



蘭州大學 | LANZHOU
UNIVERSITY

COURSE DESCRIPTION

Student Name : Cai Rui

Student ID : 320160944981

School : School of Information

Science and Engineering

Major : Computer Science and Technology

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Courses in Mathematics

The following courses are provided by School of Mathematics and Statistics, Lanzhou University.

Advanced Mathematics (1)

Course Type : Required

Credits : 6	Class Hours(Amount of Teaching) : 108 (6 class hours per week) Self Study Time : 108 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2016 – 2017, semester 1

Assessment Methods(100%) = Final written exam (80%) + Attendance & Participation (5%) + Assignments(15%)

Examination form : Written sit-in exam

Prescribed Books :

1. School of Mathematical Sciences, Tongji University. Advanced Mathematics (7th Edition), Book 1. ISBN : 978-7-04-039663-8
2. Zhang Zhiqiang. Advanced Mathematics , Book 1 : Unary Calculus . ISBN : 9787311027926

Description :

Advanced Mathematics is the most important basis course for majors of science and technology at LanZhou University. This subject studies the functions, applies the method of limits (i.e. limit process like infinitesimals and infinite approximation) to analyze and deal with issues.

Contents :

Functions, the definition of limits and continuous functions; Derivative and Differential; Principles of single variable functions' differential and its application; Indefinite integral of single variable functions; The definition of single variable functions' definite integral and its application; The definition of differential equations

Advanced Mathematics (2)

Course Type : Required

Credits : 5	Class Hours(Amount of Teaching) : 90 (5 class hours per week) Self Study Time : 90 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2016 – 2017, semester 2

Assessment Methods(100%) = Final written exam (80%) + Attendance & Participation (5%) + Assignments(15%)

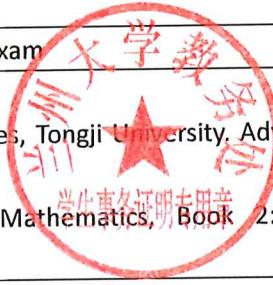
Examination form : Written sit-in exam

Prescribed Books :

1. School of Mathematical Sciences, Tongji University. Advanced Mathematics (7th Edition), book 2. ISBN : 978-7-04-039662-1
2. Zhang Zhiqiang. Advanced Mathematics, Book 2: Multivariate Calculus . ISBN : 9787311027933

Description :

Advanced Mathematics is the most important basis course for majors of science and technology



at LanZhou University. This subject studies the functions, applies the method of limits (i.e. limit process like infinitesimals and infinite approximation) to analyze and deal with issues. This is a continuation to course Advanced Mathematics (1), which emphasize more on multivariable functions and its applications.

Contents :

Vector algebra and space analytic geometry; The theory of multivariable differential calculus and its application; Principles of multiple integral; Curvilinear integral and curved area integral; Green formula; Gauss formula and Stokes formula; Infinite series; Improper integral and parameter improper integral; Basic concepts of partial differential equations

Linear Algebra

Course Type : Required

Credits : 4	Class Hours(Amount of Teaching) : 72 (4 class hours per week) Self Study Time : 72 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2017 – 2018, semester 1

Assessment Methods(100%) = Final written exam (80%) + Attendance & Participation (5%) + Assignments(15%)

Examination form : Written sit-in exam

Prescribed Books :

1. Luo Yanfeng. Advanced Mathematics, Book 3 : Linear Algebra. ISBN : 9787311031053

Description :

This course includes the theory of solving linear equations, the basic theory of matrix, linear space, linear transformation and quadratic form, which are useful in science and engineering.

Contents :

Theory of determinants; Principles of linear system of equations; Principle and application of matrix algebra; Vector spaces; Eigenvalues and eigenvectors; Orthogonality and least squares problems; Principles of linear transformation; The definition of Euclidean space; N real elements quadric from

Probability and Mathematical Statistics

Course Type : Required

Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week) Self Study Time : 54 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2017 – 2018, semester 2

Assessment Methods(100%) = Final written exam (80%) + Attendance & Participation (10%) + Assignments(10%)

Examination form : Written sit-in exam

Prescribed Books :

1. Chen Xiru. Probability and Mathematical Statistics. ISBN : 9787312018381

Description :

This course is to introduce students to basic probability theory, modeling, quantification and analysis of uncertainty.

Contents :

An introduction to probability theory; Probabilistic models; Conditional probability; Discrete and continuous random variables; Expectation and conditional expectation; Limit Theorems; Bernoulli and Poisson processes; Bayesian estimation and hypothesis testing

SPSS Statistical Analysis

Course Type : Optional

Credits : 2	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
	Self Study Time : 36 Hours (At least 1 hour per class hour)

Semester : Academic Year 2017 – 2018, semester 2

Assessment Methods(100%) = Final written exam (60%) + Attendance & Participation (10%) + Assignments(30%)

Examination form : Written sit-in exam with computer

Prescribed Books :

1. Xie Leilei, Song Zhigang, He Hongxu. SPSS statistical analysis practical tutorial. ISBN : 9787115302212

Description :

This course is to introduce students to basic usage of IBM's SPSS software in analyzing and modeling probability and statistical problems.

Contents :

Introduction to SPSS; variables; data files; system parameters; statistical description; statistical graph making; mean comparison and T test; variance analysis; correlation analysis; regression analysis; cluster analysis and discriminant analysis; factor analysis; nonparametric test and other principles

Courses in Computer Science

The following courses are offered by the School of Information Science & Technology as part of the Computer Science and Technology major.

Based on the practices of the robot

Course Type : Optional

Credits : 2	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
	Self Study Time : 36 Hours (At least 1 hour per class hour)

Semester : Academic Year 2016 – 2017, semester 1

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (5%) + Assignments(25%)

Examination form : The final assessment is to design smart cars in groups, complete algorithm design, project report, and then make project presentation and defense.

Prescribed Books :

1. Yang ZhenShan, Gong PeiZeng, Fundamentals of Computers. ISBN : 9787040153897

Description :

This course includes the internal structure of the computer and the working principle, which is the necessary knowledge in the introduction to computer.

This course also introduces github and gitbook to improve students' level of cooperation and communication to complete tasks.

Part of the content of robots and sensors is the focus of the course. It combines software and hardware well, which is interesting and allows students to have a better understanding of the connection between computer software and hardware. Students will learn how to implement control logic for Arduino smart cars with ASU VIPLE. Students will also learn to assemble robots, master wireless control robots to perform various actions, and complete the car maze competition. By learning this course, students will understand the basic concepts, steps, and sensor-assisted processes of event-driven programming.

Contents :

Computer basics; Version control with git; Introduction to Github and Gitbook; Basic knowledge of programming languages; Introduction to ASU VIPLE platform; Basic problem solving techniques

Programming with C Language

Course Type : Optional

Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week) Self Study Time : 108 Hours (At least 2 hours per class hour)
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Semester : Academic Year 2016 – 2017, semester 2

Assessment Methods(100%) = Final written exam (60%) + Attendance & Participation (10%) + Assignments(30%)

Examination form : Written sit-in exam

Prescribed Books :

1. Stephen Prata, C Primer Plus : 6th. ISBN : 9787115390592

Description :

The course teaches C programming language to introduce students to programming, as well as other useful tools and concepts in programming design such as memory management and task management in operating system, basic data structure and basic algorithm. It aims to make the students understand the basic processes and skills of programming, master the basic methods of analyzing and solving the problems in computers, and possess the basic abilities of programming in high level programming languages such as C.

