## 《移动道路测量技术及应用》课程简介

**一、课程基本信息**

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| 课程编号 | 20322059 |
| 课程中文名称 | 移动道路测量技术及应用 |
| 课程英文名称 | Technology and Application of Mobile Mapping System |
| 适用专业 | 地理信息科学 |
| 总学时 | 16（含8学时实验） |
| 学分 | 1 |
| 先修课程 | 摄影测量基础 误差理论与测量平差基础 卫星导航定位技术 |
| 并修课程 | 无 |

**二、课程内容简介**

《移动道路测量技术及应用》在地理信息科学专业中是一门专业技术选修课。移动道路测量技术作为当今最先进的测量手段，综合了GPS、近景摄影测量、惯性导航等的测绘领域的多种前沿技术以及地理信息技术，其应用相当广泛，是3S技术集成应用的典范。本课程正是侧重测绘领域中的前沿，拓展学生视野为出发点，探讨了移动道路测量技术、以移动道路测量技术为基础的移动道路测量系统以及移动道路测量技术的应用三部分内容。要求学生掌握移动道路测量技术的基本概念、原理及其应用领域，移动道路测量技术与传统测量技术的区别，移动道路测量技术的产生历程和发展趋势，移动道路测量系统的组成、数据组织方法、精度控制方法等。并通过实践练习，使学生熟悉移动道路测量系统的实际操作，了解移动道路测量系统的数据生产工艺（包括：外业数据采集、内业数据编辑）以及基于实景影像的信息提取过程。通过本课程学习，不仅可以提高学生对实景多源数据软件操作的动手能力；同时，为学生深刻理解3S技术综合应用，增加对测量领域先进技术应用的兴趣打下良好基础。

英文简介

“Technology and Application of Mobile Mapping System” is a basic specialized professional elective in Geographic Information Science profession. Mobile mapping technology as the most advanced measuring instruments, combines the GPS, close-range photogrammetry, inertial navigation and so on, a variety of cutting-edge technologies in the field of surveying and geographic information technology. Its wide range of applications is a model of 3S technology integration applications. This course is focus on the field of surveying in the frontier, expand the horizons of students as the starting point, discussed the three parts of contents: mobile mapping technology, mobile mapping system based on mobile mapping technology and application of mobile mapping technology. Through the actual practice, to make students are familiar with mobile mapping system, to grasp the use of the system hardware and software, understanding of Mobile Mapping System data production process (including: field data collection, data process) and the information extraction process based on real images. By learning the course, students can not only improve the operation of the multi-source data software for real ability; at the same time, for the students to understand the comprehensive application of 3S technology deeply, and lay a good foundation for increase interest in the application of advanced technology in measurement field.

**三、本课程简介起草人、审阅人**

起草人：刘扬

审阅人：张健钦

## 《智慧城市导论》课程简介

**一、课程基本信息**

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| --- | --- |
| 课程编号 | 20322219 |
| 课程中文名称 | 智慧城市导论 |
| 课程英文名称 | Introduction to Smart City |
| 适用专业 | 地理信息科学 |
| 总学时 | 16 |
| 学分 | 1 |
| 先修课程 | 现代测绘技术应用 卫星导航定位技术 |
| 并修课程 | 无 |

**二、课程内容简介**

《智慧城市导论》在地理信息科学专业中是一门专业技术选修课。智慧城市是一个复杂的巨系统，涉及到城市规划、设计、管理和服务等方方面面，涉及到政府、企业、居民等多个主体，涉及到技术应用、理念创新、模式转变、制度改革等一系列实践，也是当前地理信息科学领域讨论的热点话题。本课程正是侧重地理信息科学领域中的前沿，拓展学生视野为出发点，探讨了智慧城市的相关理论、支撑技术体系以典型的智慧城市应用三部分内容。要求学生掌握智慧城市产生的背景、智慧城市涉及的基本概念、原理及其应用领域，国内外智慧城市发展现状、智慧城市建筑的路线图等。通过本课程学习，不仅可以使学生对智慧城市相关知识有更透彻、更全面的了解和掌握；同时，为学生深刻理解空间信息在推动智慧城城市中的深入应用，增加对地理信息科学领域先进技术应用的兴趣打下良好基础。

英文简介

“Introduction to Smart City” is a basic specialized professional elective in Geographic Information Science profession. Smart City is a complex giant system, related to urban planning, design, management and other aspects of the service, involving multiple body government, businesses, residents, etc., related to technology, innovative ideas, a paradigm shift, and a series of institutional reforms practice. It is the current hot topic in the field of geographic information science discussion. This course is focus on the frontier of the field of geographic information science, expand the horizons of students as the starting point, discussed the three parts of contents: the theory、supporting technology, and the typical applications of Smart City. Students will learn a lot of knowledge through this course, for example, the background of Smart City, the basic concept, principles and applications of Smart City, and status of development of Smart City, the building road maps of Smart City. By learning the course, students can not only have a more thorough, more comprehensive understanding to Smart City; at the same time, for the students to understand the spatial information how to do in-depth applications in advancing Smart City, and lay a good foundation for increase interest in the application of advanced technology in Geographic Information Science field.

**三、本课程简介起草人、审阅人**

起草人：刘扬

审阅人：张健钦

## 《WebGIS技术与开发》课程简介

**一、课程基本信息**

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| --- | --- |
| 课程编号 | 20322213 |
| 课程中文名称 | WebGIS技术与开发 |
| 课程英文名称 | WebGIS Technology and Development |
| 适用专业 | 地理信息科学、遥感科学、测绘科学与技术 |
| 总学时 | 48（含16学时实验） |
| 学分 | 3 |
| 先修课程 | 数据结构、数据库技术与应用、地图学、地理信息系统原理（双语） |
| 并修课程 | 无 |

**二、课程内容简介**

WebGIS概论是地理信息科学专业学生的必修课。WebGIS是集计算机网络技术与GIS技术而成的一门课程，它着重于借助网络平台展示GIS技术和提供常规的空间信息服务。WebGIS具有全球化的服务器应用、真正大众化的GIS、良好的可扩展性和跨平台的特性。WebGIS的功能包括：地理信息的空间分布式获取、地理信息的空间查询、检索和联机处理、空间模型的分析服务以及互联网上资源的共享。本课程分为三个方面，即计算机网络基础、计算机网络安全和WEBGIS原理。这三部分分别讲解计算机网络概述、TCP/IP协议和Web开发技术；计算机安全概述、数据加密技术和火墙技术；网络GIS发展、网络GIS体系、WebGIS开发原理与实践。通过本课程的学习，使学生能够掌握计算机网络和WebGIS方面的相关知识，了解它们的主要应用领域和发展方向，具备一种主要WebGIS产品的二次开发能力，也为学生今后的工作与学习打下一定的基础。

WebGIS Generality is a professional course for the students of geographic information science major. WebGIS is a curriculum that is made of computer network technology and GIS technology, which focuses on the use of the network platform to showcase GIS technology and provide regular spatial information services. WebGIS has some technology features, such as globalized server application, real popular GIS, good scalability and cross-platform. WebGIS function includes distributed acquisition of geospatial information, spatial information query, retrieval and online processing, analysis service of space model and sharing resource on the Internet. The course is divided into three sections, namely computer network basis, computer network security and WEBGIS principle. The three sections separately explain the computer network, TCP/IP protocol and Web development technologies; computer security overview, data encryption and firewall technologies; network GIS development, network GIS system, WebGIS development principle and practice. Through this course, students can master the knowledge of computer network and related aspects of the WebGIS, understand main application areas and development direction, with the ability to develop a major WebGIS secondary product, but also lay certain foundation for students at work and learning in future.

