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Basic Courses in General Discipline

Calculus (I)(A)

Course Code: MAT0551

Course Type: Required

Description: Through this course, students will acquire: 1. functions, limits, continuity 2. differentiation of functions 3. integration of functions 4. vector algebra and space analytic geometry and other basic concepts, basic theory, and basic operational skills.

Hours: 88

Credits: 5.5

Calculus (I)(B)

Course Code: MAT0531

Course Type: Required

Description: Through this course, students are expected to acquire: 1. multivariable differential functions 2. integral functions 3. infinite series 4. ordinary differential equations and other basic concepts, basic theory, and basic arithmetic skills.

Hours: 88

Credits: 5.5

Linear Algebra

Course Code: MAT0721

Course Type: Required

Descriptions: Linear Algebra is a theory about vector space and linear mapping. Its main contents are linear equations, determinants, matrix operation, matrix similarity and congruence, abstract vector space and linear mapping, Euclidean space, and unitary space.

Hours: 40

Credits: 2.5

Probability and Mathematics Statistic

Course Code: MAT0591

Course Type: Required

Descriptions: This course covers the basic concepts of random events

and their operations, the law of large numbers, the central limit theorem, samples, and statistics in mathematical statistics and related properties. The course includes the calculation and application of random variables and their distributions, numerical characteristics of random variables, sample estimation and hypothesis testing, an understanding of the probability of random events, the distribution of statistics, and other basic properties.

Hours: 40

Credits: 2.5

Advanced Programming Language (C)

Course Code: CST0511

Course Type: Required

Descriptions: Students are required to master all the syntax of C programs, basic knowledge, and basic skills of programming; to develop practical skills in problem analysis and problem-solving; to master the basic ideas of structured programming, with emphasis on learning how to establish a good and safe programming mindset; and to lay a good foundation for subsequent professional foundation and specialist courses.

Hours: 48

Credits: 3

Advanced Programming Language (C) Experiments

Course Code: CST0521

Course Type: Required

Descriptions: Deepen students' understanding and mastery of C language knowledge through verification experiments and improve their practical ability to solve problems in C language through comprehensive experiments.

Hours: 32

Credits: 1

Foundation of Information Security Mathematics

Course Code: CST0671

Course Type: Required

Descriptions: This course teaches mathematics related to information security, particularly in the areas of elementary number theory and

modern algebra. The main focus is on theory, introducing divisibility of integers, congruence theory, and knowledge about primitive roots and indicators, groups, rings, and domains.

Hours: 64

Credits: 4

Computer Telecommunications & Network

Course Code: CST0541

Course Type: Required

Descriptions: The course starts with the basic concepts and architecture of computer networks, the hierarchy of computer networks, and the functions of each layer of the protocols are explained. Through the course, students will understand the composition and role of computer networks; understand the functions and working processes of the main computer network protocols, as well as the security issues involved; master the composition and working principles of common computer network hardware devices; in-depth understanding and focus on mastering the knowledge of the TCP/IP protocol cluster; be able to build a small enterprise network.

Hours: 40

Credits: 2.5

Computer Telecommunications & Network Experiments

Course Code: CST0561

Course Type: Required

Descriptions: The course uses a combination of actual network equipment and network simulation software to develop students' practical computer network engineering skills through network planning and organization, device and service configuration, protocol analysis, and basic network communication program writing experiments, while further consolidating, deepening and expanding students' theoretical knowledge of computer networks.

Hours: 16

Credits: 0.5

Data Structure

Course Code: CST2261

Course Type: Required

Descriptions: To familiarize students with the basic concepts of data structures and to master the basic methods of data organization and data processing, with emphasis on the design techniques of data structures such as linear tables, stacks, queues, strings, arrays, and sparse matrices, trees and binary trees, graphs, lookups, sorting and their related algorithms.

Hours: 48

Credits: 3

Data Structure Experiments

Course Code: CST2271

Course Type: Required

Descriptions: This laboratory course requires proficiency in programming and debugging in a C/C++ development environment (VC++ or Dev C++, etc.). Knowledge of basic methods of data organization and data processing, including design techniques for data structures such as linear tables, stacks, queues, strings, arrays, sparse matrices, trees and binary trees, graphs, lookups, sorting and their associated algorithms.

