理学院（专业）课程简介

课程编号：1713001030

课程名称：常微分方程

学分/学时： 3/48

先修课程：数学分析，高等代数

适用专业：数学与应用数学专业，统计专业

课程性质：必修

教　　材：（1）刘婧　主编. 常微分方程（自编讲义）. 2015

主要参考书 ：

（1）周义仓，靳祯　主编. 常微分方程及其应用（第二版）. 科学出版社,2010.

（2）王高雄，周之铭等 主编. 常微分方程（第三版）. 高等教育出版社,2006.

内容简介：

《常微分方程》研究的主要内容是求解常微分方程（组）和讨论解的性质，它是统计学专业、数学与应用数学专业的专业基础课，是后继课程《数学物理方程》,《数值计算》等的重要基础。课程在大学二年级开设，先修课程《数学分析》和《高等代数》。课程主要内容有：一阶微分方程的初等积分法；初值问题解的存在唯一性；线性微分方程（组）的解的结构及常系数线性微分方程（组）的解法。

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Course Description

School of Science Faculty

Course Code：1713001030

Course Name：Ordinary Differential Equations

Credit/Hours：3/48

Textbooks： (1) Jing Liu, Ordinary differential equation (Handout by Instructor), 2015.

Reference Books：

（1）   Yicang Zhou, Zhen Jin, Ordinary differential equation and its application (the Second Version), Science Press, 2010.

（2）   Gaoxiong Wang, Zhiming Zhou, et al. Ordinary differential equation (the Third Version), Higher Education Press, 2006.

Course Description: The major contents of Ordinary Differential Equations are how to solve the equations and what to discuss about the properties of solutions. Ordinary Differential Equations is not only the core course of Statistics as well as Mathematics and Applied Mathematics, but also the footstone of following courses such as Mathematical Physical Equation, Numerical Calculation, and etc. Ordinary Differential Equations is provided for sophomores with the prerequisites of Mathematical Analysis and Advanced Algebra. The main topics in the course include: the elementary integral method for the first order differential equation; the existence and uniqueness of initial value problems; the structure of solutions to the linear differential equation (system) and methods of solving the linear differential equation (system) with constant coefficients.