Contents :

Basic syntax of C programming language; Variables and data types; Operators; Control flow; Arrays; Functions; Character strings; Debugging; Pointers; Structures; File I/O; The Standard C Library; program development procedure; problem solving techniques.

Lab Course for C Programming

学生事务证明专用章

Course Type : Optional

Credits : 0.5	Class Hours(Amount of Teaching) : 18 weeks
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Semester : Academic Year 2016 – 2017, semester 2
Assessment Methods(100%) = Attendance & Participation (50%) + Projects and Assignments(50%)
Examination form : None
Prescribed Books :
1. Stephen Prata, C Primer Plus : 6th. ISBN : 9787115390592
Description :
This is the experiment course which requires students to put the knowledge from "The Foundation of Programming design" into practice.
Contents :
Students are required to solve problems, finish coding tasks, demonstrate building/running results using C programming language.

Discrete Mathematics	
Course Type : Required	
Credits : 4	Class Hours(Amount of Teaching) : 72 (4 class hours per week) Self Study Time : 72 Hours (At least 1 hour per class hour)
Semester : Academic Year 2017 – 2018, semester 1	
Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (5%) + Assignments(25%)	
Examination form : Written sit-in exam	
Prescribed Books :	
1. Fang Shichang, Discrete Mathematics. ISBN : 9787560621579	
Description :	
The topics that are covered in this course are the most essential ones, those that will touch every Math and Science student at some point in their education. The goal of this course is to build the mathematical foundation for computer science courses such as data structures, algorithms, relational and database theory, and for mathematics courses such as linear and abstract algebra, combinatorics, probability, logic and set theory, and number theory.	
Contents :	
Sets; Logic; Number Theory; Proofs; Functions; Relations; Graph Theory; Statistics; Combinatorics; Sequences and Series	

Introduction to Computer Science	
Course Type : Required	
Credits : 2	Class Hours(Amount of Teaching) : 36 (2 class hours per week) Self Study Time : 36 Hours (At least 1 hour per class hour)
Semester : Academic Year 2017 – 2018, semester 1	
Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)	
Examination form : Written sit-in exam	

Prescribed Books :
1. Behrouz Forouzan, . Foundation of Computer Science Third Edition. ISBN : 9787111511632
Description :
The course introduces the history of computer, basic knowledge, the structure of computer, computer data organization and software, programming as well as the design of programming and the information system. It also introduces the communication and network of computer, the application, some computer aid technology and advanced technology and the general impact that the computer had in society.
Contents :
A brief historical overview of how Computer Science was created and what non-trivial problems had to be solved at different points in time;
Description of Data and the description of Algorithms;
The design and basic operation of a digital computer;

The Foundation of the Programming Design	
Course Type : Required	
Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week) Self Study Time : 108 Hours (At least 2 hours per class hour)
Semester : Academic Year 2017 – 2018, semester 1	
Assessment Methods(100%) = Final written exam (60%) + Attendance & Participation (10%) + Assignments(30%)	
Examination form : Written sit-in exam	
Prescribed Books :	
1. Stephen Prata, C Primer Plus : 6th. ISBN : 9787115390592 2. He QinMing, Yan Hui. C Programming Language Design, 3rd Edition. ISBN : 9787040432183	
Description :	
The course teaches C programming language to introduce students to programming, as well as other useful tools and concepts in programming design such as memory management and task management in operating system, basic data structure, basic algorithm, and version control system such as git/svn. It aims to make the students know the components of the high level programming language, understand the basic processes and skills of programming, master the basic methods of analyzing and solving the problems in computers, and possess the basic abilities of programming in high level programming languages such as C.	
Contents :	
Basic syntax of C programming language; Variables and data types; Operators; Control flow; Arrays; Functions; Character strings; Debugging; Pointers; Structures; File I/O; The Standard C Library; program development procedure; problem solving techniques.	

Programming Basic Experiment	
Course Type : Required	
Credits : 1	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
Semester : Academic Year 2017 – 2018, semester 1	

Assessment Methods(100%) = Attendance & Participation (50%) + Projects and Assignments(50%)
Examination form : None
Prescribed Books :
1. Stephen Prata, C Primer Plus : 6th. ISBN : 9787115390592
2. He QinMing, Yan Hui. C Programming Language Design, 3rd Edition. ISBN : 9787040432183
Description :
This is the experiment course which requires students to put the knowledge from "The Foundation of Programming design" into practice.
Contents :
Students are required to solve problems, finish coding tasks, demonstrate building/running results using C programming language.

Electronic Circuit	
Course Type : Required	
Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week) Self Study Time : 54 Hours (At least 1 hour per class hour)
Semester : Academic Year 2017 – 2018, semester 2	
Assessment Methods(100%) = Final written exam (80%) + Attendance & Participation (10%) + Assignments(10%)	
Examination form : Written sit-in exam	
Prescribed Books :	
1. Stephen Prata, C Primer Plus : 6th. ISBN : 9787115390592	
Description :	
The main contents of this course include basic methods and theorems of analog circuit analysis. "Static analysis, dynamic analysis, and then steady-state analysis" serves as the education system of this course, which aims to provide the students with basic knowledge for their follow-up courses and scientific researches.	
Contents :	
Transient analysis for the first-order and second-order circuits; Resonance circuits; Magnetically coupled circuits and three-phase AC circuits; Steady-state analysis of the circuits when stimulated by sinusoidal or non-sinusoidal periodic signals; Nonlinear circuits	

Object-Oriented Programming	
Course Type : Required	
Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week) Self Study Time : 108 Hours (At least 2 hours per class hour)
Semester : Academic Year 2017 – 2018, semester 2	
Assessment Methods(100%) = Final online exam (50%) + Attendance & Participation (5%) + Assignments & Course Project(45%)	
Examination form : Online exam	
Prescribed Books :	

1. Ma Jun, Fan Mei, Java Object Oriented Programming : 2nd Edition. ISBN : 9787302376743

Description :

The main purpose of this course is to introduce object oriented programming concept to students by teaching Java programming language. It aims at helping student get familiar with object oriented programming concepts such as inheritance, polymorphism, encapsulation and design principles of object oriented program. By the end of the semester, students are required to complete a self-designed course project including documentation.

Contents :

JVM working principle and Java language foundation; object-oriented programming principle and Java language implementation; learning of Java special keywords and advanced object-oriented principle; Java exception handling; input and output class library; GUI programming foundation; multi-threaded programming technology; Network Programming; Collection Abstraction in Java, Database Programming Fundamentals

Basic Experiments for Circuit & Electronic Technology

Course Type : Required

Credits : 1	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
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Semester : Academic Year 2017 – 2018, semester 2

Assessment Methods(100%) = Attendance & Participation (50%) + Project & Assignments(50%)

Examination form : None

Prescribed Books :

1. Xie Zimei, Electronic Circuit Synthetic Design. ISBN : 9787560935065

Description :

Introduce common-used electronic components. Students will master the welding techniques after accomplishing the task of assembling a radio.

