1. **Eligibility for Admission to the Course**
   Candidate for admission to the first year of the B.Sc. COMPUTER TECHNOLOGY degree course shall be required to have passed the higher secondary examination conducted by the Govt. of Tamil Nadu with any one of the following subjects: Mathematics / Computer Science / Statistics / Business Mathematics or other examinations accepted as equivalent there to by the Syndicate, subject to such other conditions as may be prescribed there for.

2. **Duration of the Course**
   The course shall extend over a period of three years comprising of six semesters with two semesters in one academic year. There shall not be less than 90 working days for each semester. Examination shall be conducted at the end of every semester for the respective subjects.

3. **Course of Study**
   The course of study for the B.Sc. COMPUTER TECHNOLOGY degree course shall consist of the following
   a) **Part - I**
      Tamil or any one of the following modern/classical languages i.e. Telugu, Kannada, Malayalam, Hindi, Sanskrit, French, German, Arabic & Urdu. It shall be offered for the first two semesters with one examination at the end of each semester.
   
   b) **Part – II : English**
      The subject shall be offered during the first two semesters with one examination at the end of each semester. During third semester the subject communication skills will be offered as one of the core subject.
   
   c) **Foundation Course**
      The Foundation course shall comprise of two stages as follows:
      Foundation Course A : General Awareness (I & II semesters)
      Foundation Course B : Environmental Studies (III & IV semesters)
      
      The syllabus and scheme of examination for the foundation course A, General awareness shall be apportioned as follows.
      From the printed material supplied by the University - 75%
      Current affairs & who is who? - 25%
      The current affairs cover current developments in all aspects of general knowledge which are not covered in the printed material on this subject issued by the University.
      The Foundation course B shall comprise of only one paper which shall have Environmental Studies.
   
   d) **Part – III**
      **Group A :** Core subject – As prescribed in the scheme of examination.
      Examination will be conducted in the core subjects at the end of every semester
Group B: allied subjects -2 subjects-4 papers  
Examination shall be conducted in the allied subjects at the end of first four semesters.

Group C: application oriented subjects: 2 subjects – 4 papers  
The application –oriented subjects shall be offered during the last two semesters of study viz., V and VI semesters. Examination shall be conducted in the subjects at the end of V & VI semesters.

Group D: field work/institutional training  
Every student shall be required to undergo field work/institutional training, related to the application-oriented subject for a period of not less than 2 weeks, conveniently arranged during the course of 3rd year. The principal of the college and the head of the department shall issue a certificate to the effect that the student had satisfactorily undergone the field work/institutional training for the prescribed period.

Diploma Programme:  
All the UG programmes shall offer compulsory diploma subjects and it shall be offered in four papers spread over each paper at the end of III, IV, V, & VI semesters.

e) Co-Curricular activities: NSS/NCC/Physical education  
Every student shall participate compulsorily for period of not less than two years (4 semesters) in any one of the above programmes.

The above activities shall be conducted outside the regular working hours of the college. The principal shall furnish a certificate regarding the student’s performance in the respective field and shall grade the student in the five point scale as follows

A-Exemplary  
B-very good  
C-good  
D-fair  
E-Satisfactory  
This grading shall be incorporated in the mark sheet to be issued at the end of the appropriate semester (4th or 5th or 6th semester).

(Handicapped students who are unable to participate in any of the above activities shall be required to take a test in the theoretical aspects of any one of the above 3 field and be graded and certified accordingly).

4. Requirement to appear for the examinations  
a) a candidate will be permitted to appear for the university examinations for any semester if
   i) He/she secures not less than 75% of attendance in the number of working days during the semester.
   ii) He/she earns a progress certificate from the head of the institution, of having satisfactorily completed the course of study prescribed in the subjects as required by these regulations, and
   iii) His/her conduct has been satisfactory.

   Provided that it shall be open to the syndicate, or any authority delegated with such powers by the syndicate, to grant exemption to a candidate who has failed to earn 75% of the attendance prescribed, for valid reasons, subject to usual conditions.

b) A candidate who has secured less than 65% but 55% and above attendance in any semester has to compensate the shortage in attendance in the subsequent semester besides, earning the required percentage of attendance in that semester and appear for both semester papers together at the end of the latter semester.
c) A candidate who has secured less than 55% of attendance in any semester will not be permitted to appear for the regular examinations and to continue the study in the subsequent semester. He/she has to rejoin the semester in which the attendance is less than 55%

d) A candidate who has secured less than 65% of attendance in the final semester has to compensate his/her attendance shortage in a manner as decided by the concerned head of the department after rejoining the same course.

