



AAER's

Asian College of Science and Commerce

Affiliated to SPPU and Approved by Govt of Maharashtra Accredited by NAAC with B+ Grade



Course Outcomes

The examination format consists of continuous assessment, which accounts for 30 marks for internal evaluation and 70 marks for external evaluation.

Class : F.Y.B.Sc(CS) (Semester-I)

| Sr.No. | Course Name | Course Outcomes |
|--------|---|--|
| 1 | Problem Solving Using Computer and 'C' Programming - I | To introduce the foundations of computing, programming and problem- solving using computers. |
| | | To develop the ability to analyze a problem and devise an algorithm to solve it. |
| | | To formulate algorithms, pseudocodes and flowcharts for arithmetic and logical problems |
| | | To understand structured programming approach. |
| | | To develop the basic concepts and terminology of programming in general. |
| | | To implement algorithms in the 'C' language. |
| | | To test, debug and execute programs. |
| 2 | Database Management Systems | To understand the fundamental concepts of database. |
| | | To understand user requirements and frame it in data model. |
| | | To understand creations, manipulation and querying of data in databases. |
| 3 | Practical course on Problem Solving using Computer and 'C' programming and Database Management Systems(Practical) | To understand the program development life cycle. |
| | | Solve simple computational problems using modular design and basic features of the 'C' language. |
| | | Understand basic database management operations. |
| | | Design E-R Model for given requirements and convert the same into database tables. |

| | | |
|-----|---|---|
| 4. | Matrix Algebra | A students should be able to perform certain algorithms, justify why |
| | | these algorithms work, and give some estimates of the running times of these algorithms. |
| | | A students should be able to write cohesive and comprehensive solutions to exercises and be able to defend their arguments. |
| 5. | Discrete Mathematics | A students should be able to solve basic exercises of the type: given a graph with properties X, prove that the graph also has property Y. |
| | | A students should develop an appreciation for the literature on the subject and be able to read and present results from the literature. |
| 6. | Mathematics Practical | A students should be able to perform certain algorithms, justify why these algorithms work, and give some estimates of the running times of these algorithms. |
| | | A students should develop an appreciation for the literature on the subject and be able to read and present results from the literature. |
| 7. | Descriptive Statistics | To tabulate and make frequency distribution of the given data. |
| | | To compute the measures of attributes. |
| 8. | Mathematical Statistics | To use various graphical and diagrammatic techniques and interpret. |
| | | To fit the Binomial and Poisson distributions. |
| 9. | Statistics Practical | To study free statistical softwares and use them for data analysis in project. |
| | | To fit the Binomial and Poisson distributions |
| | | To compute various measures of central tendency, dispersion, Skewness and kurtosis. |
| 10. | ELC-111: Semiconductor Devices and Basic Electronic Systems | To study various types of semiconductor devices |
| | | To study elementary electronic circuits and systems |
| 11. | Principles of Digital Electronics | To get familiar with concepts of digital electronics |
| | | To learn number systems and their representation |
| | | To understand basic logic gates, Boolean algebra and K-maps |
| | | To study arithmetic circuits, combinational circuits and sequential circuits |
| 12. | Electronics Practical | To study various types of semiconductor devices |
| | | To study arithmetic circuits, combinational circuits and sequential circuits |



AAER's

Asian College of Science and Commerce

Affiliated to SPPU and Approved by Govt of Maharashtra Accredited by NAAC with B+ Grade



Course Outcomes

The examination format consists of continuous assessment, which accounts for 30 marks for internal evaluation and 70 marks for external evaluation.