Contents :

Introduction to common-used electronic components; Assembling a radio; Mastering welding techniques using electronic soldering iron; Basic debugging and maintenance methods of electronic products

Design of Object-oriented Technology

Course Type : Required

Credits : 1	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
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Semester : Academic Year 2017 – 2018, semester 2

Assessment Methods(100%) = Attendance & Participation (50%) + Project & Assignments(50%)

Examination form : None

Prescribed Books :

1. Ma Jun, Fan Mei, Java Object Oriented Programming : 2nd Edition. ISBN : 9787302376743

Description :

This is the experiment course which requires students to put the knowledge from “Object-oriented Programming” into practice.

Contents :



Students are required to solve problems given on each class, finish coding tasks, demonstrate building/running results with object-oriented design and implementation in Java.

Assembly Language

Course Type : Required

Credits : 2	Class Hours(Amount of Teaching) : 36 (2 class hours per week) Self Study Time : 72 Hours (At least 2 hours per class hour)
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Semester : Academic Year 2018 – 2019, semester 1

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Prescribed Books :

1. Wang Shuang, Assembly Language (3rd Edition). ISBN : 9787302333142

Description :

This course is intended to teach students x86 assembly programming. It covers basics about computer architecture, data representation and low-level programming. In this course, students will learn how to write, compile, link and debug 8086 assembly programs on MS-DOS system.

Contents :

The general computer architecture; Data representation and counting systems; The fundamentals of the assembly language; Debug programs at the machine level

Data Structure

Course Type : Required

Credits : 4	Class Hours(Amount of Teaching) : 72 (4 class hours per week) Self Study Time : 72 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2018 – 2019, semester 1

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Prescribed Books :

1. Yan Weimin, Wu Weimin, Data Structure (Described in C). ISBN : 978130203683

2. Robert Sedgewick, Kevin Wayne, Algorithms, Fourth Edition. ISBN : 9787115293800

Description :

This is an important basic course for students in computer science major. The research scope of data structure mainly involves the realization of logical structure, storage structure and operation of data, as well as common search and sorting techniques. Its content is the basis of programming (especially non-numerical computing programming), as well as an important basis for designing and implementing compilers, operating systems, data systems and other system programs and large-scale application programs. Through the study of this course, students can choose the storage structure of data correctly and reasonably in the process of software development, and design algorithms effectively, in order to improve the overall quality of software.

Contents :
1. Big O notation
2. Data structures:
Arrays; Hash Tables; Singly Linked Lists; Doubly Linked Lists; Queues; Stacks; Trees (BST, AVL Trees, Red Black Trees, Binary Heaps); Tries; Graphs
3. Algorithms:
Recursion; Sorting; Searching; Tree Traversal; Breadth First Search; Depth First Search; Dynamic Programming

Digital Logic

Course Type : Required

Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week) Self Study Time : 54 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2018 – 2019, semester 1

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Prescribed Books :

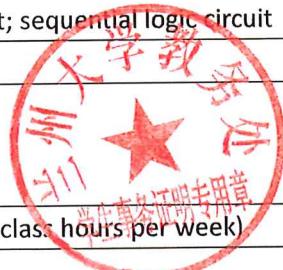
1. Mao Farao, Digital Logic. ISBN : 9787040079289

Description :

Basic digital electronic technology covers contents from "digital circuit and system" to "synthesis and application of electronic system". The first part of the course reviews basic theory of logic algebra, gate circuit and of electric feature of triggers. It focuses on designing the combinational logic circuit and sequential logic circuit to implement functions using basic elements. The topics of semiconductor RAM/ROM and CPLD/FPCA are included as well. "Synthesis and application of electronic system" part covers basic knowledge of signal generate circuit, A/D converter D/A converter and the composition and application of typical electronic systems

Contents :

logic algebra; gate circuit and flip-flops; combinational logic circuit; sequential logic circuit



Course Exercise for Data Structures

Course Type : Required

Credits : 1	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
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Semester : Academic Year 2018 – 2019, semester 1

Assessment Methods(100%) = Attendance & Participation (50%) + Project & Assignments(50%)

Examination form : None

Prescribed Books :

1. Yan Weimin, Wu Weimin, Data Structure (Described in C). ISBN : 9781302023683
2. Robert Sedgewick, Kevin Wayne, Algorithms, Fourth Edition. ISBN : 9787115293800

Description :

This is the experiment course which requires students to put the knowledge from "Data Structure" into practice.

Contents :

Students are required to solve coding problems (either assigned on paper or on online-judge systems) with the knowledge about data structures or algorithms they learned. The solutions need to be implemented with C, which requires the students to implement all the data structures they needed to solve the problems (linked-lists, stacks, queues, binary trees, etc) from scratch.

Course Design in Assemble Language**Course Type : Required**

Credits : 1	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
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Semester : Academic Year 2018 – 2019, semester 1
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Assessment Methods(100%) = Attendance & Participation (50%) + Project & Assignments(50%)
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Examination form : None

Prescribed Books :

1. Wang Shuang, Assembly Language (3rd Edition). ISBN : 9787302333142

Description :

This is the experiment course which requires students to put the knowledge from "Assembly Language" into practice.
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Contents :

Students are required to solve problems by putting the assembly language they learned into practice, including understanding the theory of memory, interrupt, I/O manipulation, compiling, linking and debugging assembly programs. By the end of this course each student is required to submit a project designed and implemented with 8086 assembly, and demonstrate it on DOS-BOX MS-DOS environment.

Principles of Computer Organization**Course Type : Required**

Credits : 4	Class Hours(Amount of Teaching) : 72 (4 class hours per week) Self Study Time : 72 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2018 – 2019, semester 2
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Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam
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Prescribed Books :

1. Bai Zhongying, Computer Organization and Architecture . ISBN : 9787030369642 2. Alan Clements, Algorithms, Computer Organization and Architecture. ISBN : 9787111558071

Description :

This course introduces the basic knowledge of computer, including the basic composition principle, design method, mutual relationship and interconnection of each subsystem of the computer (calculation units, memory, controller, external equipment, input and output subsystem, etc.) The technology that constitutes the whole system.

Contents :

Introduction to computer systems; arithmetic methods and calculators; multi-level memory; instruction system; central processing unit; bus system; external memory and I/O equipment; I/O system; Parallel organization and structure

Operating Systems

Course Type : Required

Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week) Self Study Time : 54 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2018 – 2019, semester 2

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Prescribed Books :

1. William Stallings, Operating systems : internals and design principles. ISBN : 9787121185106

Description :

This course covers the basic concepts of operating systems. Operating systems are an essential part of any computer system, similarly this course is an essential part of computer science major of Lanzhou University. This field is undergoing rapid change, as computers are now prevalent in virtually every application. Every important aspects of an Operating System will be taught in this course so as to get a proper understanding about Operating Systems and their design and working.