5. **Restrictions to appear for the examinations**
   
a) Any candidate having arrear paper(s) shall have the option to appear in any arrear paper along with the regular semester papers.

b) “Candidates who fail in any of the papers in Part I, II & III of UG degree examinations shall complete the paper concerned within 5 years form the date of admission to the said course, and should they fail to do so, they shall take the examination in the texts/ revised syllabus prescribed for the immediate next batch of candidates. If there is no change in the texts/syllabus they shall appear for the examination in that paper with the syllabus in vogue until there is a change in the texts or syllabus. In the event of removal of that paper consequent to change of regulation and / or curriculum after 5 year period, the candidates shall have to take up an equivalent paper in the revised syllabus as suggested by the chairman and fulfill the requirements as per regulation/curriculum for the award of the degree.

6. **Medium of Instruction and examinations**
   
The medium of instruction and examinations for the papers of Part I and II shall be the language concerned. For part III subjects other than modern languages, the medium of instruction shall be either Tamil or English and the medium of examinations is in English/Tamil irrespective of the medium of instructions. For modern languages, the medium of instruction and examination will be in the languages concerned.

7. **Submission of Record Note Books for practical examinations**
   
Candidates appearing for practical examinations should submit bonafide Record Note Books prescribed for practical examinations, otherwise the candidates will not be permitted to appear for the practical examinations. However, in genuine cases where the students, who could not submit the record note books, they may be permitted to appear for the practical examinations, provided the concerned Head of the department from the institution of the candidate certified that the candidate has performed the experiments prescribed for the course. For such candidates who do not submit Record Books, zero (0) marks will be awarded for record note books.

8. **Passing Minimum**
   
a) A candidate who secures not less than 40% of the total marks in any subject including the Diploma and Foundation courses (theory or Practical ) in the University examination shall be declared to have passed the examination in the subject (theory or Practical ).

b) A candidate who passes the examination in all the subjects of Part I, II and III (including the Diploma and Foundation courses) shall be declared to have passed, the whole examination.

9. **Improvement of Marks in the subjects already passed**
   
Candidates desirous of improving the marks awarded in a passed subject in their first attempt shall reappear once within a period of subsequent two semesters. The improved marks shall be considered for classification but not for ranking. When there is no improvement, there shall not be any change in the original marks already awarded.

10. **Classification of Successful candidates**
    
a) A candidate who passes all the Part III examinations in the First attempt within a period of three years securing 75% and above in the aggregate of Part III marks shall be declared to have passed B.A/ B.Sc./B.Com./B.B.M. degree examination in **First Class with Distinctions**

b) (i) A candidate who passes all the examinations in Part I or Part II or Part III or Diploma securing not less than 60 per cent of total marks for concerned part shall be declared to have passed that part in **First Class**
(ii) A candidate who passed all the examinations in Part I or Part II or Part III or Diploma securing not less than 50 per cent but below 60 per cent of total marks for concerned part shall be declared to have passed that part in **Second Class**

(iii) All other successful candidates shall be declared to have passed the Part I or Part II or Part III or Diploma examination in **Third Class**

11. **Conferment of the Degree**

No candidate shall be eligible for conferment of the Degree unless he/she,

i. has undergone the prescribed course of study for a period of not less than six semesters in an institution approved by/affiliated to the University or has been exempted from in the manner prescribed and has passed the examinations as have been prescribed therefor.

ii. Has satisfactory participates in either NSS or NCC or Physical Education as evidenced by a certificate issued by the Principal of the institution.

iii. Has successfully completed the prescribed Field Work/ Institutional Training as evidenced by certificate issued by the Principal of the College.

12. **Ranking**

A candidate who qualifies for the UG degree course passing all the examinations in the first attempt, within the minimum period prescribed for the course of study from the date of admission to the course and secures I or II class shall be eligible for ranking and such ranking will be confined to 10% of the total number of candidates qualified in that particular branch of study, subject to a maximum of 10 ranks.

The improved marks will not be taken into consideration for ranking.

13. **Additional Degree**

Any candidate who wishes to obtain an additional UG degree not involving any practical shall be permitted to do so and such candidate shall join a college in the III year of the course and he/she will be permitted to appear for par III alone by granting exemption form appearing Part I, Part II and common allied subjects (if any), already passed by the candidate. And a candidate desirous to obtain an additional UG degree involving practical shall be permitted to do so and such candidate shall join a college in the II year of the course and he/she be permitted to appear for Part III alone by granting exemption form appearing for Part I, Part II and the common allied subjects. If any, already passed. Such candidates should obtain exemption from the university by paying a fee of Rs.500/-. 

14. **Evening College**

The above regulations shall be applicable for candidates undergoing the respective courses in Evening Colleges also.

