

## 0010072 电路分析基础-1

**课程编码:** 0010072

**课程名称:** 电路分析基础-1

**英文名称:** Circuit Analysis Foundation-1

**课程类型:** 学科基础必修课

**学分:** 2 **总学时:** 32

**面向对象:** 自动化、机器人工程、人工智能、电子科学与技术、电子信息工程（实验班）、电子信息工程、通信工程、计算机科学与技术（实验班）、物联网工程、信息安全、计算机大类软件工程专业本科生

**先修课程:** 高等数学，大学物理，工程数学，线性代数

**考核形式:** 平时成绩+考试

**撰写人:** 宋建国

**课程简介:** (250-300 字)

电路分析基础-1 是信息学部自动化、机器人工程、人工智能、电子科学与技术、电子信息工程（实验班）、电子信息工程、通信工程、计算机科学与技术（实验班）、物联网工程、信息安全、计算机大类软件工程专业本科生开设的学科基础必修课。本课程的任务是使学生掌握电路分析的 KVL 和 KCL 定理、基本元气件的电压电流约束关系、电路化简的基本定理、常用电工常用仪器仪表的使用。教学内容重点：电路模型中的参考方向与电功率计算，电路等效变换中的电阻电路串并联等效，支路电流法与网孔电流法的电路求解，叠加原理和诺顿定理，动态电路中的电容电感元件与初始值电路计算，电子元器件以及示波器、万用表和信号发生器的认识与使用。教学内容的难点：KVL 和 KCL 方程的列解，含有受控源的等效电阻计算，节点电压法的电路求解，戴维南定理，动态电路中三要素法的一阶电路求解。

**推荐教材或主要参考书:**

- [1] 邱关源，罗先觉主编，电路（第 5 版），高等教育出版社，2006
- [2] 李翰逊，简明电路分析基础，高等教育出版社，2002

## 0010072 Circuit Analysis Foundation-1

**Course Number:** 0010072

**Course Title:** Circuit Analysis Foundation-1

**Course Type:** Compulsory course of subject basis

**Credit:** 2                      **Total Credit Hours:** 32

**Students:** Undergraduate students majoring in automation, robotics, artificial intelligence, electronic science and technology, communication engineering, electronic information engineering, computer science and technology, internet of things, information security, and software

**Prerequisites:** Advanced mathematics, college physics, engineering mathematics, linear algebra

**Evaluation Method:** Course participation + written exams

**Writer:** Song Jianguo

### **Course Description:**

Circuit Analysis Foundation-1 is one of the compulsory courses of subject basis for undergraduate students majoring in automation, robotics, artificial intelligence, electronic science and technology, communication engineering, electronic information engineering, computer science and technology, internet of things, information security, and software. The main target of this course is to make students grasp KVL and KCL theorem of electric circuit analysis, voltage and current constraint relation of basic elements, basic theorem of electric circuit simplification, usage of common electrical instruments. The teaching contents are mainly covered by the following aspects: reference direction and electric power calculation in electric circuit model, series and parallel equivalent of the resistance circuit in the circuit equivalent transformation, solution of branch current method and mesh current method, the superposition principle and Norton's theorem, calculation of initial value circuit in dynamic circuit with capacitance and inductance elements, knowledge and use method of electronic element, oscilloscope, multimeter and signal generator. The difficulties of teaching contents are described as followings: solution of KVL and KCL equations, calculation of equivalent resistance with controlled source, solution of node voltage method, Thevenin's theorem, solution of first-order circuit with three element method in dynamic circuit.

### **Recommended Textbooks/References:**

1. Guanyuan Qiu, Xianjue Luo, Electric Circuit (5th Edition), *Higher Education Press*, 2006
2. Hanxun Li, Concise Circuit Analysis Foundation, *Higher Education Press*, 2002

## 0007947 高级语言程序设计

**课程编码:** 0007947

**课程名称:** 高级语言程序设计

**英文名称:** High Level Language Programming

**课程类型:** 公共基础必修课程

**学分:** 3.5 **总学时:** 56

**面向对象:** 计算机科学与技术(实验班)、物联网工程、信息安全、计算机大类

**先修课程:** 无

**考核形式:** 平时成绩+阶段编程测验+期末考试

**撰写人:** 蔡越江

### 课程简介:

本课程依托 C 语言进行计算机科学的启蒙教育,初步培养学生的计算思维能力,训练程序设计的基本方法和技巧,使学生能够通过使用高级语言编写程序解决简单的实际问题,为解决复杂工程问题打下坚实基础。本课程在传授知识的同时,还要训练学生动手能力、培养分析问题和解决工程问题的能力,注重能力的培养、个性的发展。课程是后续理论和实践教学的基础和重要工具。课程主要内容包括 C 语言基础语法、三种基本的程序控制结构、数据的组织结构、函数、程序的组织结构、模块化的程序设计思想与方法、初识计算机算法以及程序的基本调试技巧等。