Contents :

Introduction to OS; Operating System Structures;

Process Management; Processes; Threads; CPU Scheduling; Process Synchronization; Deadlocks; Memory Management; Main Memory; Virtual Memory;

Storage Management; File System Interface; File-System Implementation; Mass-Storage Structure;

I/O Systems; Protection and Security;

Distributed Systems; Distributed System Structures; Distributed File Systems, Distributed Coordination;

Special Purpose Systems



Programming with C++

Course Type : Required

Credits : 2	Class Hours(Amount of Teaching) : 36 (2 class hours per week) Self Study Time : 72 Hours (At least 2 hours per class hour)
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Semester : Academic Year 2018 – 2019, semester 2

Assessment Methods(100%) = Final written exam (60%) + Attendance & Participation (10%) + Assignments(30%)

Examination form : Coding exam

Prescribed Books :

1. Stanley B. Lippman, C++ Primer, 5th Edition . ISBN : 9787121155352

2. Stephen Prata, C++ Primer Plus. ISBN : 9787115134165

Description :

This course covers modern C++ (since C++ 11) from basic to advanced features as well as various programming paradigms that could be applied in software development with examples.

Contents :

I/O Streams; Lambda Expressions ; Function Overloading; OOP in C++ (overloading, override, RAII, Virtual table etc); Templates; STL; Multithreading in C++; C++ Memory model;

Digital Logic Experiment

Course Type : Required

Credits : 1	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
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Semester : Academic Year 2018 – 2019, semester 2

Assessment Methods(100%) = Attendance & Participation (50%) + Project & Assignments(50%)

Examination form : None

Prescribed Books :

1. Mao Farao, Digital Logic. ISBN : 9787040079289

Description :

The digital electronics lab provides direction and strategies on how to apply troubleshooting techniques. The applications include expansion from four-bit to multi-bit circuits to demonstrate adaptability of each logic device. The student will be working with converters, encoders, counters, and registers. An operational knowledge of these devices is essential to a better understanding of the functions and operations with logic devices applied to microprocessor circuits.

Contents :

Students are required to assemble circuits according to the manuals, record the experiment process and results and hand in the experiment reports by the end of each class.

Course Exercise for Operating Systems

Course Type : Required

Credits : 1	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
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Semester : Academic Year 2018 – 2019, semester 2

Assessment Methods(100%) = Attendance & Participation (50%) + Project & Assignments(50%)

Examination form : None

Prescribed Books :

1. William Stallings, Operating systems : internals and design principles. ISBN : 9787121185106

Description :

This course requires students to put the knowledge learn from course "Operating Systems" into practice. During this course, students need to complete coding tasks each class with C using GNU glibc APIs on Ubuntu 18.04 LTS platform.

Contents :

Installation of Linux distribution (Ubuntu 18.04 LTS); Common terminal commands and text editors; GNU glibc C APIS; Process management; Pipeline communication; Storage

management; Device management; File systems; System calls

Course Exercise for C++ Programming

Course Type : Required

Credits : 1	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
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Semester : Academic Year 2018 – 2019, semester 2
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Assessment Methods(100%) = Attendance & Participation (50%) + Project & Assignments(50%)
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Examination form : None

Prescribed Books :

1. Stanley B. Lippman, C++ Primer, 5th Edition . ISBN : 9787121155352

2. Stephen Prata, C++ Primer Plus. ISBN : 9787115134165

Description :

This course requires students to put the knowledge learn from course "Programming with C++" into practice.
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Contents :

Students are required to solve problems, finish coding tasks, demonstrate building/running results using C++ programming language.
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Computer Networks

Course Type : Required

Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week) Self Study Time : 54 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2019 – 2020, semester 1
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Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Sit-in exam on computer and on paper.
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Prescribed Books :

1. James F. Kurose, Keith W. Ross, Computer Networking: A Top-Down Approach. ISBN : 978711599715
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Description :

Computer network is a required professional basic course and core course for computer majors. This course aims to enable students to master the architecture and popular reference models of computer networks, and to lay a solid foundation for cultivating students' abilities in the planning and construction of computer network systems, and the establishment and development of network application systems.

Contents :

Introduction to the Computer Networking; TCP/IP and OSI Models; Bits and Bytes; Ethernet; Network Characteristics; Switches and Data Link Layer; Routers and Network Layer; IP Addressing and IP Packets; Network Masks and Subnetting; ARP and ICMP; Transport Layer - TCP and UDP; Routing; Network Address Translation; DHCP and DNS

Numerical Analysis

Course Type : Required

Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week) Self Study Time : 54 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2019 – 2020, semester 1

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Prescribed Books :

1. Li Qingyang, Numerical Analysis. ISBN : 9787302185659

Description :

This course introduces some common basic algorithms in numerical analysis and their application in engineering. Its contents include interpolation and approximation, numerical differentiation and numerical integration, numerical solutions of nonlinear equations and linear equations, calculation of eigenvalues and eigenvectors of matrices, numerical solutions of ordinary differential equations.

Contents :

Errors in Numerical Calculations; Interpolation; Function Approximation and Fast Fourier Transform; Numerical Integration and Numerical Differentiation; Direct Methods for Solving Systems of Linear Equations; Iterative Method for Solving Linear System of Equations; Numerical Solution of Nonlinear Equations and Systems of Equations; Matrix eigenvalue calculation; Numerical Solution of Initial Value Problem of Ordinary Differential Equations

Introduction to Artificial Intelligence

Course Type : Limited Optional

Credits : 2	Class Hours(Amount of Teaching) : 36 (2 class hours per week) Self Study Time : 36 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2019 – 2020, semester 1

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Prescribed Books :

1. Li Qingyang, Numerical Analysis. ISBN : 9787302185659

Description :

This course include common topics that students need to know to get started in the field of AI. Students would become familiar with the main approaches and research fields of artificial intelligence. Students would also know the advantages and disadvantages of AI as well as its possible applications in the future.

Contents :

Rule-based expert systems; Uncertainty management techniques; Fuzzy expert systems; Frame-based expert systems; Artificial neural networks; Evolutionary computing; Hybrid intelligent systems; Knowledge engineering; Data mining

Principles of Database System

Course Type : Required

Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week) Self Study Time : 54 Hours (At least 1 hour per class hour)
Semester : Academic Year 2019 – 2020, semester 1	
Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)	
Examination form : Written sit-in exam	
Prescribed Books :	
1. Jeffrey Ullman, Jennifer Widom, A First Course in Database Systems. ISBN : 9787111268284	
Description :	
This course introduces the abstract scientific methods of computers, data processing theory, data manipulation language, security and integrity control principles, principles and techniques of concurrency and recovery of database management systems contained in database systems and other professional knowledge.	
Contents :	
Introduction to database management systems in general; Relational Database and Structured Query Language (SQL); Database security; Database integrity; Relational Data Theory (Functional dependencies, normal forms, closures and schema decomposition); Database Design; Relational query processing and query optimization; Database Recovery Technology; Concurrency control in database;	

Course Exercise for Database

Course Type : Required

Credits : 1	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
Semester : Academic Year 2019 – 2020, semester 1	
Assessment Methods(100%) = Attendance & Participation (50%) + Project & Assignments(50%)	
Examination form : None	
Prescribed Books :	
1. Jeffrey Ullman, Jennifer Widom, A First Course in Database Systems. ISBN : 9787111268284	
2. Microsoft SQL documentation	
Description :	
This course requires students to put the knowledge learn from course "Principles of Database Systems" into practice.	
Contents :	
Students are required to finish tasks assigned each class by analyzing the requirements in task problems, designing and modeling database and tables and coding on Microsoft SQL Server. A report including the description of problem solving process and SQL code must be submitted for each class.	