Class : F.Y.B.Sc(CS) (Semester-II)

| | | |
|----|---|---|
| 1. | Linear Algebra | A student should get a relational understanding of mathematical concepts and should be able to follow the patterns involved, mathematical reasoning. |
| | | A student should get adequate exposure to global and local concerns that explore them many aspects of Mathematical Sciences. |
| 2. | Graph Theory | A student should be able to recall basic facts about mathematics and should be able to display knowledge of conventions such as notations, terminology and recognize basic geometrical figures and graphical displays , state important facts resulting from their studies. |
| | | A student should be made aware of history of mathematics and hence of its past, present and future role as part of our culture. |
| 3. | Mathematics Practical | A student should get adequate exposure to global and local concerns that explore them many aspects of Mathematical Sciences. |
| | | A student should get adequate exposure to global and local concerns that explore them many aspects of Mathematical Sciences. |
| 4. | Advanced 'C' Programming | To study advanced concepts of programming using the 'C' language. |
| | | To understand code organization with complex data types and structures. |
| | | To work with files. |
| 5. | Relational Database Management Systems | To teach fundamental concepts of RDBMS (PL/PgSQL) |
| | | To teach database management operations |
| | | Be familiar with the basic issues of transaction processing and concurrency control |
| | | To teach data security and its importance |
| 6. | Practical Course on Advanced 'C' Programming and Relational Database Management Systems | To solve real world computational problems. |
| | | To perform operations on relational database management systems. |
| 7. | Instrumentation Systems | To study Instrumentation System |
| | | To study various blocks of Instrumentation System |
| | | To study Smart Instrumentation System |
| 8. | Basics of Computer | To get familiar digital sequential circuits |
| | | To study Basic computer Organization |
| | | To study Memory architecture |

| | Organisation | |
|-----|--|---|
| 9. | Electronics Lab IB | To study Instrumentation System |
| | | To get familiar digital sequential circuits |
| 10. | Methods of Applied Statistics | To understand the relationship between two variables using scatter plot. |
| | | To understand the trend in time series and how to remove it. |
| 11. | Continuous Probability Distributions and Testing of Hypotheses | To compute coefficient of correlation, coefficient of regression. |
| | | To understand the importance and functions of different statistical organizations in the development of nation. |
| 12. | Statistics Practical | To understand the trend in time series and how to remove it. |
| | | To generate model sample from given distributions. |



AAER's

Asian College of Science and Commerce

Affiliated to SPPU and Approved by Govt of Maharashtra Accredited by NAAC with B+ Grade



Course Outcomes

The examination format consists of continuous assessment, which accounts for 30 marks for internal evaluation and 70 marks for external evaluation.

Class : S.Y.B.Sc(CS) (Semester-III)

| | | |
|----|---|--|
| 1. | Groups and Coding Theory | A student should be able to recall basic facts about mathematics and should be able to display knowledge of conventions such as notations, terminology and recognize basic geometrical figures and graphical displays, state important facts resulting from their studies. |
| | | A student should be made aware of history of mathematics and hence of its past, present and future role as part of our culture. |
| 2. | Numerical Techniques | A student should get adequate exposure to global and local concerns that explore them many aspects of Mathematical Sciences. |
| | | A student should be made aware of history of mathematics and hence of its past, present and future role as part of our culture. |
| 3. | Mathematics Practical: Python Programming Language-I | A student should be made aware of history of mathematics and hence of its past, present and future role as part of our culture. |
| | | A student should get a relational understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning. |
| 4. | Software Engineering | To get knowledge and understanding of software engineering discipline. |
| | | To learn analysis and design principles for software project development. |
| 5. | Practical course on CS 231 (Data Structures and Algorithms I) and CS 232 (Software Engineering) | To learn the systematic way of solving problem |
| | | To learn analysis and design principles for software project development. |
| 6. | Microcontroller Architecture & Programming | To study the basics of 8051 microcontroller |
| | | To study the Programming of 8051 microcontroller |
| | | To study the interfacing techniques of 8051 microcontroller |
| | | To design different application circuits using 8051 microcontroller |

| | | |
|----|--------------------------------|---|
| 7. | Practical Course Electronic | To get hands on training of Embedded C |
| | | To study experimentally interfacing of microcontroller |
| | | To design, build and test modulator and demodulators of digital communication |
| | | To build and test experimentally various techniques of wired communication |
| | | To develop practical skills of network setup |



AAER's

Asian College of Science and Commerce

Affiliated to SPPU and Approved by Govt of Maharashtra Accredited by NAAC with B+ Grade



Course Outcomes

The examination format consists of continuous assessment, which accounts for 30 marks for internal evaluation and 70 marks for external evaluation.