15. **Syllabus**

The syllabus for various subjects shall be clearly demarcated into five viable units in each paper/subject.

16. **Revision of Regulations and Curriculum**

The above Regulation and Scheme of Examinations will be in vogue without any change for a minimum period of three years from the date of approval of the Regulations. The University may revise/amend/change the Regulations and Scheme of Examinations, if found necessary.

17. **Transitory Provision**

Candidates who have undergone the Course of Study prior to the Academic Year 2007-2008 will be permitted to take the Examinations under those Regulations for a period of four years i.e. up to and inclusive of the Examination of April 2012 thereafter they will be permitted to take the Examination only under the Regulations in force at that time.
# B.Sc.(COMPUTER TECHNOLOGY) with COMPULSORY DIPLOMA IN COMPUTER NETWORKING

## SCHEME OF EXAMINATION FROM THE ACADEMIC YEAR 2007-08

<table>
<thead>
<tr>
<th>SUBJECTS</th>
<th>Hrs/Wk</th>
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<td>3. Core 1: DATA STRUCTURES AND C PROGRAMMING</td>
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<td>4. Core 2: COMPUTER ORGANIZATION AND ARCHITECTURE</td>
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<td>6. Allied 1: MATHEMATICAL STRUCTURES FOR COMPUTER SCIENCE</td>
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<tr>
<td>7. Foundation Course-A (General Awareness)</td>
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<td><strong>SEMESTER II</strong></td>
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<td><strong>SEMESTER III</strong></td>
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<td>1. Core 4: COMMUNICATION SKILLS</td>
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<td>2. Core 5: RDBMS AND ORACLE</td>
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<td>3. Core 6: VISUAL PROGRAMMING (Visual Basic)</td>
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<td>5. Allied 3: MICROPROCESSORS AND ALP</td>
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### SEMESTER IV

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<td>COMPUTER INSTALLATION AND SERVICING</td>
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### SEMESTER V

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<td>Core 11</td>
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<td>AOS 1</td>
<td>GRAPHICS AND MULTIMEDIA</td>
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### SEMESTER VI

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<td>AOS 2</td>
<td>ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS</td>
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<tr>
<td>Diploma Course</td>
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Course | B.Sc.(COMPUTER TECHNOLOGY) (Regular)
---|---
Effective from | 2007-2008 and Onwards
Semester | I
Subject | CORE 1 : DATA STRUCTURES AND C PROGRAMMING

Subject Description:
This subject deals with the methods of data structures using C programming language.

Goal:
To learn about C programming language using data structural concepts.

Objective:
On successful completion of this subject the students should have:
- Writing programming ability on data structures dealing with Stacks, Queues, List, Searching and Sorting algorithms etc.,

UNIT – I:
- Operators and Expressions – Formatted and Unformatted I/O functions – Decision statements – Loop control statements.

UNIT – II:
Arrays – String and its standard functions.
Pointers – Functions – Preprocessor directives: #define, #include, ifndef, Predefined macros.

UNIT – III:
Structure and Union: Features of structure, Declaration and initialization of structure, Structure within structure, Array of structure, Pointer to structure, Bit fields, Enumerated data types, Union.
Files: Streams and file types, Steps for file operation, File I/O, Structures read and write, other file functions, Command line arguments, I/O redirection.

UNIT – IV:
Single linked list, Linked list with and without header, Insertion, Deletion, Double linked list – Queues: Various positions of queue, Representation

UNIT V:
Searching and Sorting – Searching: Linear, Binary.
Sorting – Insertion, Selection, Bubble, Quick, Tree, Heap.

TEXT BOOK:

REFERENCE BOOK:
Course | B.Sc.(COMPUTER TECHNOLOGY) (Regular)
---|---
Effective from | 2007-2008 and Onwards
Semester | I
Subject | CORE 2 : COMPUTER ORGANISATION AND ARCHITECTURE

Subject Description:
This subject deals with fundamentals of digital computers, Microprocessors and system architecture.

Goal:
To learn about computer fundamentals and its organization.

Objective:
On successful completion of this subject the students should have:
- Knowledge on digital circuits
- Interfacing of various components

Unit I
Number System and Binary Codes: Decimal, Binary, Octal, Hexadecimal – Binary addition, Multiplication, Division – Floating point representation, Complements, BCD, Excess3, Gray Code.


Unit II

Unit III
CENTRAL PROCESSING UNIT: General register organization – control word – examples of Micro operations – Stack organization – Instruction formats – Addressing modes – Data transfer and manipulation control.