Lab Course for Computer Network

Course Type : Required

Credits : 1	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
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Semester : Academic Year 2019 – 2020, semester 1

Assessment Methods(100%) = Attendance & Participation (50%) + Project & Assignments(50%)

Examination form : None

Prescribed Books :

1. James F. Kurose, Keith W. Ross, Computer Networking: A Top-Down Approach. ISBN : 9787111599715

Description :

This course requires students to put the knowledge learn from course “Computer Networking” into practice.

Contents :

The tasks assigned on each class need to be completed on Cisco’s Packet Tracer or real switches and routers in the laboratory environment. Students are required to finish the tasks and submit reports on each class.

Web Database Technology

Course Type : Limited Optional

Credits : 2	Class Hours(Amount of Teaching) : 36 (2 class hours per week) Self Study Time : 72 Hours (At least 2 hours per class hour)
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Semester : Academic Year 2019 – 2020, semester 1

Assessment Methods(100%) = Course Project (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : None

Prescribed Books :

1. Lynn Beighley, Michael Morrison, Head First PHP & MySQL. ISBN : 9787512305137

Description :

This course introduces the web application development technologies. By finishing this course, students are expected to be comfortable about developing and deploying web applications, including maintenance of frontend pages and server-side RESTful API management. This course consists of basic frontend development instructions with HTML5, CSS, Javascript, PHP and backend development with MariaDB. For the course project, students need to work in groups to develop a basic blog application according to the requirement document.

Contents :

An introduction to modern web application hierarchy; HTML5; Modern CSS; PHP programming; An overview of Javascript and ECMAScript; Introduction to RESTful API; Introduction to MariaDB

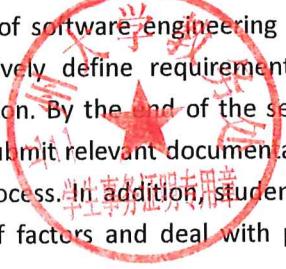
Lab Course for Computer Organization

Course Type : Required

Credits : 1	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
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学生事务证明专用章

Semester : Academic Year 2019 – 2020, semester 1
Assessment Methods(100%) = Attendance & Participation (50%) + Assignments(50%)
Examination form : None
Prescribed Books :
<p>1. Bai Zhongying, Computer Organization and Architecture . ISBN : 9787030369642</p> <p>2. Alan Clements, Algorithms, Computer Organization and Architecture. ISBN : 9787111558071</p> <p>3. Zhang Hong, Computer Composition Principle Experiment. ISBN : 9787505897540</p>
Description :
This course is designed for the undergraduate teaching needs of computer composition principles. The experiments of each component of the computer, as well as the verification and comprehensive experiments based on the micro-program controller and the whole machine test of the hard-wired controller are designed. By participating in this course, students would be able to further master the working principle of each component of the computer through experiments, to truly and systematically grasp how the various components in the computer work in harmony.
Contents :
Register experiment; operator experiment; data output experiment/shift gate experiment; microprogram counter UPC; program counter experiment; memory experiment; microprogram memory experiment; interrupt experiment; combinational logic control; design instruction/microinstruction system

Software Engineering
Course Type : Required
Credits : 2
Class Hours(Amount of Teaching) : 36 (2 class hours per week)
Self Study Time : 36 Hours (At least 1 hour per class hour)
Semester : Academic Year 2019 – 2020, semester 2
Assessment Methods(100%) = Final written exam (50%) + Attendance & Participation (10%) + Assignments(10%) + Final Course Project
Examination form : Written sit-in exam
Prescribed Books :
<p>1. Shari Lawrence Pleeger, Software Engineering: Theory and Practice, Third Edition. ISBN : 9787040198768</p>
Description :
In this course, students will learn some examples of software engineering that have shaped the framework of the software industry over the past few decades. Students have the opportunity to be exposed to the fundamental principles of software engineering and engage in some engineering practice, learning how to iteratively define requirements, architect, design, implement, integrate, test, and deploy a solution. By the end of the semester, students are required to demonstrate course projects and submit relevant documentations in groups, with details about the planning and development process.  In addition, students can learn to solve practical problems constrained by a variety of factors and deal with potential engineering transactions.
Contents :

Software Development Life-cycle; Requirements; Specifications; WRSPM Model; Architecture; Design; Client-server Pattern; Master-Slave Pattern; Modularity; Coupling & Cohesion; Buy vs Build; Testing; Verification and Validation; Software Models; Agile; Scrum

Algorithm Design and Analysis

Course Type : Required

Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week) Self Study Time : 54 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2019 – 2020, semester 2

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Prescribed Books :

1. Thomas H.Cormen, Charles E.Leiserson, Ronald L.Rivest,Clifford Stein, Introduction to Algorithms, Third Edition. ISBN : 9787111407010

Description :

This course is a continuation of the course "Data Structures" in 2018-2019 semester 1, which concentrates on programming and problem solving in a context of real applications. In computer science, both software design and hardware design are inseparable from algorithms, the core of algorithmic computer science. This course opens the door to algorithms for students, introduces commonly used algorithm design strategies and techniques, many classic problems and their algorithm design ideas, and methods and techniques for algorithm proof and analysis. Through the study of this course, students can master the basic theories, methods and techniques of algorithm design, train computational thinking, and improve their practical ability to analyze and solve problems.

Contents :

Overview of Algorithms; Recursion and Divide and Conquer Strategies; Probabilistic Analysis and Stochastic Algorithms; Median and Order Statistics; Dynamic Programming; Greedy Algorithms; Graph Algorithms; Set; String and pattern matching

Interface and Communication

Course Type : Required

Credits : 2	Class Hours(Amount of Teaching) : 36 (2 class hours per week) Self Study Time : 36 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2019 – 2020, semester 2

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Prescribed Books :

1. Liu Bing, Microcomputer Communication and Interface Technology. ISBN : 9787508429113

Description :

The purpose of this course is to enable students to better master the interface technology

between computers and peripheral equipment, as well as the basic theory and basic analysis methods of data communication technology. The ability of hardware design and software programming for interface and communication equipment lays the necessary foundation for professional course study and participation in computer engineering application practice.

Contents :

Concept of computer interface; Methods of transferring information through an interface; Hardware interface chip and I/O addressing method; Bus and Interface Chip; Parallel communication interface; Serial communication interface; External memory and interface; Interrupt system; A/D and D/A conversion; Universal Serial Bus

Compiling Principles

Course Type : Required

Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week) Self Study Time : 108 Hours (At least 2 hours per class hour)
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Semester : Academic Year 2019 – 2020, semester 2

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Prescribed Books :

1. Alfred V. Aho, Monica S.Lam, Ravi Sethi, Jeffrey D. Ullman, Compilers: Principles, Techniques, & Tools. ISBN :9787111251217

Description :

This course mainly describes the principles, processes, methods and techniques of translating high-level languages into codes that can be executed by computers. The core is to introduce translation from high-level languages to assembly languages. The purpose of this course is to help students understand the relationship between compilation and high-level language programs, master the principles, methods and implementation techniques of modern compilers, and truly understand computer information processing.

