序号	Course Name
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7	Linear Algebra
8	Digital Logic
9	Digital Logic Experiment
10	Microcomputer Application Software
12	Assembly Language
14	PASCAL Language
15	PASCAL Language Operation Practice

16	Data Structure
18	Computer Organization
19	Microcomputer
21	Introduction to Microcomputer Use
22	Experiment for Elementary Microcomputer Use

23	Basics of Discrete Mathematics
24	C Language
25	C Language Operation Practice

Course Description	
After self-study of this course, the examinee is requested to systematically obtain the elementary knowledge of including matrix, determinant,N-dimensional vector , system of linear equations, eigenvalue and eigenvector and real quadratic form as well as necessary basic theory and frequently-used mathematical methods.	
Based on digital electronic technique, it involves in the fundamental principles, elementary analysis and design methods of digital technique, and has strong engineering practicalness. After self-study of this course, the examinee is requested to master the fundamental laws and regulations of logic algebra; know well and grasp the basic structure, logical function, main external characteristics and parameters of integrated cell circuits forming digit circuit.	
Utilize the learned knowledge of combinational logic circuit and sequential logic circuit in digit circuit, and realize the digital clock through the imitation of Quartus II 7.2 software in FPGA. Flexibly using the functions of components such as decoder, data selector and counter to realize dynamic display.	
Learn about the principles and roles of various interface circuits of microcomputer; master the design and analysis methods of interface, learn to programme the interface with assembly language, possess some hands-on experimental ability and the ability of compiling interface application program.	
Mainly based on INTEL8086 instruction system, this course introduces the assembly language programming methods in mainstream microcomputer IBM PC and its compatible machine. It mainly introduces the programming techniques, interrupt routine design as well as input and output routine design of basic structures such as instruction system, sequence, embranchment, circulation and subroutine.	
Mainly learn the constitutional and grammatical rules of PASCAL Language and the methods to programme with programming language. After introducing the rudimentary knowledge of PASCAL Language, this course guides the students to know PASCAL Language as well as thought and methods of program design from simple program of sequential execution and the program with embranchment and loop structure to the modularized program with function or procedure,from standard data type to user-defined structure data type,from static data type to dynamic data type, from simple to complex step by step. Throughout this course are algorithm, data and top-down structured programming methods of stepwise refinement.	
Be familiar with turbo-pascal system and write/writeln format; use of read/readln; simple program of sequential execution, using IF statement to programme, using FOR statement to describe loop, using WHILE and REPEAT statements to describe loop, comprehensive exercises of loop structure, character data processing, use of array, use of procedure and function, application of assemblage and record, pointer and linked list, document handling.	

This course introduces how to store, transmit and transform various data in the computer, including: Array, Linked List, Stack and Queue, Recursion, Tree and Forest, Graph, Heap and Priority Queue, Assemblage and Search Structure, Sorting, Indexing and Hashing Structure, etc. And it takes C Language as the descriptive tool of algorithm to strengthen the elementary knowledge of data structure.
This course discusses the theory of constitution of all computer components and system, internal working mechanism within one-of-a-kind system as well as the theory of constitution, logic implementation, design method and technique of interconnection to form complete machine system of each large component; discusses the problems with generality during the computer organization; appropriately introduces new knowledge and technique embodying the development features of modern computers. Its main contents include: computer system overview, data expression in computer, arithmetic method and unit, instruction system, controller, memory unit, input and output system.
This course includes three major parts: microcomputer hardware constitution and working principles, microcomputer interface technology, microcomputer application technology. Based on Intel 8086 microprocessor, the part of microcomputer principles systematically introduces basic structure and working principles of 16-bit microcomputer, and meanwhile makes expansive introduction to the key technology of 32-bit microprocessor such as 80x86 and Pentium; based on the introduction of 8086 instruction system, the part of assembly briefly introduces the instructions of extension and increment of 80x86 and Pentium; the part of assembly language programming emphatically introduces basic approaches and skills, which are applied and deepened in the follow-up chapters; the part of interface technology emphatically elaborates the memory interface and interrupt technique, counting/timing technique, DMA technique, parallel interface, serial interface, bussing technique, analog channel interface, principles and interface of human-computer interaction device, etc.
This course emphatically introduces the rudimentary knowledge, basic concepts and elementary operation techniques of the computer, stresses the use of system software and application software in common use, and meanwhile gives consideration to the leading edge knowledge of computer application area. Its main contents include basic theory and elementary knowledge of computer science, Windows operating system, Hanzi coding concept and input method; use of main Office softwares, elementary knowledge of computer network, use of Internet, simple webpage making and release, general knowledge of application of computer multimedia.
After the study of Introduction to Use of Microcomputer, the students can further improve their practical ability of operation, may use the computer softwares in common use and complete the compilation of documents.

Its main content represents four cores in discrete mathematics (set theory, algebraic system, graph theory and mathematical logic). The part of domestic application firstly brings in and introduces the contents related to discrete modeling systematically, and combines discrete mathematics with its application in computer and IT field, thus making the course of discrete mathematics really integrated in the computer and IT filed.
With the study of program structure and programming technique as main objective, its contents include: algorithm, basic data type, simple program, selection structure, loop structure, array, function, pointer and struct, etc.
Learn to use Turbo-C, complete complicated program design, and realize prospective functions with coding.