**三、本课程简介起草人、审阅人**

起草人： 靖常峰

审阅人： 霍亮

## 《计算机图形学》课程简介

**一、课程基本信息**

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| --- | --- |
| 课程编号 | 20322215 |
| 课程中文名称 | 计算机图形学 |
| 课程英文名称 | Computer Graphics |
| 适用专业 | Remote Sensing Science and Technology、GIS |
| 总学时 | 32 |
| 学分 | 2 |
| 先修课程 | Data Structure、Object-oriented Programming（C++） |
| 并修课程 | Cartography、The Principle of Geographic Information System |

**二、课程内容简介**

This course is one of the professional foundation courses for geography and surveying and mapping. Teaching purpose is to make students master the knowledge of the basic theory of computer graphics and graphic representation methods and technology in the field of study, make students understand the basic concepts and methods of the computer graphics, to understand the relevant technology of the computer aided design, require students to understand most kinds of graphic generation process and methods, and to use integrated graphical environment to develop the application of computer aided design software.

Through teaching of the course and teaching experiment achieves the following goals. Students have a basic understanding of computer graphics peripheral equipment working principle, system composition and graphic standards, master with points, lines, planes and solids, geometry description method and technology of geographical objects, and master the basic editing method of basic graphics, 2D and 3D graphic geometric transformation methods, hidden line and hidden surface elimination method. Focus is combined with the application in the field of computer graphics in the study, to grasp the method of linear and circular arc generated, area filling of raster graphics, line and polygon cutting method, the graph transformation, the generation of curve and surface, line and plane to eliminate hidden, etc.; Difficulty is 3D graphics production method, projection transformation, the representation of curve and surface, hidden line and plane to eliminate.

**三、本大纲主要起草人、审阅人**

主要起草人：刘建华

审阅人：

## 《计算机图形学》课程简介

**一、课程基本信息**

|  |  |
| --- | --- |
| 课程编号 | 20322215 |
| 课程中文名称 | 计算机图形学 |
| 课程英文名称 | Computer Graphics |
| 适用专业 | 遥感科学与技术、测绘工程、地理信息系统 |
| 总学时 | 32（24学时讲授， 8学时上机） |
| 学分 | 2 |
| 先修课程 | 数据结构，面向对象程序设计（C++） |
| 并修课程 | 地图学，地理信息系统原理 |

**二、课程内容简介**

本课程为地理与测绘类本科课程的专业基础课程之一。课程教学的目的与任务是使学生掌握计算机图形学基础理论知识以及地学领域的图形表达方法与技术，使学生了解计算机图形学的基本概念和方法，理解计算机辅助设计的相关技术，要求学生理解和掌握各类图形的生成过程和方法，并能利用综合图形环境开发有关计算机辅助设计应用软件。

通过本课程的教学与实验达到如下教学目标：基本了解计算机图形外围设备的工作原理、图形系统的组成和图形标准。掌握用点、线、面、体等几何图形描述地理对象的方法与技术，同时掌握基础图形的基本编辑方法，二维和三维图形的几何变换方法，隐藏线和隐藏面的消除方法。重点是结合计算机图形学在地学领域的应用，掌握直线和圆弧的生成方法、光栅图形的区域填充、线和多边形的裁剪方法、图形变换、曲线和曲面的生成、隐藏线和面的消除等；难点是三维图形生产方法、投影变换、曲线和曲面的表示、隐藏线和面的消除。

**三、本大纲主要起草人、审阅人**

主要起草人：刘建华

审阅人：

## 《空间分析与建模》课程简介

**一、课程基本信息**

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| --- | --- |
| 课程编号 | 20322206 |
| 课程中文名称 | 空间分析与建模 |
| 课程英文名称 | Spatial Analysis and Modeling |
| 适用专业 | 地理信息科学 |
| 总学时 | 32（含8学时实验） |
| 学分 | 2 |
| 先修课程 | 自然地理学、地图学、地理信息系统原理（双语） |
| 并修课程 | 无 |

**二、课程内容简介**

空间分析与建模是地理信息科学研究的一个主要方向,已广泛应用于地理学、地质学、气象学、地图学、生态学以及公共卫生等诸多领域。本课程以空间分析的基础理论与研究内容为主，首先对空间分析的基本概念、内涵进行阐述;进而介绍空间分析研究的主要内容,包括空间目标形态量测、空间关系计算、空间叠置和缓冲区分析、网络分析、地形分析、空间分布模式分析、空间插值分析及空间回归分析。本课程具有较强的综合性和实践性，通过本课程加强学生对GIS空间分析基础原理的理解，培养学生独立分析和解决相关的地学问题的能力。

Spatial analysis and modeling is a main research direction of geographic information science, which has been widely used in geography, geology, cartography, ecology and public health, and many other fields. This course is given priority to the basic theory and the research content of spatial analysis, first of all, the course elaborates the basic concept of spatial analysis and the connotation; then, the main research content of spatial analysis is introduced, including the space target shape measurement, spatial relation calculation, spatial relation calculation, spatial overlay analysis, spatial buffer analysis, network analysis, terrain analysis, spatial pattern analysis, spatial interpolation analysis and regression analysis. This course has strong comprehensiveness and practicalness, which can also strengthen student’s understanding of fundamental GIS spatial analysis and train students’ independent ability to analyze and solve related geological problems.

