《离散数学》课程中英文简介

Discrete Mathematics

课程代码：070093B **Course Code：**070093B

课程名称：离散数学 **Course Name：**Discrete Mathematics

学时：48 **Periods：**48

学分：3 **Credits：**3

考核方式：考查 **Assessment：**Check

先修课程：程序设计基础与应用、 **Preparatory Courses：**Programming

高等数学、线性代数 fundamentals and Applications、

Advanced mathematics、Linear Algebra

《离散数学》是现代数学的一个重要分支，是计算机专业的核心课程之一，是学习专业理论必不可少的数学工具。它以研究离散量的结构和相互关系为主要目标，其研究对象一般是有限或可列个元素，充分描述了计算机科学离散性的特点。本课程介绍离散数学各分支的基本概念、基本理论和研究方法、研究工具，主要内容包括数理逻辑、集合论、代数系统、图论四大部分，为学习计算机各专业课程准备必要的数学知识，提供数学模型。通过本课程的学习不仅使学生掌握离散数学的基础知识和基本理论，为进一步学习后续课打好扎实的数学基础；同时能掌握处理离散对象的一些基本方法，了解数学中的抽象思维与计算机科学实践之间的内在联系，从而培养和提高学生的抽象思维能力、逻辑推理能力，以及运用这些思想去解决实际问题的能力，为今后继续学习和工作提供有力的工具和方法，为从事计算机的应用提供坚实的理论基础。

"Discrete Mathematics" is a major branch of modern mathematics, a core curriculum of computer science, which is essential for the students to learn the mathematical tools for professional theories. The course is to study the discrete structure and relationships as the main target, and its study is generally about limited elements, which fully describes the dispersion characteristics of computer science. Discrete Mathematics introduces the basic concepts of various branches of the basic theories and research methods, research tools, mainly including mathematical logic, set theory, algebraic systems, graph theory, four major professional courses, which will help students learn computer to prepare the necessary mathematical knowledge, provide mathematical models. Through studying this course, students learn not only to master the basic knowledge of discrete mathematics basic theory for the further study but also follow-up to lay a solid mathematical foundation. At the same time, students can master some basic methods to deal with discrete objects, and improve students’ mathematical abstract thinking and understand the intrinsic link of computer scientific practice so as to cultivate and improve their ability to abstract thinking, logical reasoning ability, and students can use these ideas to solve practical problems for future study and work to provide effective tools and methods for applications in computer and provide a solid theoretical basis.