Hours: 16

Credits: 0.5

Assembly Language Programming

Course Code: CST2081

Course Type: Required

Descriptions: The aim of this course is to give students a better understanding of the basic components of a computer, the format and use of assembly instructions, and the basic ideas of programming in assembly language, to understand the underlying working principles of a computer, to train students in programming techniques, to become familiar with writing assembly language programs, and to have some skills in on-line operation and program debugging.

Hours: 24

Credits: 1.5

Assembly Language Programming Experiments

Course Code: CST2101

Course Type: Required

Descriptions: The aim of this course is to train students in programming techniques, to become familiar with writing assembly language programs, and to have some skills in online operation and program debugging.

Hours: 16

Credits: 0.5

Discrete Mathematics (I)

Course Code: SCS0521

Course Type: Required

Descriptions: Students should (1) learn the most basic contents of mathematical logic, master the basic concepts of propositional logic and predicate logic, master the methods of propositional arithmetic, master the basic theory of propositional reasoning and predicate reasoning, and use the theory of reasoning to make logical arguments. (2) study the basic concepts and properties of set theory, to master the basic theory and methods of set operations and proofs; to study the concepts and properties of binary relations, to master equivalence relations and partial order relations, and to enable students to understand functions at a higher level.

Hours: 40

Credits: 2.5

Discrete Mathematics (II)

Course Code: SCS0531

Course Type: Required

Descriptions: Students should learn the basics of algebraic systems, master the definition and properties of binary operations, understand the concepts of subalgebra and product algebra, homomorphism and isomorphism of algebraic systems, master the definition and properties of algebraic systems such as semigroup, least semigroup, group, ring, domain and lattice, Boolean algebra, etc.

Hours: 40

Credits: 2.5

Specialty-Required Courses

Digital Circuit and Logic Design

Course Code: SCS2011

Course Type: Required

Description: This course focuses on the fundamentals of digital systems, the fundamentals of logic algebra, integrated logic gates, and flip-flops, analysis and design of combinational and temporal logic circuits, medium-scale integrated chips, EDA methods for digital systems, and hardware description languages. Emphasis is placed on the basic laws of logic algebra, analysis and design of combinational and temporal logic circuits, small and medium scale integrated circuits and applications, EDA and hardware design description languages and applications. Through the study of this course, students will have a strong ability to analyze and design digital logic circuits and be able to design digital logic functional components and simple digital systems.

Hours: 32

Credits: 2

Digital Circuit and Logic Design Experiments

Course Code: SCS2021

Course Type: Required

Description: This experiment will provide a complete digital logic experiment package, from the truth table approach to build a 7-segment digital tube driver circuit, to the logic expression approach to build a four-bit comparator, multiplexer, the use of synchronous timing logic to build a BCD counter, from simple combinational logic circuits to complex timing logic circuits, and finally integrated into the implementation of the motion code table system. Experiment from simple to difficult, progressive levels, from devices to components, from components to systems, through the experiment design, simulation, and verification of the three training processes to enable students to master the design of small digital circuit systems, simulation, debugging methods and circuit module packaging methods.

Hours: 16

Credits: 0.5

Operating System

Course Code: CST2031

Course Type: Required

Description: The aim of this course is to enable students to master the basic principles and components of computer operating systems; to become familiar with the ability of operating systems to control hardware, and the ability of operating systems to organize and schedule resources; to focus on the internal characteristics of the design and implementation of operating systems, and to understand the role of computer operating systems in information security.

Hours: 40

Credits: 2.5

Operating System Experiments

Course Code: CST2031

Course Type: Required

Description: Through the experiments of this course, you will be able to master the basic implementation principles of operating systems, the principles and basic methods of processor management, process management, memory management, file management, and the implementation of operating system bootstrapping. Develop the ability to work independently in scientific research and gain practice and experience in operating systems.

Hours: 16

Credits: 0.5

Network Attack and Defense Practice (I)

Course Code: SCS2051

Course Type: Required

Description: The aim of this course is to provide students with an understanding of the concepts, principles, and methods related to network security and attack and defense practices. The course covers including penetration tools, web vulnerability white box and black box auditing, middleware vulnerability principles and exploitation, web penetration practical process, intrusion detection protection, etc.