Contents :

lexical analysis; Syntax analysis; semantic analysis; Intermediate code generation; Code optimization; Object code generation at various stages

Internet of Things & Security

Course Type : Limited Optional

Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week) Self Study Time : 54 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2019 – 2020, semester 2

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Prescribed Books :

1. Liu YunHao, Introduction to Internet of Things. ISBN : 9787030372574

2. Sravani Bhattacharjee, Practical Industrial Internet of Things Security: A practitioner's guide to securing connected industries. ISBN : 9787111625698

Description :

This course introduces the security threats faced by the Internet of Things and its main countermeasures by analyzing real-world examples of RFID and wireless sensor network application systems. By learning this course, students would be able to obtain a general idea of various IoT systems' architectures and the challenges in the field of security.

Contents :

For the RFID application system, this course discusses its security model, analyzes the root cause of the problem, introduces security protection measures, and focuses on describing RFID applications based on basic theories such as cryptography and digital signatures System security authentication protocol. For the wireless sensor network, according to its different network architecture types, this course analyzes the security threats it faces, and introduces its coping methods, including security routing strategies, confidential communication protocols, etc.

Course Exercise for Compiling Principles

Course Type : Required

Credits : 1	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
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Semester : Academic Year 2019 – 2020, semester 1
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Assessment Methods(100%) = Attendance & Participation (50%) + Course Project(50%)

Examination form : None

Prescribed Books :

1. Alfred V. Aho, Monica S.Lam, Ravi Sethi, Jeffrey D. Ullman,Compilers: Principles, Techniques, & Tools. ISBN :9787111251217

Description :

This course requires students to put the knowledge learn from course "Compiling Principles" into practice. This course defines a simplified programming language, a subset of C, as the source language, and constructs its compiler step by step in three phases. This course requires students to choose the three most critical phases in the compilation process - lexical analysis, syntax analysis, semantic analysis and intermediate code generation. Each phase is a practical topic, and finally completes the compilation process from source code to quaternary. Students are also required to submit reports and documentation when implementing different phases of the compiling program.

Contents :

Implementing lexical analysis, syntax analysis, semantic analysis and intermediate code generation of the defined language.

Interface and Communication Experiment

Course Type : Required

Credits : 1	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
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Semester : Academic Year 2019 – 2020, semester 1
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Assessment Methods(100%) = Attendance & Participation (50%) + Projects and
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Assignments(50%)
Examination form : None
Prescribed Books :
1. Liu Bing, Microcomputer Communication and Interface Technology. ISBN : 9787508429113 2. Hu Jianbo, Microcomputer Principle and Interface Technology Experiment. ISBN : 9787111350651
Description : <p>This course requires students to put the knowledge learn from course "Interface and communication" into practice. The experiments are operated on the Lab6000p Experiment Kit, students need to connect circuits using components in experiment kit, finish assembly coding and compilation, and download the executables to the experiment kit. Students are required to submit a report on each class.</p>
Contents : Experiment on 8255 parallel port, Programmable Timer/Counter Chip 8253 experiment, Programmable Interrupt Controller Chip 8259A, D/A and A / D converter interface circuit

Computer Architecture	
Course Type : Required	
Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week) Self Study Time : 54 Hours (At least 1 hour per class hour)
Semester : Academic Year 2020 – 2021, semester 1	
Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)	
Examination form : Written sit-in exam	
Prescribed Books : 1. John L. Hennessy, David A. Patterson, Computer Architecture:A Quantitative Approach,Fifth Edition. ISBN : 9787115297655	
Description : <p>Computer Architecture is one of the core courses of computer science and technology majors. This course focuses on various basic structures of computer systems, design techniques and performance analysis methods. The goal and task of this course is to enable students to understand the basic structure of computers, master the factors affecting performance in all aspects of computer design, have a general idea of various theories and methods to improve performance, and use quantitative analysis techniques to evaluate the overall and local performance in the design.</p>	
Contents : Computer instruction set structure design; Pipeline technology; Instruction level parallelism; Storage hierarchy; I/O system; Multiprocessor	

Thesis	
Course Type : Required	
Credits : 3	Class Hours(Amount of Teaching) : 14 Weeks

Semester : Academic Year 2020 – 2021, semester 1
Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)
Examination form : Written sit-in exam
Prescribed Books :
1. Alfred V. Aho, Monica S.Lam, Ravi Sethi, Jeffrey D. Ullman, Compilers: Principles, Techniques, & Tools. ISBN :9787111251217
Description :
The Bachelor thesis of Lanzhou University is divided into two parts. Preliminary phase is in semester 1 of academic year 2020-2021, in which the candidate is introduced to the topic and working methods. Through group exercises and a final preliminary design, the candidate should present a project sketch with clear objectives for their work. Education Topics in this phase: Project work / Choice of topic and client / Acquisition / Planning / Guidance / Presentation of results. The Bachelor thesis is an independent work, with regular procedures for meetings and counseling with client and supervisor. Students can choose between topics given by the department, supervisor or select by the student/student group. The client should be private enterprise or public services.
Contents :
This project is sponsored by the State Grid Corporation of China. In order to study the impact of remote monitoring of floating dust on photovoltaic panels on photovoltaic power generation, a photovoltaic power generation experimental platform with functions of collecting power generation data, meteorological environment data and dust accumulation image data has been built in the laboratory, including The main control module and server software for data acquisition and transmission in photovoltaic power stations. The server software realizes the functions of data reception and storage, data visualization and data query.
The focus of this paper is on the demand analysis, design and implementation of some functional modules and deployment testing of the server software.

Other Courses

The following courses include optional electives and other courses required for graduation and a bachelor's degree in Lanzhou University.

College English (3/4)	
Course Type : Required	
Credits : 3	Class Hours(Amount of Teaching) 54 (3 class hours per week) Self Study Time : 54 Hours (At least 1 hour per class hour)
Semester : Academic Year 2016 – 2017, semester 1	
Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)	
Examination form : Written sit-in exam	

Prescribed Books :
1. Li Menghua. New College English Integrated Course. ISBN : 9787544661911
2. Susan Stempleski, Yang Huizhong. New Century College English Learn to Speak : An English Video Course (3rd Edition). ISBN : 9787544647601
Description :
This is a basic course for college student, aiming to promote the students' ability in English.
Contents :
Reading comprehension; Listening comprehension; Academic writing; Daily and academic speaking.

Music Appreciation
Course Type : Optional
Credits : 3 Class Hours(Amount of Teaching) : 54 (3 class hours per week)
Semester : Academic Year 2016 – 2017, semester 1
Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)
Examination form : Written sit-in exam
Description :
This is a course introducing different music genres developed from different area of the world in history.
Contents :
Introduction to western music history; Styles and genres of western music; Introduction to eastern music history; Styles and genres of eastern music; Introduction to music theory.

HIV/AIDS, Sex and Health(MOOC)
Course Type : Optional
Credits : 1 Class Hours(Amount of Teaching) : 16 (1 hour per week online)
Semester : Academic Year 2016 – 2017, semester 1
Assessment Methods(100%) = Final online exam (50%) + Participation Online (30%) + Assignments(20%)
Examination form : Written online exam
Description :
This is a course introducing the current situation of HIV/ADIS in the world and its prevention.
Contents :
Interactive online course introducing HIV/AIDS.

