语言 Protocols，Methodsof Process Communication，Forms of Attack, HTML
	掌握: Master	因特网体系结构，因特网编址，客户端和服务器端的活动，网络安全防护与对策 Internet Architecture，InternetAddressing，Client-Side and Server-Side Activities, Network Security Protectionand Cures Encryption
德育目标 Moral Objectives	具备优异的国际化发展能力，通晓世界形势与时代发展规律，深刻认识中国的国际战略构想与举措，具备在全英语、跨文化环境下开展学习、研究、实践的能力，具务迎接未来国际化挑战的坚定信心。 has excellent international development ability, is familiar with the world situation and the development law of the times, has a profound understanding of China's international strategic ideas and measures, has the ability to carry out learning, research and practice in the English language and cross-cultural environment, and has the firm confidence to meet the future international challenges. 了解数据结构及数据库对国家数据安全存储及应用的重要性，为各行各业大数据安全存储和应用创造更多价值。 Understand the importance of data structure and database for the safe storage and application of national data, and create more value for the safe storage and application of big data in all walks of life. 了解计算理论关键问题，提出高适用性的优化算法，推动先进科学技术的发展。 Understand the key problems of computing theory, propose high applicability optimization algorithm, and promote the development of advanced science and technology.	
重点: Key Points	因特网体系结构与编址 The Internet Architecture and Addressing	

难点: Focal points	因特网编址, HTML Internet Addressing, HTML

知识单元序号: Knowledge Unit No.	5	支撑教学目标: SLOs Supported	1-1，1,4,1-5
知识单元名称 Unit Title	算法 Algorithms		
知识点: Knowledge Delivery	算法的概念、表示 The Concept，Representationof an Algorithm		
	迭代结构 Iterative Structures		
	递归结构 Recursive Structures		
	算法的效率 Algorithm Efficiency		
学习目标: Learning Objectives	了解: Recognize	算法的定义，算法的求解，算法的效率与正确性 The Formal Definition of anAlgorithm， ProblemSolving，AlgorithmEfficiency and Correctness	
	理解: Understand	算法的抽象本质 算法的发现 The Abstract Nature ofAlgorithms， AlgorithmDiscovery	
	掌握: Master	几个常用算法，循环控制与递归控制 Introduction to CommonAlgorithms，LoopControl and Recursive Control	
德育目标 Moral Objectives	具备优异的国际化发展能力，通晓世界形势与时代发展规律，深刻认识中国的国际战略构想与举措，具备在全英语、跨文化环境下开展学习、研究、实践的能力，具务迎接未来国际化挑战的坚定信心。 has excellent international development ability, is familiar with the world situation and the development law of the times, has a profound understanding of China's international strategic ideas and measures, has the ability to carry out learning, research and practice in the English language and cross-cultural environment, and has the firm confidence to meet the future international challenges. 了解数据结构及数据库对国家数据安全存储及应用的重要性，为各行各业大数据安全存储和应用创造更多价值。 Understand the importance of data structure and database for the safe storage and application of national data, and create more value for the safe storage and application of big data in all walks of life.		

	了解计算理论关键问题，提出高适用性的优化算法，推动先进科学技术的发展。 Understand the key problems of computing theory, propose high applicability optimization algorithm, and promote the development of advanced science and technology.
重点: Key Points	算法的表示， 搜索算法，排序算法 Algorithm Representation，SearchAlgorithm，SortAlgorithm
难点: Focal points	迭代结构，递归结构 Iterative Structures ，RecursiveStructures

知识单元序号: Knowledge Unit No.	6	支撑教学目标: SLOs Supported	1-4, 1-5, 1-6
知识单元名称 Unit Title	数据抽象与数据库系统 Data Abstractions andDatabase Systems		
知识点: Knowledge Delivery	基本的数据结构及实现 Basic Data Structures and theImplement		
	定制的数据类型、类和对象 Customized Data Types、Classesand Objects		
	数据库基础及其社会影响 Database Fundamentals and SocialImpact		
	关系模型及面向对象数据库 The Relational Model and Object-OrientedDatabases		
学习目标: Learning Objectives	了解: Recognize	基本的数据结构及其概念和术语；典型数据结构的存储；定制的数据类型；类和对象的概念；数据库及数据库管理系统；数据库技术的社会影响 Basic Data Structures andthe Concepts and Terms; the Storing of the Typical Data Structures; CustomizedData Types; Concepts of Classes and Objects; Database and Database Management System;Social Impact of Database Technology	
	理解: Understand	列表、栈和队列、树等典型数据结构的相关知识；静态结构和动态结构；类和对象的区别；关系模型；面向对象数据库的建立和使用；数据挖掘技术 Relevant Knowledge of Lists,Stacks and Queues, Trees; Static Versus Dynamic Structures; Distinctions of Classesand Objects; the Relational Model; Establish and Use Object-Oriented Databases;Data Mining Technology	
	掌握: Master	列表、栈和队列、树的基本运算；数据存储结构；数据库的建立和使用；数据挖掘的应用	