Hours: 48

Credits: 1.5

Network Attack and Defense Practice (II)

Course Code: SCS2061

Course Type: Required

Description: The aim of this course is to provide students with an understanding of the concepts, principles, and methods related to network security and attack and defense practices. The course covers including penetration tools, web vulnerability white box and black box auditing, middleware vulnerability principles and exploitation, web penetration practical process, intrusion detection protection, etc.

Hours: 48

Credits: 1.5

Network Attack and Defense Practice (III)

Course Code: SCS2071

Course Type: Required

Description: The aim of this course is to provide students with an understanding of the concepts, principles, and methods related to network security and attack and defense practices. The course covers including penetration tools, web vulnerability white box and black box auditing, middleware vulnerability principles and exploitation, web penetration practical process, intrusion detection protection, etc.

Hours: 48

Credits: 1.5

Principle of Cryptography

Course Code: CST2201

Course Type: Required

Description: This course covers: cryptographic concepts, group ciphers, stream ciphers, Hash functions, public key ciphers, digital signatures, authentication, cryptographic protocols, key management, cryptanalysis, and new types of ciphers, etc.

Hours: 64

Credits: 4

Software Security

Course Code: CST2211

Course Type: Required

Description: This course is mainly composed of four parts: software security foundation, malware mechanism, and protection technology, software vulnerability mechanism and protection technology, software cracking, and self-protection technology. Through the classroom teaching and experiments of this course, students should have a comprehensive understanding of the sources of threats to software security, an in-depth understanding of malware mechanisms and master various software security protection methods and techniques, and enhance the design and development of security protection systems.

Hours: 48

Credits: 3

Software Security Experiments

Course Code: CST2221

Course Type: Required

Description: Through this course, students will become familiar with the sources of threats to software security, further master the mechanism of malware and various types of software security protection methods, and enhance the student's ability to write security code and develop corresponding security protection systems. Specific experiments include software security fundamentals, malicious code mechanism analysis, software vulnerability mechanism analysis, software protection mechanism analysis, and software self-protection reinforcement.

Hours: 16

Credits: 0.5

Security of Computer Network

Course Code: CST2111

Course Type: Required

Description: The course starts from the basic concepts of network security, firewalls, intrusion detection, virtual private networks, Web security, and other aspects of the lecture. Students will understand the functions and working processes of the main network security protocols; master the composition and working principles of common network security hardware devices; in-depth understanding and focus on the knowledge of network security threat analysis, and be able to conduct preliminary emergency response to network threats.

Hours: 40

Credits: 2.5

Security of Computer Network Experiments

Course Code: CST2121

Course Type: Required

Description: The course includes network security simulation experimental sessions, requiring students to conduct experimental simulation and verification of network countermeasures and Web security protocols to help students gain a deeper understanding of network security threat analysis techniques.

Hours: 16

Credits: 0.5

Information System Security

Course Code: CST2351

Course Type: Required

Description: This course focuses on software security, information security model, security architecture, operating system security, web security, hardware and software collaborative defense, blockchain, virtualization technology, and cloud services

Hours: 56

Credits: 3.5

Information System Security Experiments

Course Code: CST2361

Course Type: Required

Description: This course includes software security experiments, operating system security experiments, and web security experiments, aiming at helping students gain a deeper understanding of security threat analysis techniques.

Hours: 16

Credits: 0.5

Compiler Principles

Course Code: CST2011

Course Type: Required

Description: Focuses on the fundamentals and basic implementation

of compiled constructs for programming languages. Lectures on formal languages, finite automata, lexical analysis, top-down syntactic analysis, and bottom-up syntactic analysis, LR analysis methods, attribute grammars and syntax-guided translation, code generation for semantic analysis, dynamic allocation and management of memory, organization, and management of symbol tables, optimization problems, and code generation.

Hours: 32

Credits: 2

Compiler Principles Experiments

Course Code: CST2021

Course Type: Required

Description: The experiments are divided into four parts, focusing on four important stages of compiler design, namely lexical and syntactic analysis, semantic analysis, intermediate code generation, and target code generation. Each chapter gives specific experimental requirements, experimental guidelines, and test samples, which together cover the whole process of designing and implementing a practical compiler.