**三、本课程简介起草人、审阅人**

起草人： 靖常峰

审阅人： 赵江洪

## 《C语言与数据结构》课程简介

**一、基本信息**

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| --- | --- |
| 课程编号 | 20322203 |
| 课程中文名称 | 数据结构 |
| 课程英文名称 | Data Structure |
| 适用专业 | 遥感工程、地理信息工程 |
| 总学时 | 48（其中上机16学时） |
| 学分 | 3 |
| 先修课程 | 无 |
| 并修课程 | 无 |

**二、课程简介**

《C语言与数据结构》是计算机学科的基础核心课程，其中C语言是国内外广泛使用的一种计算机语言，其语言功能丰富、应用面广、目标程序效率高、即可满足系统软件的开发，又可满足应用系统的开发；数据结构则是研究信息的逻辑结构及其操作在计算机中的表示和实现，它不仅是程序设计的基础，也是设计和实现编译程序、[操作系统](http://lib.csdn.net/base/operatingsystem)、数据系统及其它系统程序以及各种大型应用程序的重要基础。本课程涵盖C语言和数据结构的基本概念及应用；重点掌握C语言基本数据类型、语法、程序控制三种结构、数组、函数、指针、结构体、文件的读写操作；数据结构的线性表、栈、队列、树和二叉树等基本类型的数据结构及其应用、数据查找和排序算法及实现。通过本课程的学习可以使学生掌握C语言结构化程序设计的方法，确立程序设计的思维方式，并系统地掌握数据结构的有关性质和常见算法，为后续信息类课程的学习奠定基础。

"C Programming Language and Data Structures" is the core of fundamental courses in computer science. C Programming Language, which has rich language function, wide application and target program with high efficiency and is suitable for developing the system software and the application, is a computer language widely used at home and abroad; Data Structures is about the logical structure of the information and how to express and realize in the computer. It is not only the base of designing program, but also the important foundation of designing and realizing the program`s compiling, operating system, database system and other system program and huge application. This course includes the basic idea and application of C Programming Language and Data Structures; The basic data types, language grammar, three kinds of structures of controlling program, array, function, pointer, struct and the read and write operations of the files should be significantly mastered; The linear list , stack, queue, tree and binary tree of data structures and other basic type of data structures and their applications, realizing of data search and the ranking algorithm should also be importantly mastered. Through this course, students could master the methods of programming in C Programming Language, establish the thinking of designing program and master the correlation property of data structures and common algorithms thoroughly, lay a foundation for the following courses of information.

**三、本课程简介起草人、审阅人**

起草人：吕京国 黄明

审阅人：靖常峰

## 《自然地理学》课程简介

**一、课程基本信息**

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| 课程编号 | 20322006 |
| 课程中文名称 | 自然地理学 |
| 课程英文名称 | Physical Geography |
| 适用专业 | 测绘工程、遥感科学与技术、地理信息科学 |
| 总学时 | 32 |
| 学分 | 2 |
| 先修课程 | 无 |
| 并修课程 | 无 |

**二、课程内容简介**

自然地理学主要介绍自然地理的研究对象和任务，地球的宇宙环境、地球的运动、地球的形状和结构，地壳及其运动、地质构造与地壳的演化，气候与气候资源，水文及水资源，地貌及地貌灾害与防治；植物及植物资源，动物及动物资源，土壤及土壤资源等地球表层各自然要素的性质和特点，各要素之间的相互联系和相互作用，自然地理环境的基本规律及其应用，人类与自然地理环境的关系等内容。因此自然地理学对于测量专业和地理信息科学专业都是一门很重要的专业基础课。通过本课程的学习，使学生掌握自然地理学的基本知识、基本理论和基本技能，了解各自然地理要素的特征、发展变化和分布规律，进一步认识自然地理系统的整体性和区域差异性，为学生今后从事地学科学研究及应用工作奠定基础。

Physical Geography mainly introduces the study object and task of physical geography, the space environment, movement and the shape and structure of the earth, crustal and its movement, evolution between geological structure and crust, climate and climate resources, hydrology and water resources, landforms and geomorphological hazards and prevention; properties and characteristics of various natural elements on the surface of earth, for example plants and plant resources, animal and animal resources, soil and soil resources, etc, linkages and interaction among the various elements, the basic rule of natural geographical environment and its application, relationship between humans and the natural geographical environment, etc. Therefore, physical geography is a very important basic course for the major of measurementand geographic information system.Through this course enable students to master the basics knowledge of physical geography, the basic theory and basic skills, understand the characteristics of natural geographic features, law of development and distribution, further understand the integrity and regional differences of physical geography system, to lay the foundation for the students who engaged in the research and application of geosciences science in the future.

**三、本课程简介起草人、审阅人**

起草人：张学东

审阅人：霍亮

## 《地图设计与编绘》课程简介

**一、课程基本信息**

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| 课程编号 | 20322169 |
| 课程中文名称 | 地图设计与编绘 |
| 课程英文名称 | Map Design and Complication |
| 适用专业 | 地理信息科学、测绘工程 |
| 总学时 | 32（含16学时实验） |
| 学分 | 2 |
| 先修课程 | 自然地理学、数字地形测量学、地图学 |
| 并修课程 |  |

**二、课程内容简介**

地图设计与编绘是地学专业本专科学生的专业课，也是测绘学的基本组成部分。该课程是测绘工程专业、地理信息科学、遥感科学与技术专业学生的选修课。“地图设计与编绘”全面系统地介绍地图设计与编绘理论、技术、方法。使学生掌握地图编辑设计准备工作的各项内容以及地图总体设计、符号设计、色彩设计和地图表示方法设计的理论和原理方法；理解制图综合的概念和特点以及方法；掌握电子地图多尺度表达概念与方法。因此地图设计与编绘对于测量专业和地理信息科学专业都是一门很重要的专业课。通过本课程的学习，使学生全面理解地图设计与编绘的基本概念及理论以及方法，能够完成从地图设计到编辑到出版的地图生产的全过程。是一门实践性和实用性很强的课程。

“Map design and compilation” is professional course for geo-science students and also is the basic component of surveying and mapping science. The course is elective coursefor students majoring in Surveying and Mapping Engineering, GeographyInformation Science, Remote Sensing Science and Technology. Map design and compilation theory, techniques and methods are introduced comprehensively and systematically in the course. The theory and principle of the method of The content prepared in map design , overall design, symbol design, color design and the map representation design will be mastered. The concepts and methods of the cartographic generalization will be understood. The multi-scale expression concept and method of electronic map will be mastered. Through learning of this course, the students can understand the basic concept, theory and method of map design and compilation and can complete map production process from the design to the edit and publishing. It is a practical and useful curriculum.