### 推荐教材或主要参考书:

- [1] 廖湖声,叶乃文,周珺编著. C 语言程序设计案例教程(第 3 版). 人民邮电出版社, 2018 年 11 月
- [2] 李文新等. 程序设计导引及在线实践(第 2 版). 清华大学出版社, 2017 年 1 月
- [3] (美) Brian W.Kernighan,Dennis M.Ritchie 著. C 程序设计语言(英文版)(第 2 版). 机械工业出版社, 2006 年 8 月
- [4] P.J.Deitel,H.M.Deitel 著. C 大学教程(第 5 版)(英文版). 电子工业出版社, 2010 年 5 月

## 0007947 High Level Language Programming

**Course Number:** 0007947

**Course Title:** High Level Language Programming

**Course Type:**

**Credit:** 3.5                      **Total Credit Hours:**56

**Students:** Undergraduate students majoring in computer science

**Prerequisites:** no

**Evaluation Method:** Course participation + Stage programming test +written exams

**Writer:** Cai Yuejiang

**Course Description:**

High-level language programming is one of the public basic compulsory courses for undergraduate students Major in computer science. This course relies on the C language for computer science initiation education, initially cultivates students' computational thinking ability, trains the basic methods and skills of program design, enables students to write programs to solve simple practical problems, and lays a solid foundation for solving complex engineering problems. While imparting knowledge, this course also trains students' hands-on ability, develops the ability to analyze and solve engineering problems, and emphasizes the cultivation of abilities and the development of individuality. The course is the foundation and important tool for subsequent theoretical and practical teaching. The teaching contents are mainly covered by the following aspects: C language basic grammar, three basic program control structures, data organization structure, function, program organization structure, modular program design ideas and methods, first understanding of computer algorithms and basic debugging skills of programs

**Recommended Textbooks/References:**

1. Liao Husheng, Ye Naiwen, and Zhou Jun. C Language Programming Case Tutorial (3rd Edition). People's Posts and Telecommunications Publishing House, November 2018
2. Li Wenxin, etc. Program Design Guide and Online Practice (2nd Edition). Tsinghua University Press. January 2017
3. Brian W. Kernighan, Dennis M. Ritchie. C Programming Language (2nd Edition). Machinery Industry Press. August 2006
4. P.J.Deitel, H.M.Deitel. C University Course (5th Edition). Electronic Industry Press. May 2010

## 0007365 高级语言程序设计课设

**课程编码：**0007365

**课程名称：**高级语言程序设计课设

**英文名称：**Practice for High Language Programming

**课程类型：**学科基础必修课程

**学分：**1.5

**总学时：**45

**面向对象：**计算机科学与技术（实验班）、物联网工程、信息安全、计算机大类，电子科学与技术、电子信息工程（实验班）、电子信息工程、通信工程、自动化、机器人工程、软件工程类本科生

**先修课程：**高级语言程序设计

**考核形式：**面试+实践报告

**撰写人：**蔡越江

**课程简介：**

高级语言程序设计课设是信息学部为计算机大类等专业本科生开设的学科基础必修课程。本课程是高级语言程序设计课程的后续实践课程。课程通过一个趣味盎然的游戏程序的设计与实现使学生亲身经历一个对初学者而言较为复杂的程序的设计与开发过程。巩固和拓展高级语言程序设计课程的教学成果。培养学生综合运用高级语言程序设计课程所学知识，编写C语言程序解决实际问题的能力。

**推荐教材或主要参考书：**

无

## **0007365 Practice for High Language Programming**

**Course Number:** 0007365

**Course Title:** Practice for High Language Programming

**Course Type:** basic compulsory course

**Credit:** 1.5                      **Total Credit Hours:** 45

**Students:** Undergraduate students majoring in computer science

**Prerequisites:** High Level Language Programming

**Evaluation Method:** Interview + Practice report

**Writer:** Cai Yuejiang

### **Course Description:**

Practice for High Language Programming is one of the public basic compulsory courses for undergraduate students Major in computer science. This course is a follow-up practical course of the advanced language programming course. Through the design and implementation of an interesting game program, the course enables students to experience the design and development process of a program that is more complicated for beginners. Consolidate and expand the teaching results of high-level language programming courses. Cultivate students' ability to comprehensively use the knowledge learned in high-level language programming courses to write C language programs to solve practical problems.

### **Recommended Textbooks/References:**

no