Hours: 32

Credits: 1

Computer Organization

Course Code: SCS2031

Course Type: Required

Description: Through the theoretical study and practice of this course, students should achieve the following objectives: to understand the composition and structure of a single-processor computer system, the internal working principles and the way the components are interconnected, and to have a complete concept of the computer system as a whole; to understand the concept of the hierarchical structure of computer systems, to be familiar with the interface between hardware and software, to master the RISC instruction set architecture represented by MIPS. They should be able to apply the basic principles and methods of computer composition to calculate and analyze theoretical and practical problems in computer hardware systems, and be able to carry out simple designs of single-cycle/multi-cycle/ pipeline data paths and their control according to the semantics of instructions.

Hours: 32

Credits: 2

Computer Organization Experiments

Course Code: SCS2041

Course Type: Required

Description: This course requires students to understand the basic principles of MIPS single-cycle and multi-cycle processors, and to design and implement MIPS single-cycle and multi-cycle processors in the Logisim platform using the design principles of hard-wired controllers and micro-programmable controllers, respectively.

Hours: 16

Credits: 0.5

Specialty-oriented Courses

Computational Thinking

Course Code: CST5181

Course Type: Elective

Description: Through this course, students will acquire the ability to analyze new information and deal with new problems. This way of thinking leads to improved problem-solving skills. The approach to computational thinking can be divided into four main basic steps, namely decomposition, pattern recognition, abstraction, and algorithms, and three extended aspects: modeling, evaluation, and generalization.

Hours: 32

Credits: 2

Introduction to Information Technology

Course Code: CST5391

Course Type: Elective

Description: The course is an introductory computer science course for undergraduates, and the main teaching contents include: interactive theme teaching: security challenges in cyberspace; introduction to mathematics and cyber security, mainly to let students understand the importance of the basic subject of mathematics and the basic problems in cyber security; introduction to cyberspace attack and defense, about the current basic knowledge of attack and defense in cyberspace.

Hours: 24

Credits: 1.5

Numerical Analysis

Course Code: CST5281

Course Type: Elective

Description: Numerical analysis, also known as computational methods, is an important professional course in the computer science discipline and is a bridge course between mathematics and computers. Through the study, students master the basic principles of numerical computation and learn the skills and techniques of using computational methods to solve practical problems, laying the foundation for subsequent big data analysis, algorithm optimization and practical engineering applications, etc. The main teaching contents include the basic theory of error, polynomial interpolation methods, numerical integration and numerical differentiation, numerical solution of ordinary differential equations, numerical solution of equations for roots, etc.

Hours: 32

Credits: 2

Advanced Cryptography Application

Course Code: CST5111

Course Type: Elective

Description: This course is mainly taught from three aspects, such as theoretical foundation of cryptographic algorithms, cryptographic algorithms and cryptographic algorithm applications. In a comprehensive explanation of the basic knowledge of cryptography and cryptographic algorithms and their security, while focusing on the application of some typical cryptographic algorithms, mainly to strengthen the understanding and application of cryptographic algorithms; through the course experiments and practical applications of the course design exercise, to train students' engineering practice and application skills.

Hours: 32

Credits: 2

Algorithm Design and Analysis

Course Code: CST5311

Course Type: Elective

Description: Algorithm Design and Analysis is an important

professional foundation course for computer science majors. In computer science, both software design and hardware design are inseparable from algorithms, the core of algorithmic computer science. This course opens the door of algorithms for students, introducing common algorithm design strategies and techniques, many classical problems and their algorithm design ideas, methods and techniques of algorithm proof and analysis. Through the study of this course, students will master the basic theory, methods and techniques of algorithm design, train computational thinking, and improve the practical ability to analyze and solve problems.

Hours: 48

Credits: 3

Database System

Course Code: CST2281

Course Type: Elective

Description: Understand the level of development and development trend of database technology; understand the common data model, understand the basic concepts and methods of relational database, relational data theory and database design; proficient in the use of SQL, the standard language of relational database; master the database recovery technology, concurrency control, security and integrity; master the mainstream database management system SQL Server application technology; familiar with Database application development environment.