**三、本课程简介起草人、审阅人**

起草人： 赵江洪

审阅人： 黄明

## 《地图学》课程简介

**一、课程基本信息**

|  |  |
| --- | --- |
| 课程编号 | 20322160 |
| 课程中文名称 | 地图学 |
| 课程英文名称 | Cartography |
| 适用专业 | 测绘工程、地理信息科学、遥感科学与技术 |
| 总学时 | 48（含8学时实验） |
| 学分 | 3 |
| 先修课程 | 高等数学、自然地理学、数字地形测量学 |
| 并修课程 |  |

**二、课程内容简介**

地图学是地学专业本专科学生的专业基础课，也是测绘学的基本组成部分。该课程是测绘工程专业、地理信息科学、遥感科学与技术专业学生的必修课。“地图学”是系统地、全面地从多个角度讲授地图学的原理、概念、方法、应用的一门专业基础课程。地图是测量最终成果的表达方式，地理信息系统也是脱胎于地图数据库，因此地图学对于测绘工程专业、遥感科学与技术专业和地理信息科学专业都是一门很重要的专业基础课。通过本课程的学习，使学生全面理解地图学的基本概念及理论，掌握计算机制图的一般流程。要求能用计算机制图软件制作各种专题图以及缩编地形图，以便成为地图制图与地理信息工程方面的高级专门人才。该课程的开设为空间信息的采集与整理、成果的可视化分析与表达和今后的工作与学习打下基础。

Cartography is a professional basic course for Geo-science students and the basic component of Surveying and Mapping. The course is compulsory course for students majoring in Surveying and Mapping, Geographic Information Science and Remote Sensing science and technology. The principles, concepts, methods and application are introduced systematically and comprehensively in the course. Map is a the presentation of the final results of surveying and Geographic Information System is based on a map database, so cartography is a very important professional basic course for major of Surveying, Remote Sense and Geographic Information Science. Through learning of this course, the basic concepts and theories of cartography will be fully understood and the general process of computer mapping will be mastered by students. Students should be able to make various thematic map and downsizing topographic map with a computer drawing software.The course lay the foundation for spatial information collection and sorting, visual analysis and expression of the results and future working and study. .

**三、本课程简介起草人、审阅人**

起草人： 赵江洪

审阅人： 黄明

## 《C＃程序设计》课程简介

**一、课程基本信息**

|  |  |
| --- | --- |
| 课程编号 | 20322163 |
| 课程中文名称 | C＃程序设计 |
| 课程英文名称 | C# programming |
| 适用专业 | 地理信息科学 |
| 总学时 | 48（含16学时实验） |
| 学分 | 3 |
| 先修课程 | C语言程序设计、计算机信息技术基础、数据结构 |
| 并修课程 | 无 |

**二、课程内容简介**

本课程在地理信息科学专业中属于基础程序设计课程，为专业基础课，必修课程。本课程为地理信息系统的设计与开发提供编程基础。本课程从C#应用程序所用到的基本概念讲起，由浅入深，逐步介绍使用C#语言开发应用程序所必须掌握的知识。包括.net集成开发环境和C#语言的特点，C#的集成开发环境，C#语言的基本语法、语句、方法，以及面向对象编程的基本知识，数组的操作、字符串的操作、简单的Windows编程、对话框的使用和操作、文件和流操和数据库等内容。本课程注重对基础知识的掌握和运用，特别是对理论的理解和运用，为了更好的帮助学生理解这些知识，提高编程能力，在讲述知识点时，都配合了典型的例子进行讲解。

This course is the basic programming courses for Geographic Information Science major, also the basic course, compulsory course.This course will provide the students with the basis of designing and developing the program for GIS.This course start at the basic concept used by the C # application , then gradually introduce the necessary knowledge for developing applications by using C # language. The content include .net Integrated Development Environment and C # language features, C # Integrated Development Environment, the basic syntax, statements, methods of C # language, and basic knowledge of object-oriented programming, the operation of the array, string manipulation, simple Windows program, using and operation of the dialog box, files and streams and database operations.The course focuses on mastering and using the knowledge, especially on understanding the theory and application. In order to help students better understand the knowledge and improve programming ability, each lesson is supported with typical examples to explain .

**三、本课程简介起草人、审阅人**

起草人：危双丰、刘扬

审阅人：石若明

## 《地理信息系统原理（双语）》课程简介

Course Brief of “The principles of Geographical Information System”

**一、课程基本信息 Basic Information**

|  |  |
| --- | --- |
| 课程编号 | 20322188 |
| 课程中文名称 | 地理信息系统原理（双语） |
| 课程英文名称 | The Principles of Geographic Information System |
| 适用专业 | 测绘工程、地理信息科学、遥感科学与技术 |
| 总学时 | 48 (含8学时上机实验) |
| 学分 | 3 |
| 先修课程 | 遥感原理与应用（双语）、地图学 |
| 并修课程 | 无 |

**二、课程内容简介 Course Brief**

地理信息系统（简称GIS）是近20年来新兴的一门集计算机科学、信息科学、测绘科学、地理科学、空间科学、环境科学和管理科学等为一体的新兴交叉学科，是数字地球、智慧城市的重要组成部分，是当今科技发展的制高点。《地理信息系统原理（双语）》课程是地理信息系统专业的专业基础课程。《地理信息系统》课程系统地介绍地理信息系统的技术体系及其应用方法，包括地理信息系统的基本概念、地理信息系统的地学基础、空间数据结构和数据库、空间数据采集和质量控制、数据处理的内容和方法、空间分析的内容和方法、空间信息可视化、地理信息系统的应用，以及地理信息系统的开发和评价等。

本课程的学习以教师讲授为主，同时辅之以讨论、课后作业、实例演示等手段，同时，为了提高学生对理论知识的理解，设置了8个学时的课内实验和为期2周的课程实习，理论和实践相结合，以保证学生对地理信息系统原理的理解和重点知识掌握。

Geographical Information System (GIS) is a core course in undergraduate studies of GIS. GIS is characterized for its comparatively high integration of various disciplines. What’s more, it also contains, but not limited to, the advantages like oneness of science and technology, fast development and update, integration of several studies (Geography, Cartography, Topography, Computer Science etc.) with superior ability of penetrating and spatial abstracting, and wide-spread application.This unit is made up of overview, spatial information basis, spatial data structure, spatial database, collecting and analyzing of spatial data, theories and methods to do GIS spatial analysis, output of GIS production, new approach of GIS , “digital earth” and smart city etc.. Among those, spatial data structure, spatial database, theories and means to do GIS spatial analysis are the core contents.

Formative learning is the major teaching method, as well as discussions, assignments and demonstration. For further understanding the knowledge in GIS, this course is divided into theoretical lessons with 40 hours and practical lessons with 8 hours, this kind of course design can provide students an effective way to acquire the knowledge and techniques in GIS.

