Computer Graphics (420030)

Interaction, graphical architectures, raster algorithms, graphical objects and interaction, two-dimensional viewing and clipping, data structures, geometrical transformations, three-dimensional viewing, illumination and color, visibility; rendering

Digital Image Processing (420137)

Representation, conversion and transmission of digital images, linear and nonlinear spatial filters, frequency domain filters, image restoration, image segmentation, image compression, JPEG/JPEG2000 standards.

Software Engineering (420101)

The product, the process, system engineering, analysis concepts and principles, analysis modeling, design concepts and principles, architectural design, user interface design, component-level design, object-oriented concepts and principles, object-oriented analysis, object-oriented design.

Software Test (420111)

The software testing concepts, black box testing, white box testing, integration testing, system testing, validation testing, α testing, β testing, testing of object-oriented class, testing of object-oriented system, GUI testing, defining the test plan, trace and management of bugs and so on.

Software Project Management (420028)

Project Management concepts, software project plan, project scheduling and tracking, risk analysis and management, the usage of Microsoft Project 2000 and so on.

Object Oriented Analysis and Design with UML (420106)

Basics of UML for analysis, modeling and design, the 4+1 views and 9 diagrams in details, practice with visual modeling tools Rational Rose, full object analysis and design cycle, from requirements analysis and use case analysis to object discovery and modeling, case studies, program from the UML artifacts in Java, applying UML to model systems built upon J2EE

JAVA Enterprise Development Techniques (420107)

J2EE Overview, Servlet Overview, JSP Specification and Syntax, JSPs with JavaBeans, JDBC, Servlet API, Http Session Management, MVC Architecture,
Enterprise JavaBean Overview, EJB Session Technologies, CMP EJBs, BMP EJBs, Application Server Architecture, Application Assembly, Application installation.

XML Technology and Web Service Techniques (420108)
Development techniques of scalable Web Service, designing and building Web Service using Java and .Net, the basic concept of designing software as a service, service-oriented architectures, core technologies: XML, SOAP, WSDL and UDDI, the JAX-RPC services architecture, steps to develop web service using Java, secure Web services that provide business partners with seamless access.

Database Principles and Applications (420023)
Entity-Relationship modeling, relational data model, database design and normalization, internal database structures, interactive and embedded SQL, stored procedures and triggers, data integrity and security, advanced logical database design issues, physical database design including query optimization, transaction management, concurrency control, and recovery.

Large-scale Database Systems (420125)
Introduction to the Oracle Server, Data Blocks, Extents, and Segments, Table spaces, Data files, and Control Files, The Data Dictionary, Database and Instance, Startup and Shutdown, Application Architecture, Memory Architecture, Process architecture, Database Resource Management, Schema Objects, Partitioned Tables and Indexes, Native Data types, Object Data types and Object Views, SQL, PL/SQL, Transaction Management, Triggers, Data Concurrency and Consistency, Data Integrity, Controlling Database Access, Privileges, Roles, and Security Policies, Auditing, etc

Data Warehousing, Data Mining, and Business Intelligence (420155)
Data Warehousing, Data Warehouse Environment, Data Warehouse Characteristics, Contrasting OLTP and DW Environments, Basic Data Warehouse Architecture, A Data Warehouse with a Staging Area and Data Marts, Normalization, Introduction to Data Mining, Data Mining Basic Algorithms. Techniques in Business Intelligence

Introduction of Computer Science (420103)
This course introduces students to history of computing, number representation, binary Arithmetic, computer architecture, Microsoft Word, fundamnet of database, Microsoft Excel, Microsoft PowerPoint, fundamnet of computer network.

Software Design and Verification (420170)
An overview of mathematical techniques for the specification and analysis of embedded and hybrid systems including invariant, safety and liveness properties, temporal logic or probabilistic branching time logic, model checking, timed automata, hybrid automata or probabilistic automata. Case studies for various controller synthesis or protocols from the embedded systems area are also investigated.
Mainframe based Banking System introduction

An introduction to Financial Market and institutions. the concept of banks, an
general description and analysis of mainframe based banking systems. course will be
focused on simulating banking system, and developing simplified banking system
modules.

COBOL Programming (420163)

Structuring Program, Using Data, Numbers and Arithmetic, Table, Selecting and
Repeating Program Actions, Handling String, Subprogram, File, QSAM File, VSAM
File, Sort and Merge.

CICS TS Basic (420164)

An introduction of CICS structure, component, online issued commands and
related concepts, guide to develop programs on CICS, including CICS COBOL
programming, map programming, compiling, debugging, CICS request for MVS
resources etc.

Fundamental of Large Scale Business Database

The course introduces the internal structure and implementation of a RDBMS
system, with DB2 as a case study. It emphasizes the problems and challenges a
business database has to face in a production environment, and guide the students to
the solutions.