Hours: 48

Credits: 3

Reverse Engineering Technology

Course Code: CST5221

Course Type: Elective

Description: Starting from a runnable program system, using a variety of computer technologies such as decryption, disassembly, system analysis, and program understanding, the structure, process, algorithm and code of the software are reversely disassembled and analyzed, and the source code of the software product is derived. , design principle, structure, algorithm, processing procedure, operation method

Hours: 48

Credits: 3

Multimedia Data Security

Course Code: CST5101

Course Type: Elective

Description: Multimedia information security deals with the security and assurance of multimedia generation, transmission, distribution and application processes. Multimedia Information Security seeks to cover the mainstream research on multimedia-related information security, including data characteristics of multimedia, steganography and steganalysis techniques, digital watermarking, digital media forensics, biometric authentication and biomodelling security

Hours: 32

Credits: 2

Network Security Programming

Course Code: CST5321

Course Type: Elective

Description: On the basis of understanding the basic techniques and principles of network security and standard cryptographic algorithms, improve the practical skills of network security programming, be able to perform socket programming, and learn to use the popular network security package CryptoAPI and OpenSSL for network security programming.

Hours: 32

Credits: 2

Network Security Programming

Course Code: CST5331

Course Type: Elective

Description: The purpose and task of this course is to enable students to understand the legal and regulatory concepts and evidence characteristics of computer network forensics, master the basic principles of computer network forensics, the basic principles and methods of computer network evidence acquisition, analysis, and storage techniques, and master the basic computer network. Use of forensic tools, and have the preliminary ability to engage in related technical and management work in fields that have a certain connection with computer network forensics.

Hours: 32

Credits: 2

Wireless Network Security

Course Code: CST5341

Course Type: Elective

Description: The purpose and task of this course is to enable students to understand the legal and regulatory concepts and evidence characteristics of computer network forensics, master the basic principles of computer network forensics, the basic principles and methods of computer network evidence acquisition, analysis, and storage techniques, and master the basic computer network. Use of forensic tools, and have the preliminary ability to engage in related technical and management work in fields that have a certain connection with computer network forensics.

Hours: 32

Credits: 2

Blockchain Technology and Applications

Course Code: CST5571

Course Type: Elective

Description: This course is a professional elective course of computer science and technology. The main purpose of this course is to enable students to understand the origin, development and application needs of various industries; understand and master the basic principles and principles of blockchain, cryptography, consensus mechanisms, incentive mechanisms, smart contracts, P2P networks, etc. Practical application, understand the design ideas of security mechanisms in blockchain, and learn to use "blockchain thinking" to analyze and design application solutions in various industries.

Hours: 32

Credits: 2

Trusted Computing

Course Code: CST5201

Course Type: Elective

Description: Through the study of this course, students are required to establish the basic concepts of high-trust computing; master the formal technology and methods of trusted computing; understand the

driving technology and application of trusted computing; master network reliability technology, network survivability technology and its application. Evaluation model; master the test-based reliability evaluation method of common evaluation models of system reliability; understand the basic methods of solving reliability problems in the field of trusted computing, improve students' problem analysis and problem solving skills, and understand the industry Relevant technical specifications and industrialization progress of trusted computing.

Hours: 32

Credits: 2

Cloud Computing Virtualization

Course Code: CST5461

Course Type: Elective

Description: Cloud computing and virtualization technology is an elective course for university computer majors. The purpose of this course is to have an in-depth understanding of cloud computing and virtualization related knowledge, master the concept of cloud computing, and lay a foundation for students to study and work in the future: students master the service mode and architecture of cloud computing, and can initially master the use of public cloud to deal with computing problems . Students initially have the ability to design cloud computing and propose cloud computing solutions.

Hours: 24

Credits: 1.5

Artificial Intelligence

Course Code: CST5481

Course Type: Elective

Description: Artificial intelligence is a science that studies how to use computers to simulate human intelligence activities such as perception, reasoning, learning, thinking, and planning that the human brain is engaged in, to solve problems that require human intelligence to solve, and to extend human intelligence. .Master the basic concepts, basic principles, knowledge representation, reasoning mechanism and solving techniques of artificial intelligence, as well as the technical methods of machine learning. Master one problem and three major technologies of artificial intelligence, namely general problem solving and knowledge representation technology, search technology.

Hours: 24

Credits: 1.5

Introduction to Online Learning

Course Code: SCS5012

Course Type: Elective

Description: The instruction in this course will introduce knowledge of machine learning, data mining and statistical pattern recognition. Introduction to the basic concepts and development process of related fields; study of different kinds of machine learning algorithms, including supervised learning and unsupervised learning. Excellent examples of machine learning will be introduced, and the course will take case studies and applications to learn how to apply learning algorithms to text understanding, computer vision, medical informatics, audio, data mining and other fields.