**三、本课程简介起草人、审阅人 Drafters and reviewers**

起草人：危双丰、王文宇

审阅人：石若明

## 《空间数据库》课程简介

**一、课程基本信息**

|  |  |
| --- | --- |
| 课程编号 | 20322211 |
| 课程中文名称 | 空间数据库 |
| 课程英文名称 | Spatial Database |
| 适用专业 | 地理信息科学 |
| 总学时 | 48（含16学时实验） |
| 学分 | 3 |
| 先修课程 | 计算机信息技术基础、数据库技术与应用、C#程序设计 |
| 并修课程 | 无 |

**二、课程内容简介**

本课程在地理信息科学专业中属于专业基础课，必修课程，通过该课程的学习将为空间数据库的设计开发提供编程基础。课程教学使学生对各种空间数据的存贮和管理技术有个较全面的了解，对学生进行有关空间数据库设计技巧的训练，为将来从事GIS应用系统及其数据库的设计打下基础，理解地理空间数据库的基本概念、原理与方法。了解地理空间数据管理的发展过程和趋势；理解空间信息模型的概念、区别，数据库的设计步骤；掌握空间查询语言、关系代数、数据库自定义数据类型、空间查询实例；掌握空间数据的存储原理、空间索引的发展、及典型的空间索引技术；了解空间查询处理以及查询优化原理和方法；掌握空间数据库的设计与实施；了解时空数据库和空间数据库发展趋势。

The course is a specialized elementary course and compulsory course for Geographic Information Science major.Programming basis will be provided for spatial database designing by studying the course.Courses provide a more general realization of storing various spatial data and management technology,training students on designing skills of spatial database ,which lays the foundation for future working on GIS application system and its database designing,understanding the basis principle and method of geographical spatial database,knowing the development and trend of geospatial data management ; understand the concept, differences between spatial information models, the design steps of database;grasp the spatial query language, database relational algebra, custom data types, spatial query examples; grasp the spatial data storage, spatial index, the development principle and typical spatial index technology; to understand the spatial query processing and query optimization principle and method master the design and implementation of spatial database;understand the development trend of temporal database and spatial database.

**三、本课程简介起草人、审阅人**

起草人：危双丰、郭明

审阅人：石若明

## 《移动GIS开发》课程简介

**一、课程基本信息**

|  |  |
| --- | --- |
| 课程编号 | 20322176 |
| 课程中文名称 | 移动GIS开发 |
| 课程英文名称 | Mobile GIS development |
| 适用专业 | 地理信息科学 |
| 总学时 | 32（含24学时实验） |
| 学分 | 1.5 |
| 先修课程 | C＃程序设计、数据结构、地理信息系统原理（双语）、GIS基础应用技能、卫星导航定位技术 |
| 并修课程 | 无 |

**二、课程内容简介**

《移动GIS开发》课程作为我校地理信息科学专业的选修课，无论是在学生的毕业设计中，还是学生毕业后从事地理信息系统的设计与运行时都是应用很多一门课程。本课程的教学内容主要包括：移动地理信息系统的基本概念、组成、发展过程及应用情况，移动GIS开发环境搭建方法，移动GIS的界面设计技术，基于移动API的二次开发技术，基于移动GIS平台的空间数据查询与分析技术。通过本课程的学习，使学生基本具备移动地理信息系统设计与实现的能力。通过对基本概念、基本理论、基本设计方法、基本实验技能的学习与实践，使学生掌握移动地理信息系统的软件设计与调试的基本知识与技能。通过上机实例教学，增强学生的实践意识，培养创新精神，提高解决工程问题的能力。

"Mobile GIS Development" is our optional course of GIS faculty. It is designed for a course with a lot of applications at runtime both in the design of the student's graduation or after the student graduates engaged in geographic information systems. Teaching contents of this course include: basic concepts of mobile GIS, composition, development and application of mobile GIS development environment, a mobile GIS interface design techniques, mobile API-based mobile GIS spatial data query and analysis platform based on secondary development technology. Through this course, students have the ability to design and implement a mobile geographic information system basically. Through the basic concepts, basic theory, basic design methods, basic experimental skills it make students to master the basic knowledge and skills of software design and debug mobile GIS. By teaching the instances, it can enhance students' practical awareness, foster innovation and improve the ability to solve engineering problems.

**三、本课程简介起草人、审阅人**

主要起草人：郭明

审阅人： 刘祥磊

## 《Java程序设计》课程简介

**一、课程基本信息**

|  |  |
| --- | --- |
| 课程编号 |  |
| 课程中文名称 | Java程序设计 |
| 课程英文名称 | Java Programming |
| 课程类别 | 通识教育（ ）大类基础（ ）  专业核心（ ）专业方向（√ ） |
| 课程性质 | 必修（ ）任选（√ ） |
| 适用专业 | 地理信息科学、测绘工程、遥感科学与技术 |
| 总学时 | 32（24学时讲授， 8学时上机） |
| 学分 | 2 |
| 先修课程 | 数据结构，C语言程序设计 |
| 并修课程 | WebGIS概论 |
| 开课单位 | 测绘与城市空间信息学院 地理信息科学系 |
| 本课程对毕业要求的贡献 | 掌握Java编程的基本理论知识；重点培养学生Java计算机网络工程编程的处理、分析能力以及相关WebGIS应用程序的研发技能。 |

**二、课程内容简介**

本课程为地理与测绘类本科课程的专业应用基础课程之一。课程教学的目的与任务是使学生掌握Java程序设计基础理论知识以及地学领域的编程技术应用，使学生了解Java程序设计的基本概念和方法，理解Java程序设计的相关技术，并能利用集成环境开发有关网络GIS应用软件。

通过本课程的教学与实验达到如下教学目标：基本了解Java程序设计原理，掌握用Java语言编写GIS网络应用程序的方法与技术。重点是结合Java程序设计在地学领域的应用，掌握Java类和对象，创建类和对象，Java关键字、运算符、语句构成、编程结构，类的层次和关系，异常处理，图形界面类，布局管理，Applets，事件处理，多线程，文件存储，创建基于网络的程序，数据库访问，JAVABEAN，JSP等知识。

This course is one of the professional application foundation courses for geography and surveying and mapping. Teaching purpose is to make students master the knowledge of the basic theory of Java programming methods and technology in the field of study, make students understand the basic concepts and methods of the Java language, to understand the relevant technology of the Web GIS applications, require students to understand most kinds of Web data process and methods, and to use integrated developing environment to develop the application of GIS software.

Through teaching of the course and teaching experiment achieves the following goals. Students have a basic understanding of Java programming working principle, Java class and object, Java key words, operations, sentences, programming constructs, the level structure and the inheritance relation of class, exception handling, GUI classes, layout management, Applets, event handling, multithreading, file store, Web application, database, Java Bean, JSP, etc.