Unit IV

Unit V

Text Books:

Reference Books:
ISRD group - TATA McGRAW-HILL
1. Write a C program to create two array list of integers. Sort and store the elements of both of them in the third list.

2. Write a C program to experiment the operation of STACK using array implementation.

3. Write a C program to create menu drive program to implement QUEUE to perform the following:
   I. Insertion
   II. Deletion
   III. Modification
   IV. Listing of elements using pointers

4. Write a C program to create LINKED LIST representation of employee records and do the following operations using pointers:
   I. To add a new record
   II. To delete an existing record
   III. To print the information about an employee
   IV. To find the number of employees in the structure

5. Write a C program to count the total nodes of the linked list.

6. Write a C program to insert an element at the end of the linked list.

7. Write a C program to insert an element at the beginning of the Double linked list.

8. Write a C program to display the hash. table, which is to be prepared by using the Mid-square method.

9. Write a C program to demonstrate Binary search.

10. Write a C program to insert nodes into a Binary tree and to transverse in pre-order.

11. Write a C program to arrange a set of numbers in ascending order using QUICK-SORT.

12. Write a C program to arrange a set of numbers in descending order using EXCHANGE-SORT.
Course | B.Sc.(COMPUTER TECHNOLOGY) (Regular)  
---|---
Effective from | 2007-2008 and Onwards  
Semester | I  
Subject | Allied 1: MATHEMATICAL STRUCTURES FOR COMPUTER SCIENCE  

**Subject Description:**
This subject deals with mathematical concepts like Matrices, Numerical analysis and Statistical methods for computer science and applications.

**Goal:**
To learn about the mathematical structures for computer based applications.

**Objective:**
On successful completion of this subject the students should have:
- Understanding the concepts of mathematics
- Learning applications of statistical and numerical methods for Computer Science.

**Unit I**

**Unit II**

**Unit III**

**Unit IV**
Measures of central tendency – Mean Media and Mode – Relationship among mean media and mode. Measures of dispersion – Range, quartile deviation, mean deviation and Standard deviation

**Unit V**

**Text Book:**
1. Engineering Mathematics Volume II – Dr M.K. Venkataraman - NPC (Unit I)
3. Business Statistics - S.P. Gupta & M.P. Gupta Sultan Chand and Sons (Unit IV & V)

**Reference Book:**
2. Fundamental of Mathematical statistics S C Gupta, V. K. Kapoor Sultan Chand and Sons
Course | B.Sc.(COMPUTER TECHNOLOGY) (Regular)  
---|---
Effective from | 2007-2008 and Onwards  
Semester | II  
Subject | CORE 3 : OBJECT ORIENTED PROGRAMMING WITH C++

**Subject Description:**
This subject deals with Object–oriented programming concepts using C++.

**Goal:**
To learn about on Object–oriented Programming concept.

**Objective:**
On successful completion of this subject the students should have:
- Writing programming ability on OPPS concepts like Encapsulation, Abstraction, Inheritance, Polymorphism and Exception handling etc.,

**UNIT-I**
Introduction to C++ - key concepts of Object-Oriented Programming –Advantages – Object Oriented Languages – I/O in C++ - C++ Declarations. Control Structures : - Decision Making and Statements : If .. else ,jump, goto, break, continue, Switch case statements - Loops in C++ : For,While, Do - Functions in C++ - Inline functions – Function Overloading.

**UNIT-II**
Classes and Objects: Declaring Objects – Defining Member Functions – Static Member variables and functions – array of objects –friend functions – Overloading member functions – Bit fields and classes – Constructor and destructor with static members.

**UNIT-III**

**UNIT-IV**
Pointers: Declaration – Pointer to Class , Object – this pointer – Pointers to derived classes and Base classes – Arrays – Characteristics – array of classes – Memory models – new and delete operators – dynamic object – Binding , Polymorphism and Virtual Functions.

**UNIT-V**

**TEXT BOOKS:**

**REFERENCE BOOKS:**
1. Create a class to implement the data structure STACK. Write a constructor to initialize the TOP of the stack to 0. Write a member function POP() to delete an element. Check for overflow and underflow conditions.

2. Create a class ARITH which consists of a FLOAT and an integer Variable. Write member functions ADD(), SUB(), MUL(), DIV(), MOD() to perform addition, multiplication, division and modulus Respectively. Write member functions to get and display values.

3. Create a class MAT has a 2-d matrix and R&C represents the rows and columns of the matrix. Overload the operators +, -, *, / to add subtract and multiply two matrices. Write member functions to get and display MAT object values.

4. Create a class STRING. Write member function to initialize, get and display strings. Overload the operator + to concatenate two strings, == to compare two strings and a member function to find the length of the string.