Class : S.Y.B.Sc.(CS) (Semester-IV)

| Sr.No. | Course Name | Course Outcomes |
|--------|---|---|
| 1. | Embedded System Design | To understand the concept of Embedded systems. |
| | | To study the design flow and available tools for an Embedded system. |
| | | To understand the implementation of embedded system using firmware and hardware components. |
| | | To acquire programming skills for the development of Embedded system design. |
| | | To develop practical skills for designing embedded system Applications. |
| 2. | Wireless Communication and Internet of Things | To learn and understand applications of wireless communication system |
| | | To learn and understand cellular system |
| | | To learn and understand architecture of short range Wireless Technologies |
| | | To learn and understand basics of Internet of Things |
| | | To study applications of IoT |
| 3. | Practical Course ELECTRONIC | To use basic concepts for building various applications of embedded electronics. |
| | | To build experimental setup and test the circuits. |
| | | To develop skills of analyzing test results of given experiments. |
| | | Developing Trained Personals for educating and training for upcoming graduates in wireless communication. |
| | | Implement basic IoT applications on embedded platform |
| 4. | DATA STRUCTURES AND ALGORITHMS- | To learn the systematic way of solving problems |
| | | To design algorithms |
| | | To understand the different methods of organizing large amount of |

| | | |
|----|--|--|
| | II | data |
| | | To efficiently implement the non-linear data structures |
| 5. | Computer Networks-I | To prepare students with basic networking concepts: data communication, protocols and standards, various topologies and applications of network |
| 6. | Practical course on CS 241(Data Structures and Algorithms II) and CS 242 (Computer Networks I) | To understand the concept of Embedded systems. |
| | | To study the design flow and available tools for an Embedded system. |
| | | To understand the implementation of embedded system using firmware and hardware components. |
| | | To acquire programming skills for the development of Embedded system design. |
| | | To develop practical skills for designing embedded system Applications. |
| 7. | Computational Geometry | A student should be able to recall basic facts about mathematics and should be able to display knowledge of conventions such as notations, terminology and recognize basic geometrical figures and graphical displays, state important facts resulting from their studies. |
| | | A student should be made aware of history of mathematics and hence of its past, present and future role as part of our culture. |
| 8. | Operations Research | A student should get a relational understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning. |
| | | A student should get adequate exposure to global and local concerns that explore them many aspects of Mathematical Sciences. |
| 9. | Mathematics Practical: Python Programming Language-II | A student be able to apply their skills and knowledge, that is, translate information presented verbally into mathematical form, select and use appropriate mathematical formulae or techniques in order to process the information and draw the relevant conclusion. |
| | | A student should be made aware of history of mathematics and hence of its past, present and future role as part of our culture. |



AAER's

Asian College of Science and Commerce

Affiliated to SPPU and Approved by Govt of Maharashtra Accredited by NAAC with B+ Grade



Course Outcomes

The examination format consists of continuous assessment, which accounts for 30 marks for internal evaluation and 70 marks for external evaluation.

Class : T.Y.B.Sc(CS) (Semester-V)

| Sr.No. | Course Name | Course Outcomes |
|--------|--|--|
| 1. | Operating Systems – I | To understand the concept of operation system and its principle |
| | | To study the various functions and services provided by operating system |
| | | To understand the notion of process and threads |
| 2. | Computer Networks – II | To understand different protocols of application layer. |
| | | To understand concepts of multimedia. |
| | | Explore the different methods used for Network/INTERNET security |
| 3. | Web Technologies – I | To Design dynamic and interactive Web pages. |
| | | To Learn Core-PHP, Server Side Scripting Language |
| | | To Learn PHP-Database handling |
| 4. | Foundations of Data Science | Provide students with knowledge and skills for data-intensive problem solving and scientific discovery |
| | | Be prepared with a varied range of expertise in different aspects of data science such as data collection, visualization, processing and modeling of large data sets. |
| | | Acquire good understanding of both the theory and application of applied statistics and computer science based existing data science models to analyze huge data sets originating from diversified application areas |
| | | Be better trained professionals to cater the growing demand for data scientists in industry |
| 5. | Object Oriented Programming using Java - I | To learn Object Oriented Programming language |
| | | To study various java programming concept like Interface, File and Exception Handling etc. |
| | | To design User Interface using Swing and AWT |
| 6. | Python Programming | To introduce programming concepts using python |
| | | Student should be able to develop Programming logic using python |