**三、本大纲主要起草人、审阅人**

主要起草人：刘建华

审阅人：

## 《城市规划与建设地理信息系统》课程简介

**一、课程基本信息**

|  |  |
| --- | --- |
| 课程编号 | 20322173 |
| 课程中文名称 | 城市规划与建设地理信息系统 |
| 课程英文名称 | Geographic Information System for City Planning and Construction |
| 适用专业 | 地理信息科学 |
| 总学时 | 48（含24学时上机） |
| 学分 | 2.5 |
| 先修课程 | 地理信息系统原理、遥感原理 |
| 并修课程 | WebGIS技术与开发、三维地理信息系统技术 |

**二、课程内容简介**

《城市规划与建设地理信息系统》是地理信息系统本科生的一门专业技术课，是地理信息系统在城市规划与建设领域的具体应用与延伸。本课程以GIS分析方法为依托，系统地阐述了城乡规划地理信息系统的基本概念、基本理论问题、基本技术与方法。着重讲解和分析城市规划与建设地理信息系统中典型分析方法（通视分析、流域分析，景观格局分析）和模型；通过本课程的教学与实验，使学生了解城市规划与建设地理信息系统的概念、应用领域以及发展方向；

本课程注重理论与实践相结合，在教学中重视将GIS的基本分析方法和软件工具引入到城市规划与建设所涉及的相关问题的解决中，培养学生利用GIS分析方法和软件工具解决相关问题的能力。针对城市规划与建设中相关具体应用，学会利用GIS软件工具的相关分析方法和分析模型来进行GIS分析操作，解决其中的问题，为GIS理论实践打下基础。

The unit is a technical course for undergraduate students in Geographical Information Science (GIS). It is the GIS technique application in urban planning and construction. Based on the basic GIS spatial analysis method, this unit will introduce the basic concept, theoretical problems, method and technology in GIS application in urban planning and construction. It will pay more attention on the typical GIS spatial analysis methods and models, such as viewshed analysis, landscape analysis, etc. using in urban planning and construction. The outcome from this unit is that the students can understand the basic concepts, research fields and development trends in GIS application of urban planning and construction

Bu combining theory and practice, this unit will arrange some typical examples of GIS application in urban planning and construction. This will help students in using GIS spatial analysis tools to resolve some possible issues existed in urban planning and construction. Active learning method will be used in the teaching process which can promote students thinking and learning actively and cooperatively. This can assure the students to acquire the theoretical knowledge and grasp the practical techniques to resolve some real problems possibly occurred in their future job.

**三、本课程简介起草人、审阅人**

起草人： 蔡国印

审阅人： 赵江洪 日期： 年 月 日

## 《城市遥感 (双语)》课程简介

Course Brief of "Urban Remote Sensing"

**一、课程基本信息 basic information**

|  |  |
| --- | --- |
| 课程编号 | 20324060 |
| 课程中文名称 | 城市遥感（双语） |
| 课程英文名称 | Urban Remote Sensing |
| 适用专业 | 遥感科学与技术 |
| 总学时 | 32 (含8学时上机) |
| 学分 | 2 |
| 先修课程 | 遥感原理、遥感数字图像处理 |
| 并修课程 | WebGIS技术与开发 |

**二、课程内容简介 course introduction**

城市遥感是遥感科学与技术专业本科生的核心专业课程。本课程将系统介绍了城市遥感的基本理论和方法及时间。其内容主要包括城市遥感的基本概念、城市遥感系统、城市特征信息提取、城市环境监测以及城市社会经济分析等。

本课程的教学采用学生主动式学习为主，教师讲授为辅的教学方法，最大程度的激发学生的学习热情，同时培养学生自主学习和解决问题的能力。为了提升学生对遥感原理的认知能力，本课程的学习设置了课内实验，理论与实践相结合可以，不但可以在很大程度生提高学生对城市的理解，同时也锻炼了学生的动手实践能力，为学生日后从事相关工作提供保障。

The unit of Urban Remote Sensing is a core technical course for undergraduate students in Remote Sensing Science and Technology. This unit will discuss the basic principles, methods and application examples of urban remote sensing. It covers the fundamental concepts or urban remote sensing, urban remote systems, urban attribute extraction, urban environmental modeling and analysis, and urban socioeconomic analysis.

Active learning method will be used in the teaching process which can promote students thinking and learning actively and cooperatively. For getting a further understanding of the knowledge in urban remote sensing, practical experiments inside classes are designed. This can assure the students to acquire the theoretical knowledge and grasp the practical techniques on how to employ remote sensing satellite imagery to perform the urban environmental modeling and analysis. It will helpful for students to resolve some problems occurred in their future relative works..

**三、本课程简介起草人、审阅人 Drafters and reviewers**

起草人： 蔡国印

审阅人： 吕书强 王荣华 日期： 年 月 日

## 《数字地面模型》课程简介

**课程基本信息**

|  |  |
| --- | --- |
| 课程编号 | 20322174 |
| 课程中文名称 | 数字地面模型 |
| 课程英文名称 | Digital Terrain Model |
| 适用专业 | 地理信息科学 |
| 总学时 | 32（其中试验16学时） |
| 学分 | 2 |
| 先修课程 | 数字地形测量学、地图学、地理信息系统原理（双语） |
| 并修课程 | 城市空间信息学 |

**课程内容简介**

数字地面模型是测绘类本科课程的学科基础。数字地面模型（Digital Terrain Model，DTM）就是以数字的形式来表示实际地形特征的空间分布。有时所指的地形特征点仅指地面点的高程，就将这种数字地形描述称为数字高程模型。本课程在讲述数字地面模型基本原理的基础上，衬托出国民经济各个行业基于对数字地面模型的应用。学习者在学习过程中可以通过大量的程序实例和相关练习，掌握按用户设定的等高距生成等高线图、透视图、坡度图、断面图、渲染图、与数字正射影像(DOM)复合生成景观图，或者计算特定物体对象的体积、表面覆盖面积等，以及空间复合、可达性分析、表面分析、扩散分析等基本技能和一些高级应用。

Digital Terrain Model (DEM) is the basic subject of surveying and mapping for undergraduate course. First, this course will introduce thebasic principle of DEM, and then, many applications based on DEM will be bring out in a variety of industries. Through a lot of examples of procedures and related practice, the learner should gradually master the basic knowledge, basic skillsand some advanced applications based on DEM.