Ideological and Moral Cultivation and Legal Basis
Course Type : Required
Credits : 3 Class Hours(Amount of Teaching) : 54 (3 class hours per week) Self Study Time : 54 Hours (At least 1 hour per class hour)
Semester : Academic Year 2016 – 2017, semester 1

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam
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Description :

This course introduces students to ideological, moral and legal qualities.
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Fundamentals of Information Technology

Course Type : Required

Credits : 4	Class Hours(Amount of Teaching) : 72 (3 class hours per week)
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Semester : Academic Year 2016 – 2017, semester 1
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Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam
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Description :

This is a public basic course for college students. The purpose is to enable students to understand the basic principles of computer systems and computing environments, and to understand the basic knowledge and basic theories of information acquisition, data management and processing analysis, information expression and release.
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Contents :

The contents include: information digitization foundation, computer working principle and system structure, basic concepts of computer network, basic concepts of algorithm and program design, basic concepts of database, document processing, data processing, PPT production, new computer technology and other modules.
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Chemistry and Life Science

Course Type : Optional

Credits : 2	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
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Semester : Academic Year 2016 – 2017, semester 1
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Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam
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Description :

This course introduces students who are interested in life science to how chemistry are affecting human beings and other creatures.

Guidance to Major

Course Type : Optional

Credits : 1	Class Hours(Amount of Teaching) : 18 (1 class hour per week)
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Semester : Academic Year 2016 – 2017, semester 1
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Assessment Methods(100%) = Attendance & Participation (50%) + Assignments(50%)
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Examination form : None

Description :

This course provides students with an overview of the program structure and perspectives of majors in the school of geography, including physical geography, human geography and geographic information science.

Military Training and Military Theory

Course Type : Required

Credits : 1	Class Hours(Amount of Teaching) : 3 Weeks
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Semester : Academic Year 2016 – 2017, semester 1

Assessment Methods(100%) = Final written exam (30%) + Military Drill (70%)

Examination form : Written sit-in exam

Description :

The obligatory military drill for junior college students, including physical training and theory learning.

Physical Education (1/4)

Course Type : Required

Credits : 1	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
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Semester : Academic Year 2016 – 2017, semester 1

Assessment Methods(100%) = Participation(80%) + Evaluation in field (20%)

Examination form : Evaluation in field

Description :

A course introduce martial arts and basic boxing to students.

College English (4/4)

Course Type : Required

Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week) Self Study Time : 54 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2016 – 2017, semester 2

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Prescribed Books :

1. Li Menghua. New College English Integrated Course. ISBN : 9787544661911
2. Susan Stempleski, Yang Huizhong. New Century College English Learn to Speak : An English Video Course (3rd Edition). ISBN : 9787544647601

Description :

This is a basic course for college student, aiming to promote the students' ability in English.

Contents :

Reading comprehension; Listening comprehension; Academic writing; Daily and academic

speaking.

Outline of Chinese Modern and Contemporary History

Course Type : Required

Credits : 2	Class Hours(Amount of Teaching) : 36 (2 class hours per week) Self Study Time : 36 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2016 – 2017, semester 2

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Prescribed Books :

1. Higher Education Press. Outline of Chinese Modern and Contemporary History. ISBN : 9787040566239

Description :

This course introduces the history of China from the Opium War to the eve of the May Fourth Movement, from the May Fourth Movement to the founding of New China, and from the founding of New China to the new period of socialist modernization.

Situations and Policies (2)

Course Type : Required

Credits : 0	Class Hours(Amount of Teaching) : 4
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Semester : Academic Year 2016 – 2017, semester 2

Assessment Methods(100%) = Final online exam (70%) + Attendance & Participation (30%)

Examination form : Written online exam

Description :

This course introduces the recent situations and policies in mainland China.

University Physics (1/2)

Course Type : Optional

Credits : 4	Class Hours(Amount of Teaching) : 72 (4 class hours per week) Self Study Time : 72 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2016 – 2017, semester 2

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Prescribed Books :

1. Zhan Keli, Physics for Scientists and Engineers with Modern Physics. ISBN : 9787040165630

Description :

The learning of the course enables students to gain a comprehensive understanding of the principles of the moving of objects, giving an initial training of students' methods of thinking and capabilities to investigate problems scientifically. It can also lay students a solid physical

foundation for further learning (for Polytechnic postgraduates) and for learning new theories, new knowledge and new technologies.

Contents :

Mesurement and Estimating; Newton's Law; Work and energy; Linear momentum and collision; Temperature and idea gas law; Wave motion; Electromagnetism; The foundation of quantum physics

Physical Geography

Course Type : Optional

Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week) Self Study Time : 54 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2016 – 2017, semester 2

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Prescribed Books :

1. Wu Guanghe, Physical Geography. ISBN : 9787040228762

Description :

Based on a brief introduction to the basic knowledge of the earth and the earth's crust, this course discusses the characteristics of climate, hydrology, landform, soil and organisms, analyzes the status and interaction of these elements in the natural geographical environment, and guides students to establish the concept of the integrity of the natural geographical environment.

Contents :

Earth; Crust; Atmosphere and climate system; Marine and terrestrial waters; Landforms; Soil circles; Biomes and ecosystems; Comprehensive study of physical geography

Cartography

Course Type : Optional

Credits : 3	Class Hours(Amount of Teaching) : 72 (4 class hours per week) Self Study Time : 72 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2016 – 2017, semester 2

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Prescribed Books :

1. Zhu Guorui, Cartography. ISBN : 9787307040328

Description :

This course introduces the theory and methods of expression, processing and transmission of map information, and explores the production technology and use methods of map with geographic information visualization as the core.

Contents :

Basic knowledge of maps; Map projection; Map data; Map symbol design; Graphic design; Cartographic synthesis; Mathematical models of cartography; Map editing design; Cartographic craftsmanship; Map publishing and printing; Map analysis

Physical Education (2/4)

Course Type : Required

Credits : 1	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
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Semester : Academic Year 2016 – 2017, semester 2

Assessment Methods(100%) = Participation(80%) + Evaluation in field (20%)

Examination form : Evaluation in field

Description :

A course introduce martial arts and basic boxing to students.

College Chinese

Course Type : Limited Optional

Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week) Self Study Time : 54 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2017 – 2018, semester 1

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Prescribed Books :

1. Chen Hong, College Chinese. ISBN : 9787040162998

Description :

This is a general education course with the main purpose of improving the literary and cultural quality of college students.

Contents :

Tang poems; Song Ci; Classical Fiction; Ancient Prose; Chinese Opera; Modern Poetry; Modern and Contemporary Fiction; Modern and Contemporary Prose; Foreign Novels; Drama; Mandarin and Dialects; Rhetoric and Speech; Applied Writing

English Writing

Course Type : Required

Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week) Self Study Time : 54 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2017 – 2018, semester 1

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Description :

This course provide trainings to improve students' ability in academic and informal writing with

English.

Introduction to the Basic Principles of Marxism

Course Type : Required

Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week)
	Self Study Time : 54 Hours (At least 1 hour per class hour)

Semester : Academic Year 2017 – 2018, semester 1

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Description :

This course aims to help students learn and understand the basic principles of Marxism, grasp Marxism as a whole, and learn to apply the basic principles of Marxism to understand and analyze practical problems.

Situations and Policies (1)

Course Type : Required

Credits : 0	Class Hours(Amount of Teaching) : 3
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Semester : Academic Year 2017 – 2018, semester 1

Assessment Methods(100%) = Final online exam (70%) + Attendance & Participation (30%)

Examination form : Written online exam

Description :

This course introduces the recent situations and policies in mainland China.