| | | |
|-----|---|--|
| | | To develop basic concepts and terminology of python programming |
| | | To test and execute python programs |
| 7. | Theoretical Computer Science | To understand the Finite Automata, Pushdown Automata and Turing Machine. |
| | | To understand the Regular Language, Context Free Language, Context Sensitive Language and Unrestricted Language. |
| | | To understand the relation between Automaton and Language |
| 8. | Practical Course based on CS 355 | To design User Interface using Swing and AWT |
| 9. | Practical course based on CS 353 and CS 354 | To Design dynamic and interactive Web pages. |
| | | Provide students with knowledge and skills for data-intensive problem solving and scientific discovery |
| 10. | Practical course based on CS 351 | To understand the concept of operation system and its principle |
| 11. | Blockchain Technology | Understand what and why of blockchain technology. |
| | | Explore major components of blockchain. |
| | | Learn about Bitcoin, Cryptocurrency and Ethereum |
| | | To learn blockchain programming using Python, Flask Web Framework, and HTTP client Postman. |



AAER's

Asian College of Science and Commerce

Affiliated to SPPU and Approved by Govt of Maharashtra Accredited by NAAC with B+ Grade



Course Outcomes

The examination format consists of continuous assessment, which accounts for 30 marks for internal evaluation and 70 marks for external evaluation.

Class : T.Y.B.Sc(CS) (Semester-VI)

| | | |
|----|---|--|
| 1. | Practical course based on CS 361 | To understand the issue of Deadlocks in Process management. |
| | | To understand the concept of File system management & disk scheduling |
| 2. | Operating Systems – II | To understand the issue of Deadlocks in Process management. |
| | | To understand the concept of File system management & disk scheduling |
| | | To study the concept of distributed and mobile operating systems |
| 3. | Practical course based on CS 363 and CS 364 | To provide the knowledge of software testing techniques |
| | | Deploy the Data Analytics Lifecycle to address data analytics projects. |
| 4. | Web Technologies – II | To provide the knowledge of software testing techniques |
| | | To understand how testing methods can be used as an effective tools in quality assurance of software. |
| | | To provide skills to design test case plan for testing software. |
| | | To provide knowledge of latest testing methods |
| 5. | Data Analytics | Deploy the Data Analytics Lifecycle to address data analytics projects. |
| | | Develop in depth understanding of the key technologies in data analytics. |
| | | Apply appropriate analytic techniques and tools to analyze data, create models, and identify insights that can lead to actionable results. |
| 6. | Practical Course based on CS 365 | To learn database programming using Java |
| | | To study web development concept using Servlet and JSP |
| 7. | Object Oriented Programming using | To learn database programming using Java |
| | | To study web development concept using Servlet and JSP |
| | | To develop a game application using multithreading |

| | | |
|-----|------------------------|---|
| | Java - II | To learn socket programming concept |
| 8. | Compiler Construction | To understand design issues of a lexical analyzer and use of LEX tool. |
| | | To understand design issues of a parser and use of YACC tool. |
| | | To understand and design code generation and optimization techniques. |
| 9. | Software Testing Tools | To provide the knowledge of software testing methods and strategies. |
| | | To understand how testing methods can be used as an effective tool in quality assurance of software. |
| | | To provide skills to design test case plan for testing software. |
| | | To provide knowledge of latest testing tools |
| 10. | Software Testing | To provide the knowledge of software testing techniques |
| | | To understand how testing methods can be used as an effective tools in quality assurance of software. |
| | | To provide skills to design test case plan for testing software. |
| | | To provide knowledge of latest testing methods |