**三、本课程简介起草人.审阅人**

起草人: 刘祥磊

审阅人：胡春梅

日期：年月日

## 《地理信息系统设计与开发》（双语）课程简介

Course Brief of "GIS Design and Development"

**一、课程基本信息** **Basic Information**

|  |  |
| --- | --- |
| 课程编号 | 20322050 |
| 课程中文名称 | 地理信息系统设计与开发（双语） |
| 课程英文名称 | GIS Design and Development |
| 适用专业 | 地理信息科学 |
| 总学时 | 48 |
| 学分 | 3 |
| 先修课程 | 地理信息系统原理、空间数据库、GIS应用、C#程序设计 |
| 并修课程 | 无 |

**二、课程内容简介** **Course Brief**

《地理信息系统设计与开发》是地理信息科学（GIS）专业的专业技术课程，是GIS工程项目设计开发和管理中的一门重要课程，主要目的在于培养学生对GIS系统构建的分析、设计开发、项目管理和质量监控等方面的综合能力。本课程是地理信息科学专业高级课程，培养学生综合运用专业知识解决实际GIS工程项目中问题的能力，为日后从事相关GIS工程设计开发及项目管理作相应知识储备。课程涉及内容包括：GIS的基本组成、GIS设计思想、内容和标准、GIS设计方法、系统的总体设计、系统详细设计、空间数据库的设计、系统的实施和GIS测试和评价以及GIS设计项目管理与质量保证等内容。课程设计遵循理论联系实际的原则，既注重理论讲授环节也强调实验内容，其中十二项课程实验占全部课程内容的二分之一。

"GIS Design and Development" is a professional foundation course for GIS specialty, and also is an important program of the GIS project design, development and management, which involved include: GIS basic composition, GIS design idea, content and standards, GIS design method, system design, system detailed design, spatial database systems design, implementation of GIS system, design of test and evaluation, and GIS project management, quality assurance, and so on. Curriculum design follows the principle of linking theory with practice; both the focus theory also emphasized the teaching part of the experiment content, including twelve curriculum experiments which is a half of the full course.

**三、本课程简介起草人、审阅人 Drafters and Reviewers of Course Brief**

起草人Drafters：石若明、张健钦

审阅人Reviewers：危双丰

## 《GIS应用（双语）》课程简介

一、课程基本信息

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| --- | --- |
| 课程编号 | 20322058 |
| 课程中文名称 | GIS应用（双语） |
| 课程英文名称 | GIS Applications(Bilingual Education) |
| 课程类别 | 通识教育（ ）大类基础（√ ）  专业核心（ ）专业方向（ ） |
| 课程性质 | 必修（ ）任选（√ ） |
| 适用专业 | 地理信息科学 |
| 总学时 | 24（含8学时实验） |
| 学分 | 1.5 |
| 先修课程 | 地理信息系统原理(双语)、遥感原理与应用（双语）等 |
| 并修课程 | 无 |
| 本课程对毕业要求的  贡献 | 双语了解和掌握地理信息系统GIS的基本概念、GIS中的空间数据、GIS硬、软件构架，和应用框架。 |

二、课程内容简介

随着信息化时代的到来，GIS相关技术在房地产、国防、可持续发展、自然资源、运输和物流等多个领域都有相关的应用，而且将具有越来越广阔应用前景。《GIS应用（双语）》是地理信息科学专业方向及专业特色课，本教学大纲适用于地理信息科学专业本科生教学。本课程的教学内容主要包括：GIS基础、空间数据和案例学习。通过本课程的学习，使学生能用双语了解和掌握地理信息系统GIS的基本概念、GIS中的空间数据、懂得用ArcGIS软件来去解决实际问题的思路。在学完本课程后，学生应具有阅读GIS方面专业书籍的能力，并对GIS的应用有一个较全面的了解，提高利用GIS解决实际问题的能力。

GIS is a technology system that is the whole or part of the earth's surface space for the collection, storage, management, operations, analysis, visualization by computer hardware and software system support. With the rapid development of GIS-related technologies, it has been using in the fields of real estate, defense, sustainable development, natural resources, transport and logistics, and it will have an increasingly application prospects."GIS Applications(Bilingual Education)" is a special basic course, which involved in: basic GIS, Introduction to ArcGIS, Spatial Data and Case Study, and so on. Curriculum design follows the principle of linking theory with practice; both the focus theory also emphasized the teaching part of the experiment content, including 3 curriculum experiments which is a half of the full course. This course also is a professional advanced course for GIS specialty, and students will learn the skills of reading English reference and using tools related the GIS. At last, the students can understand related knowledge and skills in English.

三、本课程简介起草人、审阅人

主要起草人：王文宇，郭明

审阅人： 危双丰

## 《三维地理信息技术》课程简介

**一、课程基本信息**

|  |  |
| --- | --- |
| 课程编号 | 20322175 |
| 课程中文名称 | 三维地理信息技术 |
| 课程英文名称 | Technology of 3D GIS |
| 课程类别 | 通识教育（ ）大类基础（ ）  专业核心（√ ）专业方向（ ） |
| 课程性质 | 必修（ ）任选（√ ） |
| 适用专业 | 地理信息科学 遥感科学与技术 |
| 总学时 | 32（含16学时实验） |
| 学分 | 1.5 |
| 先修课程 | 地理信息系统原理、空间数据库、C#程序设计 |
| 并修课程 | 实用虚拟现实技术 |
| 本课程对毕业要求的  贡献 | 三维地理信息的采集方法、三维空间数据管理、三维空间数据模型、三维空间数据的可视化及三维地理信息系统开发工具 |

**二、课程内容简介**

三维地理信息技术伴随着现代三维信息获取手段的提高和计算机技术的发展。使用三维数据描述地理对象，即所有的对象都通过三维立体坐标（X，Y，Z或经纬度与高程）进行表示。三维GIS在日益增长的三维空间信息需求的牵引和蓬勃发展的现代新兴技术的驱动下得到了稳步的发展。课程主要介绍三维地理信息系统技术的一些基本理论、方法和技术应用实例，包括三维地理信息的采集方法、三维空间数据管理、三维空间数据模型、三维空间数据的可视化、三维地理信息系统开发工具、三维地理信息系统实例以及三维地理信息查询检索、分析处理和综合应用方面的内容。本课程注重介绍新理论、新方法，通过大量的实践教学环节培养学生的实际动手能力、解决实际问题的能力和科学研究的素养，使学生既了解三维地理信息技术的理论基础又初步掌握三维地理信息系统相关的软件应用方法。该课程要求学生已具备一定的计算机知识、地图遥感知识和已掌握相关软件的应用技术。

Three dimension geographic information technologies are developed with the improvement of modern 3D information acquisition technique and computer technique. The course mainly introduce the basic principles, methods, and applications of 3D GIS, involving in the acquisition methods of 3D data, monuments of 3D spatial data, 3D spatial data models, visualization of 3D spatial data, 3D GIS developing tools and spatial analysis of 3D data. The course emphases on new theories and methods, especially cultivate hands on ability of students. Two parts of the course lecture are divided into theory lecture and practicum. Some knowledge of computer programming, mapping and remote sensing, as well as techniques of some applied software are required in advance.