Physical Education (3/4)

Course Type : Required

Credits : 1	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
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Semester : Academic Year 2017 – 2018, semester 1

Assessment Methods(100%) = Participation(80%) + Evaluation in field (20%)

Examination form : Evaluation in field

Description :

Football course for college students.

Physical Health Standard Test(1/4)

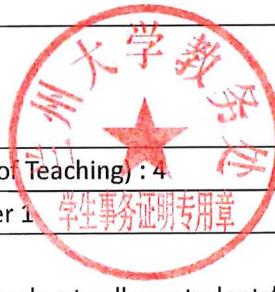
Course Type : Required

Credits : 0	Class Hours(Amount of Teaching) : 4
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Semester : Academic Year 2017 – 2018, semester 1

Description :

This is a physical test for collecting statistical data about college students' physical performance.



Physical Health Standard Test(2/4)

Course Type : Required

Credits : 0	Class Hours(Amount of Teaching) : 4
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Semester : Academic Year 2017 – 2018, semester 1

Description :

This is a physical test for collecting statistical data about college students' physical performance.

Situations and Policies (1)

Course Type : Required

Credits : 0	Class Hours(Amount of Teaching) : 4
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Semester : Academic Year 2017 – 2018, semester 2

Assessment Methods(100%) = Final online exam (70%) + Attendance & Participation (30%)

Examination form : Written online exam

Description :

This course introduces the recent situations and policies in mainland China.

University Physics (1/1)

Course Type : Required

Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week) Self Study Time : 54 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2017 – 2018, semester 2

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Prescribed Books :

1. Zhao Kaihua, Chen Ximou, Electromagnetism. ISBN : 9787040295337

Description :

The learning of the course enables students to gain a comprehensive understanding of basic knowledge about electronics and electromagnetic fields.

Contents :

Electrostatic field; Electric field strength; Conductors and dielectrics in an electrostatic field; Constant current; Constant magnetic field; Electromagnetic induction and transient processes; Magnetic media; Alternating current; Maxwell's Electromagnetic Theory and Electromagnetic Waves

Physical Education (4/4)

Course Type : Required

Credits : 1	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
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Semester : Academic Year 2017 – 2018, semester 2

Assessment Methods(100%) = Participation(80%) + Evaluation in field (20%)



Examination form : Evaluation in field

Description :

Football course for college students.

Audio-visual English

Course Type : Required

Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week) Self Study Time : 54 Hours (At least 1 hour per class hour)
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Semester : Academic Year 2018 – 2019, semester 1

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Description :

This course provide trainings to improve students' listening and comprehensive abilities in English by analyzing audios and videos.

Situations and Policies (3)

Course Type : Required

Credits : 0	Class Hours(Amount of Teaching) : 4
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Semester : Academic Year 2018 – 2019, semester 1

Assessment Methods(100%) = Final online exam (70%) + Attendance & Participation (30%)

Examination form : Written online exam

Description :

This course introduces the recent situations and policies in mainland China.

Innovative Entrepreneurship Courses

Course Type : Required

Credits : 2	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
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Semester : Academic Year 2018 – 2019, semester 1

Assessment Methods(100%) = Attendance & Participation (80%) + Assignments(20%)

Examination form : None

Description :

The purpose of this course is to cultivate students' entrepreneurial spirit and management skills, stimulate enthusiasm for entrepreneurship, improve students' entrepreneurial quality and ability to transform scientific research achievements, so that they can continuously develop their abilities according to the new requirements of the knowledge economy.

Physical Health Standard Test(2/4)

Course Type : Required

Credits : 0	Class Hours(Amount of Teaching) : 4
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学生事务证明专用章

Semester : Academic Year 2018 – 2019, semester 1

Description :

This is a physical test for collecting statistical data about college students' physical performance.

Audio-visual English

Course Type : Optional

Credits : 3	Class Hours(Amount of Teaching) : 54 (3 class hours per week)
	Self Study Time : 54 Hours (At least 1 hour per class hour)

Semester : Academic Year 2018 – 2019, semester 2

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Description :

This course provide trainings to improve students' reading and writing abilities in English by analyzing mass media and journalisms.

Introduction to Mao Zedong Thoughts & Theoretical System of Chinese Socialism

Course Type : Required

Credits : 4	Class Hours(Amount of Teaching) : 72 (4 class hours per week)
	Self Study Time : 72 Hours (At least 1 hour per class hour)

Semester : Academic Year 2018 – 2019, semester 2

Assessment Methods(100%) = Final written exam (70%) + Attendance & Participation (10%) + Assignments(20%)

Examination form : Written sit-in exam

Description :

This course focuses on the historical process of the Communist Party of China integrating the basic tenets of Marxism with China's reality, and fully reflects the two historical leaps and two major theoretical achievements of the sinification of Marxism.

Career Development and Planning

Course Type : Required

Credits : 2	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
	Semester : Academic Year 2018 – 2019, semester 2

Assessment Methods(100%) = Attendance & Participation (80%) + Assignments(20%)

Examination form : None

Description :

This course provide assistance to students to make future career planings.

Situations and Policies (3)

Course Type : Required

Credits : 0	Class Hours(Amount of Teaching) : 4
Semester : Academic Year 2019 – 2020, semester 1	
Assessment Methods(100%) = Final online exam (70%) + Attendance & Participation (30%)	
Examination form : Written online exam	
Description :	
This course introduces the recent situations and policies in mainland China.	

Physical Health Standard Test(3/4)

Course Type : Required

Credits : 0	Class Hours(Amount of Teaching) : 4
Semester : Academic Year 2019 – 2020, semester 1	
Description :	

This is a physical test for collecting statistical data about college students' physical performance.

Practice of Ideological and Political Theory

Course Type : Required

Credits : 2	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
Semester : Academic Year 2019 – 2020, semester 2	
Description :	

This course require students to put the theory they learned from the course "Introduction to Mao Zedong Thoughts & Theoretical System of Chinese Socialism" by doing voluntary labor.

Introduction to Xi Jinping's Thought on Socialism with Chinese Characteristics in the New Age

Course Type : Required

Credits : 2	Class Hours(Amount of Teaching) : 36 (2 Class Hours per week)
Semester : Academic Year 2019 – 2020, semester 2	
Description :	

This course introduces Xi Jinping's socialism with Chinese characteristics in the new era.

Principles of E-Commerce

Course Type : Limited Optional

Credits : 2	Class Hours(Amount of Teaching) : 36 (2 class hours per week)
Semester : Academic Year 2019 – 2020, semester 2	
Assessment Methods(100%) = Attendance & Participation (70%) + Assignments(20%)	
Examination form : None	

Description :

This course introduces the basics of e-commerce, the environment of e-commerce, the mode of e-commerce and the emerging e-commerce in view of the new situation of the development of e-commerce disciplines.

Physical Health Standard Test(4/4)

Course Type : Required

Credits : 0 Class Hours(Amount of Teaching) : 4

Semester : Academic Year 2020 – 2021, semester 1

Description :

This is a physical test for collecting statistical data about college students' physical performance.

Productive Labor

Course Type : Required

Credits : 0 Class Hours(Amount of Teaching) : 1 week

Semester : Academic Year 2020 – 2021, semester 1

Description :

This course requires students to participate in the maintenance of the campus.