5. Create a class which consists of EMPLOYEE detail like eno, ename, dept, basic-salary, and grade. Write member functions to get and display them. Derive a class PAY from the above class and write a member function to calculate da, hra, pf depending on the grade and Display the Payslip in a neat format using console I/O.

6. Create a class SHAPE which consist of two VIRTUAL FUNCTIONS Cal_Area() and Cal_PERI to calculate AREA and PERIMETER of various figures. Derive three classes SQUARE, RECTANGLE and TRIANGLE from the class SHAPE and calculate AREA and PERIMETER of each class separately and Display the result.

7. Create two classes which consists of two private variables, one float And one integer variables in each class. Write member functions to get and display them. Write FRIEND function common to arguments And the integer and float values of both the objects separately and Display the result.

8. Write a user defined function USERFUN( ) which has the formatting commands like setw( ), showpoint, showpos, precision( ). Write a program which prints an multiplication table and uses USERFUN( ) for formatting.

9. Write a program to perform Insertion, Deletion and Updation using files.

10. Write a program which takes a file as argument and copies in to another file with line numbers using Command Line Arguments.
Course | B.Sc.(COMPUTER TECHNOLOGY) (Regular)
---|---
Effective from | 2007-2008 and Onwards
Semester | II
Subject | Allied 2: COMPUTER ORIENTED NUMERICAL METHODS AND STATISTICS

**Subject Description:** This subject deals with various numerical methods and statistical applications for computer science.

**Goal:** To learn about the computer based numerical and statistical methods.

**Objective:** On successful completion of this subject the students should have:
- Understanding various concepts of numerical analysis.
- Learning various applications statistical methods for Computer Science.


**UNIT-II:** Numerical Differentiation – Newton’s Forward Difference formula - Newton’s backward difference formula – numerical Integration – Trapezoidal rule - Simpson’s One-third rule – Simpson’s three-eighths rule.


**UNIT-IV:** Measures of central tendency – Mean, Median and mode – Relation between mean, median and mode. Dispersion – Range – Mean deviation & standard deviation.

**UNIT-V:** Correlation – Karl Pearson’s Coefficient of Correlation – Rank correlation regression – Regression Equations- Difference between correlation & Regression

**TEXT BOOKS:**

**REFERENCE BOOKS:**
1. **COMPUTER ORIENTED NUMERICAL METHODS** – V. Rajaraman, PHI Pub.
Course | B.Sc.(COMPUTER TECHNOLOGY) (Regular)  
---|---
Effective from | 2007-2008 and Onwards  
Semester | III  
Subject | CORE 5 : RDBMS AND ORACLE


**UNIT-III: Working with Table: Data Management and Retrieval:** DML – adding a new Row/Record – Customized Prompts – Updating and Deleting an Existing Rows/Records – retrieving Data from Table – Arithmetic Operations – restricting Data with WHERE clause – Sorting – Revisiting Substitution Variables – DEFINE command – CASE structure. **Functions and Grouping:** Built-in functions –Grouping Data. **Multiple Tables: Joins and Set operations:** Join – Set operations.


**TEXTBOOKS:**
- DATABASE SYSTEMS USING ORACLE – Nilesh Shah, 2nd edition, PHI.  
  (UNIT-I: Chapters 1 & 2  UNIT-II: Chapters 3 & 4  UNIT III: Chapters 5 & 6  UNIT-IV: Chapters 10 & 11  UNIT-V: Chapters 12, 13 & 14)

**REFERENCE BOOKS:**
1. DATABASE MANAGEMNET SYSTEMS – Arun Majumdar, Pritimoy Bhattacharya, 2007, TMH.
2. DATABASE MANAGEMETN SYSTEMS – Gerald V. Post, 3rd edition, TMH.
Subject Description: This Subject deals with the Visual Programming.

Goal: To learn about Visual Programming.

Objective: On Successful Completion of this subject the students should have:
- Writing Programming ability on Visual Basic.

UNIT I:

UNIT II:

UNIT III:

UNIT IV:

UNIT V:
Clip Board, DDE, OLE, Data Control – Programming with Data Control – Monitoring Changes to the Databases – SQL – Basics Database Objects.

Course: B.Sc.(COMPUTER TECHNOLOGY) (Regular)
Effective from: 2007-2008 and Onwards
Semester: III
Subject: CORE LAB 3: VISUAL PROGRAMMING LAB – VB WITH MS ACCESS

1. Develop a VB Project to Check User Name & Password Given by User.
2. Develop a VB Project to Add & Remove Items From ListBox.
3. Develop a VB Project to Copy all Items in a ListBox to ComboBox.
4. Develop a VB Project to Enter and Display Student Information.
5. Develop a VB Project to Scroll Text from Left to Right Using Timer.
6. Develop a VB Project to Mini Calculator Functions.
7. Develop a VB Project to Documents typing using MDI Form.