**三、本课程简介主要起草人、审阅人**

起草人：王文宇，石若明

审阅人：蔡剑红

## 《GIS基础应用技能》课程简介

一、课程基本信息

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| --- | --- |
| 课程编号 | 20322158 |
| 课程中文名称 | GIS基础应用技能 |
| 课程英文名称 | GIS-based application skills |
| 适用专业 | 地理信息科学、测绘工程 |
| 总学时 | 16（含8学时上机） |
| 学分 | 1 |
| 先修课程 | 地理信息系统原理（双语） |
| 并修课程 | 无 |

**二、课程内容简介**

GIS基础应用技能是地理信息科学和测绘工程专业学生的专业基础任选课。本课程分为四个方面，即初识Google Earth、Google Earth高级功能及应用、MapInfo概述和MapInfo高级功能及应用。这四部分分别讲解Google Earth的基本功能、距离量算、图层管理和使用多媒体；Google Earth的地标操作、地图叠加、模拟飞行、数据处理和应用案例等高级功能；MapInfo软件的地图数据编辑、属性表编辑、数据查询与数据统计等初级功能；以及地图制作与输出和应用案例等高级功能。在此基础上，课程安排了一个与讲解内容对应的综合实验，即从简单的电子地图数据采集到最后排版出图的实践过程。通过本课程的学习，使学生了解Google Earth 和MapInfo软件的使用，加深对地理信息和空间数据表达方法的认识，使学生能够使用这些基础软件解决实际问题，从而为学生进一步学习高级的GIS知识和软件服务。

GIS-based application skills are an optional course for the students of Geographic Information System and Surveying and Mapping Engineering. The course is divided into four sections, namely the introduction of Google Earth, Google Earth advanced feature and application, MapInfo Overview and MapInfo advanced feature and application. The four sections respectively explain the basic functions of Google Earth, calculating the distance, layer management and use of multimedia; Google Earth landmark operation, map overlay, flight simulation, data processing and application cases of advanced features; map data editing of MapInfo software, attribute table editing, data query and statistics and other primary functions; map production and output and other advanced application cases. On this basis, the curriculum explains a corresponding comprehensive experiment in keeping with the content, namely a practice process from simple electronic map data collection to final printing out figure.Through this course, students can understand the use of Google Earth and MapInfo software, deepen the understand of the visualization method of geographic information and spatial data, so students can use these basic software to solve practical problems, and then students can further study the advanced GIS knowledge and software.

**三、本课程简介起草人、审阅人**

起草人： 张健钦

审阅人： 张学东

## 《城市空间信息学》课程简介

**一、课程基本信息**

|  |  |
| --- | --- |
| 课程编号 | 20322208 |
| 课程中文名称 | 城市空间信息学 |
| 课程英文名称 | Urban Spatial Information Science |
| 适用专业 | 测绘工程、地理信息科学 |
| 总学时 | 32（含8学时上机） |
| 学分 | 2 |
| 先修课程 | 地理信息系统原理（双语）、空间数据库 |
| 并修课程 |  |

**二、课程内容简介**

城市空间信息学是测绘工程和地理信息科学本科专业高年级学生的一门专业技术课。在学生已有地理信息系统相关概念的基础上，着重对城市空间信息的相关理论内容及应用技术进行讲解，为学生考研及就业提供理论基础和技术支持。本课程内容主要包括城市空间信息学的基本概念、理论框架、城市空间数据的描述、表达与获取、处理、分析等。本课程系统地阐述了城市空间信息学的基本概念、基本理论问题、基本技术与方法以及可视化等。

本课程的教学采用教授负责，团队共同承担课程授课的学科群团队方式，最大程度发挥团队教师所长，以为学生提供的本课程相关的最新的理论和应用技术。理论课程部分的授课，以教师讲授为主，应用部分的学习，以案例式教学为主，同时辅之以必要的讨论课，以培养学生独立思考和解决问题的能力。为学生的考研和就业奠定基础。

Urban spatial information science is a core course for undergraduate studies in majors of Surveying and Mapping, as well as Geographical Information Sciences. Based on the related theoretical knowledge in Geographical Information System, this course will address the urban spatial information theories and application technologies. It includes the basic concepts, theoretical framework, and the cognition, representation, organization as well as analysis of spatial data mainly concentrating on the urban areas. This unit states in detail the basic concepts, basic principles, technologies and methods as well as visualization concerned in the urban spatial information science.

This course is given by a teaching team lead by a professor, which can make a good use of every member’s advantages, and transfer the advanced theory and most recently developed application technology to the students. Lecturing is the major teaching method for theoretical knowledge learning, and cased study is used for learning of applications. The outcome from this class can provide a strong basis for students to pursue further study or job applications.

**三、本课程简介起草人、审阅人**

起草人： 杜明义

审阅人： 赵江洪 日期： 年 月 日

## 《人文地理学》课程简介

**一、课程基本信息**

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| 课程编号 |  |
| 课程中文名称 | 人文地理学 |
| 课程英文名称 | Human Geography |
| 适用专业 | 地理信息科学 |
| 总学时 | 32 |
| 学分 | 1.5 |
| 先修课程 | 自然地理学、地理信息系统原理（双语）、地图学 |
| 并修课程 | 无 |

**二、课程内容简介**

人文地理学是地理学发展到一定阶段兴起的一门交叉性很强的学科，它以地球表面人类各种社会经济活动为研究对象，其分支学科主要有人口地理学、聚落地理学、文化地理学、政治地理学、行为地理学、旅游地理学等。本课程是在强调人文地理学内容的系统性与完整性的前提下，突出以人地关系为中心，文化理论为基础的特点，构建人文地理学的知识框架。因此，人文地理学对于地理信息科学专业是一门很重要的专业课。通过本课程的学习，使学生了解文化景观的空间分布与空间差异，提高对于人类社会经济活动和文化活动的深层理解，并能够对人类各种文化现象及其与地理环境的关系进行正确分析，树立科学的人地观。

Human geography is a highly cross-disciplinary which based on geography develop to a certain stage, it takes human socio-economic activities as study object, its mainly branches are population geography, settlement geography, cultural geography, political geography, behavioral geography, tourism geography, etc. This course is in the premise of emphasizes systematic and integrity of human geography, highlighting the characteristics of .relationship between people and land as the center, cultural theory as foundation, construction knowledge framework of human geography. Therefore, human geography is a very important basic course for the major of geographic information system. Through this course, to enable students to understand the spatial distribution and spatial differences of cultural landscape, to improve deep understanding of human social and economic activities and cultural activities, and make proper analysis of various cultural phenomena and their relation to human and geographical environment, establish a scientific view of human and land.

**三、本课程简介起草人、审阅人**

起草人：沈涛

审阅人：