Hours: 24

Credits: 1.5

Internship and Practical Training

Course Project of Programming

Course Code: CST3531

Course Type: Required

Description: The course aims at

- (1) Comprehensive training objectives: the course involves the main programming elements of C language, such as typical data types and control structures; covers a variety of typical data structures such as linear structures, binary trees, tree structures, graph structures, look-up table structures, and the organization of data files. Change from the single-element or single-structure training of the previous laboratory course to multi-element, multi-structure integrated application training.
- (2) Cultivate the ability of application problem solving: programming is for problem-solving and improves the ability of comprehensive analysis and representation of application problems, data abstraction and modeling, problem definition and function division, basic data collection and test case construction, etc.
- (3) Program writing to program design: In the laboratory course, the instructor basically describes the relevant data structure, program framework, and main algorithms, based on which the program writing training is conducted, which is a verification and reproducible programming practice. "Integrated Programming" requires students to build a solution model based on the analysis of the application problem,

design the data structure and main algorithms, and thus develop the program. The course requires students to analyze the application problem, build the solution model, design the data structure and main algorithm, and then carry out programming, which reflects the meaning and weight of "design" more.

(4) Further develop programming standardization and engineering literacy: Through the practice of "integrated programming", students will further develop good programming habits and certain engineering literacy in programming and software development, following the process of problem definition, necessary requirements analysis, system design, programming implementation, program testing and analysis, and preparation of integrated programming course design reports. The course is organized according to the process of problem definition, necessary requirements analysis, system design, programming implementation, program testing, and analysis, and preparation of a comprehensive programming course design report to develop initial engineering programming literacy.

Credits: 1

Course Project of Operating System

Course Code: CST3521

Course Type: Required

Description: The course aims at helping students to

1. Understand the concept of protected mode
2. Master the writing of protected mode programs
3. Understand CPU support for segment/page mechanism
4. Understand the principle and simple application of segment/page mechanism
5. Understand the concept of task and the process of task switching
6. Understand and apply the concept of "device is file"
7. Be familiar with the Linux device driver development process
8. Understand the blocking and non-blocking mechanisms of devices
9. Understand and apply the kernel synchronization mechanism

Credits: 1

Course Project of Cryptography

Course Code: CST3551

Course Type: Required

Description: Students need to implement the algorithms below in

C/C++:

1. Implementation of the original SPN algorithm
2. Linear analysis of the original SPN
3. Differential analysis of the original SPN
4. SPN Enhancement
5. RSA parameter generation
6. Modulo repetition squared
7. Chinese Remainder Theorem
8. Montgomery Algorithm
9. SM2 public key encryption algorithm
10. PKCS#7
11. Rainbow table generation

Credits: 1

Course Project of Network Security

Course Code: CST3621

Course Type: Required

Description: The course aims at helping students to

1. Combined with theoretical course learning, an in-depth understanding of the basic principles and protocols of computer network security, and consolidate the basic theoretical knowledge of computer network security
2. Master computer network programming methods and expand students' application skills
3. Strengthen the understanding of the network protocol stack
4. Improve the ability to analyze and design software systems and write documentation
5. Develop teamwork skills.

Credits: 1

Course Project of Software Security

Course Code: CST3591

Course Type: Required

Description: There are various methods for analyzing the behavior of a sample program without source code. This course is designed to accomplish basic program behavior analysis using the interface provided by the Detours open-source project package. The task is divided into two main parts: API call interception and analysis. The tasks can be implemented on a Windows platform of your choice, and are programmed in C or C++. The Windows platform uses the Microsoft Detours open-source library, which can be compiled and used in the

VS2019 environment.

Credits: 1

Engineering Internship

Course Code: CST3601

Course Type: Required

Description: The internship lasts for 3 weeks, and under the guidance of the internship supervisor, students seek or apply for internship units on their own. Internship units or departments include, but are not limited to, computer or cyberspace security-related departments of various enterprises and institutions, research institutes or university laboratories, or engage in computer and security-related matters.

Credits: 1.5

Integrated Training of Information Security

Course Code: CST3651

Course Type: Required

Description: The aim of this course is to provide students with a platform of to practice network attack and defense. The course covers including penetration tools, web vulnerability white box and black box auditing, middleware vulnerability principles and exploitation, web penetration practical process, intrusion detection protection, etc.

Credits: 2