Use Employee Information For the Following Projects.

8. Develop a VB Project to Search a Record in MS-ACCESS database using data control.
9. Develop a VB Project to Delete a Record from MS-ACCESS database using data control.
10. Develop a VB Project to Perform following Operations in MS-ACCESS database using DAO.
11. Develop a VB Project to Insert a Record in MS-ACCESS database using ADO.
12. Develop a VB Project to Modify a record in MS-ACCESS database using ADO.
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<td>ALLIED 3 : MICROPROCESSORS AND ALP</td>
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**UNIT I**


Intel 8086 - Pin Description of Intel 8086 - Operating modes of 8086 - Register organization of 8086 - BIU and EU - Interrupts - 8086 based computer system - Addressing Modes of 8086.

**UNIT II**

8086 Instruction Set - Instruction Groups - Addressing Mode Byte - Segment Register Selection - Segment Override - 8086 Instructions.

Assembly Language Programs for 8086: Largest Number, Smallest Number in a Data Array - Numbers in Ascending and Descending order - Block Move or Relocation - Block Move using REP instruction - Sum of a series - Multibyte Addition.

**UNIT III**


**UNIT IV**

Input devices - Output devices - Memory and VO addressing - 8086 Addressing and Address Decoding - Programmable VO Ports - DMA Data Transfer.

Other Microprocessors - PowerPC Microprocessors - Pentium Microprocessors - Pentium PRO microprocessor - Alpha Microprocessor - Cyrix Microprocessor - MIPS Microprocessor - AMD Microprocessor.

**UNIT V**

MOTOROLA 68000, MOTOROLA 68020, MOTOROLA 68030, MOTOROLA 68040

Interfacing of AID Converter and Applications: Introduction - Interfacing of ADC 0808 or ADC 0809 to Intel 8086 - Bipolar to Unipolar Converter - Sample and Hold Circuit, LF 398 - Microprocessor based Measurement and Control of Physical Quantities.

**TEXT BOOK**

UNIT- I


UNIT- II

Analog and digital transmission methods: Introduction - Analog signal, Analog transmission - Digital signal, Digital transmission - Digital signal , Analog transmission - Baud rate and bits per second - Analog signal, Digital (Storage and) transmission - Nyquist Theorem.

Modes of data transmission and Multiplexing: Introduction – Parallel and Serial communication - Asynchronous, Synchronous and Isochronous communication - Simplex, Half-duplex and Full-duplex communication – Multiplexing - Types of Multiplexing - FDM versus TDM.


UNIT- III


UNIT- IV


UNIT- V


Text book:

Course | B.Sc.(COMPUTER TECHNOLOGY) (Regular)
--- | ---
Effective from | 2007-2008 and Onwards
Semester | IV
Subject | CORE 7: JAVA PROGRAMMING

**Subject Description:**
This Subject deals with the JAVA Programming.

**Goal:**
To learn about Java.

**Objective:**
On Successful Completion of this subject the students should have:
- Writing Programming ability on Java like Encapsulation, Data Abstraction, Inheritance, Polymorphism and Exception handling, Applet etc.

**UNIT I:**

**UNIT II:**

**UNIT III:**

**UNIT IV:**

**UNIT V:**

**TEXT BOOK:**
E. BALAGURUSAMY – “Programming With JAVA a Primer”, 3rd Edition TMH.
Course | B.Sc.(COMPUTER TECHNOLOGY) (Regular)
--- | ---
Effective from | 2007-2008 and Onwards
Semester | IV
Subject | CORE 8: CLIENT / SERVER COMPUTING

Subject Description:
This Subject deals with the C/S Computing

Goal:
To learn about C/S Computing

Objective:
On Successful Completion of this subject the students should have:
- C/S Applications , GUI ETC.,

UNIT I:

UNIT II:

UNIT III:

UNIT IV:

UNIT V:

TEXT BOOK:
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<td>Subject</td>
<td><strong>CORE LAB 4: PROGRAMMING LAB - JAVA</strong></td>
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</table>

1. Create an Employee Package to Maintain the Information about the Employee. Use Constructors to Initialize the Employee Number and Use Overloading Method to set the Basic Pay of the Employee. By Using this Package Create a Java Program.