		Basic Operations of Lists, Stacksand Queues, Trees; Data Storage Structure; Classes and Objects; Establish and UseDatabases; Application of Data Mining
德育目标 Moral Objectives	了解数据结构及数据库对国家数据安全存储及应用的重要性，为各行各业大数据安全存储和应用创造更多价值。 Understand the importance of data structure and database for the safe storage and application of national data, and create more value for the safe storage and application of big data in all walks of life.	
重点: Key Points	列表、栈和队列、树的特征；数据存储结构；类和对象的设计过程；数据库的建立和使用；数据挖掘技术 Characteristic of Lists, Stacksand Queues, Trees; Data Storage Structure; Design Procedure of Classes andObjects; Establish and Use Databases; Data Mining Technology	
难点: Focal points	列表、栈和队列、树的基本运算；数据存储结构的灵活应用；面向不同应用数据库的建立；数据挖掘技术的运用 Basic Operations of Lists, Stacksand Queues, Trees; Appropriate application of Data Storage Structures; Databaseestablishment for special application; Application of Data Mining Technology	

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.

教学内容 Teaching Content	学时(周) Hour(Week)			
	理论 LECT.	实验 EXP.	实践 PRAC.	PBL
数据存储 Data Storage	3	0	0	0
数据操控 Data Manipulation	3	0	0	0
操作系统 Operating Systems	2	0	0	0
组网及因特网 Networks and The Internet	2	0	0	0
算法 Algorithms	2	0	0	0
数据抽象 Data Abstractions	2	0	0	0
数据库系统 Database Systems	2	0	0	0
总计 Total	16	0	0	0

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
☑	多媒体教学：基于信息化设备的课堂教学 Multi-media-based lecturing
☑	实践能力传授：理论与行业、实际案例相结合 Combining theory with industrial practical problems
☑	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: Assessment Content	理论 Lecture	环节负责人: Director	史闻博
给分形式: Result Type	百分制 Marks	课程总成绩比重(%): Percentage (%)	30%
考核方式: Measures	课堂测验在课中或课后进行，其成绩占本课程总成绩的 30%。 Classroom tests are conducted during or after class, which accounts for 30% of the total score of this course.		

考核环节: Assessment Content	理论 Lecture	环节负责人: Director	史闻博
给分形式: Result Type	百分制 Marks	课程总成绩比重(%): Percentage (%)	20%
考核方式: Measures	课后作业占本课程总成绩的 20%。 Homework accounts for 20% of the total score of this course.		

考核环节: Assessment Content	理论 Lecture	环节负责人: Director	史闻博
给分形式:	百分制 Marks	课程总成绩比重(%):	50%

Result Type		Percentage (%)	
考核方式: Measures	课程报告占本课程总成绩的 50% . The report accounts for 50% of the total score of this course.		

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 AAB of SSTC, NEU.

教学大纲改进机制 Subject Syllabus Improvement Mechanism			
考核周期(年): Check Period (YR)	4	修订周期(年): Revise Period (YR)	4
改进措施: Measures	课程负责人根据课程教学内容与人才培养目标组织课程团队讨论并修改教学大纲，报分管教学工作副院长审核后由执行院长批准。 The subject coordinator shall be responsible for the syllabus discussion and improvement, and the revised version shall be submitted to deputy dean (teaching affairs) for reviewing then to executive dean for approvement.		
成绩评定改进机制 Assessment Improvement Mechanism			
考核周期(年): Check Period (YR)	1	修订周期(年): Revise Period (YR)	1
改进措施: Measures	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.		