序号	Courese Name
1	Higher Mathematics (Engineering University Program)
2	Computer Network Security
3	Java Language Programming (1)
4	Signal and System (Experiment)
5	Experiment for Fundamentals of Computer Network
7	Physics (Engineering)(Practice)
8	Management of Computer Network
9	Database Technology (Experiment)
10	Internet and its Application (Practice)

11	Network Operating System
12	Database Technology
13	Engineering Economy
14	LAN Technology and Network Construction Engineering
15	Principles of Data Communication

16	Fundamentals of Computer Network
17	Internet and its Application
18	

Course Description	
After the study of this course, the Self-study candidates is requested to systematically obtain elementary knowledge, theory and methods of calculus of univariate function and multivariate function (including vector algebra and space analytic geometry), ODE (Ordinary Differential Equation) and series; master conceptual framework, fundamental theory and basic approach of all related contents, have skilled abilities of operation, analysis and space imagination as well as preliminary ability of abstract mathematical model, laying necessary foundation for studying follow-up courses and further expanding mathematical knowledge.	
The contents of this course includes: basic concept of network security, security hole of network, basic measures for network security (NAT), firewall technology (simple access list, access list based on context, content filtering, virus protection and intrusion detection, etc.), active network security technology (network scanning), VPN technology (tunnel mode such as IPSec,coverage mode such as MPLS). After the study of this course, the examinee is requested to master usual network security hole and prevention technology.	
The contents of this course include: class, inheritance, exception, interface, package, thread and examples of application program. After the study of this course, the examinee is requested to master elementary knowledge of Java Language and have the ability of application programming.	
Combining the rudimentary knowledge of Signals and Systems, assess the students whether they can complete the designated signal output with the circuit board and relevant equipments provided.	
Combining with the rudimentary knowledge of Fundamental Principles of Computer Network, assess the students whether they suffice to accomplish the establishment of small LAN independently.	
Combining with the rudimentary knowledge of Physics, check independent operational capacity of the students by means of designing different experimental topics.	
Its contents include: basic concepts and functions of computer network management (configuration management, failure management, safety management, accounting management, performance management),NMP (Network Management Protocol), integration of network management and system management (resource management), network security policy, concept, model and function of network security system; encryption technique, etc.	
Combining with the rudimentary knowledge of Database Technology, assess the students whether they are equipped to finish the operation of relevant database (e.g., setup, compilation of stored procedure) independently.	
Combining with the rudimental knowledge of Internet and Its Applications, check the students whether they suffice to use the internet and solve related problems during the using process by means of designing different practical operational topics.	

The contents of this course include: conceptual framework, fundamental principles and basic approaches of OS (Operating System), functions and characteristics, architecture, process communication, resource sharing, service software and application program of NOS (Network Operating System).
The main contents include: introduction to DBS (Database System), relational data model, basic theory of relational calculus, SQL(Structured Query Language), relational standardization, database design, database protection (or management), elementary knowledge and application technology of SQL-Server. After the study of this course, the examinee is requested to master the fundamental principles of database system and have the application ability of database.
After the study of this course, master elementary knowledge and theory of engineering economic analysis as well as basic approaches of economic benefit evaluation, fundamental theory of financial analysis and national economic analysis. Be able to conduct economic benefit analysis to various technique practical activities with market as the premise, economy as the target and technology as the means, and evaluate them scientifically and reasonably. Master conceptual framework, fundamental principles and basic approaches of engineering economics; be able to study, analyze and evaluate various technique practical activities (e.g., economic evaluation of investment program, economic analysis of equipment replacement, value engineering analysis, etc.) with basic principles, methods and skills of engineering economics, and provide scientific basis for decision layer to acquire the technical proposal with satisfactory economic benefit.
The contents of this course include: frequently-used Ethernet technology, transmission mode (telephone line, DDN, XDSL and optical fiber, etc.) and switching equipment (router, switchboard, two or three-layer switch, etc.), network protocol and network test device, network engineering design and examples. After the study of this course, the examinee is requested to master the LAN technique, methods of network construction and frequently-used network technique and equipment.
The contents of this course include: fundamental constitution of communication system and network, basic principles and functions of communication protocol, controlling principle of communication process, fundamental characteristics and development of telecommunication network and computer network; signals and systems, time-domain and frequency-domain analysis of continuous time system, two port network, frequency characteristic of network; data communication principles, constitution and transmission mode of data communication system, signal base band and frequency band as well as digital transmission theory and basic theory of error control. After the study of this course, the examinee is requested to master the constitution and fundamental principles of communication network.

以太网：Ethernet

The contents of this course include: basic structure of computer network, switching technique, OSI network architecture (physical layer, data link layer, network layer, transport layer and upper layer), TCP/IP (subnet, IPTCP/UDP), media access control technique as well as LAN and internetworking technique. After the study of this course, the examinee is requested to know frequently-used network model, master fundamental principles and concepts of computer network, be familiar with the techniques and protocols of computer network in common use, and have the ability to adapt to the development of computer network.
The contents include: concepts and fundamental principles of Internet and Intranet, connection type and interface, IP address, net play procedure, web service, E-Mail, www and its homepage, electronic news, telnet inquiry, DNS (Domain Name Service), BBS (Bulletin Board Service) and application tools, etc.