2. Program to Implement Polymorphism, Inheritance and Inner Classes.

3. Java Program to Handle Different Mouse Events.


5. Java Program to Maintain the Student Information

6. Animate Images at Different Intervals by using Multithreading Concepts.

7. Program to send a text message to another System and receive the text message from the System.

8. Java Program by using JDBC Concepts to Access a Database.

9. Java Program to Implement RMI.

10. Java Program by using to implement the Tree Viewer.

11. Java Bean Program to view an Image.
UNIT – I

PC SYSTEM
Personal Computer System - Functional Blocks - System Unit - Display Unit - Keyboard.

INSIDE PC
Motherboard - BIOS - CMOS-RAM - Motherboard types – Processors – Chipsets – USB.

ON-BOARD MEMORY
PC’s Memory Organization - Memory packaging - I/O Ports - USB Port.

UNIT – II

Floppy Disk Drive and Controller - Hard Disk Drive and Controller, MMX – Multimedia Extensions.

UNIT – III
Input Devices - Monitors and Display Adapters.

UNIT – IV

Output Devices
DOT Matrix Printer - Printer Controller - Laser Printer - Inkjet Printer.

COMPUTER INSTALLATION
Power supply - PC Installation.

UNIT – V

Trouble shooting and servicing
POST, Trouble shooting the mother board - Trouble shooting the Keyboard - Trouble shooting the disk devices - Trouble shooting the printer.

MAINTENANCE
Diagnostic Software’s - Data Security.

COMPUTERS AND COMMUNICATION
Networking – Modem - Internet.

TEXT BOOK:
1. Write a program to Detect Errors using Vertical Redundancy Check (VRC).

2. Write a program to Detect Errors using Longitudinal Redundancy Check (LRC).

3. Write a program to Detect Errors using Cyclic Redundancy Check (CRC).

4. Write a Socket program to implement Asynchronous Communication.

5. Write a Socket program to implement Isochronous Communication.

6. Write a program to implement Stop & Wait Protocol.

7. Write a program to implement Sliding Window Protocol.

8. Write a program to implement the Shortest Path Routing using Dijkstra algorithm.

9. Write a Socket Program to Perform file transfer from Server to the Client.

10. Write a Program to implement Remote Procedure call under Client / Server Environment
Unit I


Unit II

Mobile Computing through Telephony – Evolution of telephony – Multiple access procedures – Mobile computing through telephone – Developing an IVR application – Voice XML – Telephony applications programming interface (TAPI)


Unit III


Short Message Services (SMS) – Mobile computing over SMS – Short Message Services (SMS) – Value added services through SMS – Accessing SMS bearer.

Unit IV


Unit V


Text Book:

Subject Description:
This Subject deals with the Operating System.

Goal:
To learn about Operating System

Objective:
On Successful Completion of this subject the students should have:
- OS Concepts, Process, Files, Deadlock etc.,

UNIT I:
History of Operating System - Operating system concepts – Process – Files - System calls The Shell

UNIT II:
Introduction to Process-Implementation of Process-Process States- Inter Process Communication-
Race Condition - Critical Region - Mutual Exclusion - Sleep & Wakeup - Process Scheduling - Shortest
job First-Two Level Scheduling

UNIT III:
Files – Structures – Type – Operations - Shared Files - Disk Space Management - The Security
- Deadlock Detection & Avoidance - Deadlock Prevention

UNIT IV:
Memory Management: Swapping - Virtual Memory - Memory Management without Swapping –
Segmentation - Using MS DOS - MS DOS shell – MS DOS File System.

UNIT V:
UNIX: UNIX Goals- Interface to Unix-Process in Unix- UNIX files system- Memory Management
System Calls in UNIX.

TEXT BOOK:
Andrew S. Tanenbaum - “Modern Operating System” - Eastern Economy Edition – PHI

REFERENCE BOOK:
2. Milan Milenkovic-“Operating System” 2nd edition TMH.
Course | B.Sc.(COMPUTER TECHNOLOGY) (Regular)  
---|---
Effective from | 2007-2008 and Onwards  
Semester | V  
Subject | CORE 11: SOFTWARE ENGINEERING

**Subject Description:**
This Subject deals with the Software Engineering

**Goal:**
To learn about Software Engineering

**Objective:**
On Successful Completion of this subject the students should have:

**UNIT I:**

**UNIT II:**

**UNIT III:**

**UNIT IV:**

**UNIT V:**

**TEXT BOOK:**
### Course Details

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<td>Subject</td>
<td>AOS 1: GRAPHICS AND MULTIMEDIA</td>
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(GRAPHICS – UNITS I & II)


**UNIT-II: 2D Geometric Transformations:** Basic Transformations – Matrix Representations – Composite Transformations – Other Transformations. **2D Viewing:** The Viewing Pipeline – Viewing Co-ordinate Reference Frame – Window-to-Viewport Co-ordinate Transformation - 2D Viewing Functions – Clipping Operations.

(MULTIMEDIA – UNITS III, IV & V)


### TEXTBOOKS:

1. **COMPUTER GRAPHICS** – Donald Hearn, M.Pauline Baker, 2nd edition, PHI.
   (UNIT-I: 3.1-3.6,4.1-4.5 & UNIT-II: 5.1-5.4,6.1-6.5)

2. **PRINCIPLES OF MULTIMEDIA** – Ranjan Parekh, 2007, TMH.

### REFERENCE BOOKS:

1. **COMPUTER GRAPHICS** – Amarendra N Sinha, Arun D Udai, TMH.
2. **MULTIMEDIA: Making it Work** – Tay Vaughan, 7th edition, TMH.
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<td>CORE LAB 5: MULTIMEDIA LAB</td>
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Using suitable Multimedia software/tool (Flash/Photoshop/Macromedia) do the following:

1. Create a Sun Flower.
2. Create Water Drops.
3. Animate Plane Flying in the Clouds.
5. Create Mouse.
6. Create See thru text.
7. Create Military Clothe.
8. Create Stone Texture.
9. Create Rollover Buttons.
12. Convert Black and White to Color Photo.
13. Create Ice Text.
15. Create Fog Effects.
UNIT I


UNIT II


UNIT III


UNIT IV


UNIT V

Electronic Mail Policy: Electronic Mail – What are the E-mail threats that organization’s face - Why do you need an E-mail Policy - How do you create an E-mail Policy - Publishing the E-mail Policy - University E-mail Policy.


Text Books:

UNIT – I:

**Introduction:** CAD/ CAM Defined – The Product Cycle and CAD/CAM – Automation and CAD/CAM – Organization.


UNIT – II:


**Conventional Numerical Control:** Introduction – Basic Components of an NC System – The NC Procedure – NC Coordinate System – NC Motion Control Systems – Applications of Numerical Control – Economics of Numerical Control.

UNIT – III:


**Robot Applications:** General Considerations in Robot Applications – Material Transfer – Machine Loading - Welding - Spray Coating - Processing Operations - Assembly - Inspection.

UNIT – IV:


UNIT – V:

**Production Planning and Control:**
Introduction – Traditional Production Planning and Control – Problems with Traditional Production Planning and Control – Computer-Integrated Production Management System – Cost Planning and Control.


**Text Books:**

### Course

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<td>Subject</td>
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### Unit I


### Unit II


### Unit III

**ASP Objects:** global.asa file – The Application Object – The Session Object – Using Application and Session Objects.

### Unit IV


### Unit V


### Text Books:

Subject Description:
This Subject deals with the Data Mining

Goal:
To learn about Data Mining

Objective:
On Successful Completion of this subject the students should have:
- Matrices, Decision tree, Neural Network, Algorithms etc.,

UNIT I:
Basic Data Mining Tasks – Data Mining Versus Knowledge Discovery in Data Bases – Data Mining Issues – Data Mining Matrices – Social Implications of Data Mining – Data Mining from Data Base Perspective.

UNIT II:

UNIT III:

UNIT IV:

UNIT V:

TEXT BOOK:

REFERENCE BOOK:
Jiawei Han & Micheline Kamber – “Data Mining Concepts & Techniques” 2001 Academic Press.
Subject: AOS 2: ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS

Subject Description:
This Subject deals with the Artificial Intelligence

Goal:
To learn about AI

Objective:
On Successful Completion of this subject the students should have:
- Heuristic, Hill Climbing, Planning, Expert System etc.,

UNIT I:

UNIT II:

UNIT III:

UNIT IV:

UNIT V:

TEXT BOOK:
1. Design a personal web page using HTML.
2. Design a data entry form in HTML.
3. Write a Program in ASP to get data using a form, validate the data and returns the same data for correction if any using the same form.
4. Write a program in ASP to display the Session properties.
5. Write a program in ASP that makes use of Ad Rotator component.
6. Write a program in ASP that makes use of Browser Capabilities component.
7. Write a program in ASP that makes use of Content Rotator component.
8. Write a program in ASP that makes use of page counter component.
9. Write a program in ASP to get the data of students using forms and stores them in database.
10. Write a program in ASP to perform record navigation using a form.
1. Write a program to encrypt the data using the encryption methods:

   (i) Substitution Ciphers
   (ii) Transposition Ciphers

2. Write a program to implement DES algorithm.

3. Write a program to implement the Public Key Cryptography using Diffie-Hellman Algorithm.

4. Write a program to implement the Public Key Cryptography using RSA algorithm.

5. Write a program to secure the Database using User Authentication Security.