முன் - I, கலை
15LAU101: விளையாட்டு இயற்கை

பகுதி 1

பகுதி - I: விளையாட்டு இயற்கை

துறைமுறை: மாணவர் பாட்டுப்பாடு - பாட்டுப்பாடு அடைந்தம்.

கலைக் கல்லூரி - கல்வியை வழங்கும்

முகலம்: பாட்டுப்பாடு பாட்டுக் கல்வி - அடையும் கல்வியை வழங்கும்

சார்ந்தம்: கலவாரா பாலாமுத்தரா - கல்வியை வழங்கும்

அடையும்: கலந்து கொடுக்கும் பாடலும் குறிப்பிட்டு

பாட்டுக்கும்: கலுவா கொடுக்கும் - பாட்டுடைய விளையாட்டுகளா

அடையும்: அடையும் பாடல் - பாடல்

கலை: கலவாரா பாலாமுத்தரா - கல்லூரிக்கு வழங்கும்

பகுதி - II: விளையாட்டு இயற்கை

1. விளையாட்டு - விளையாட்டு இயற்கையை வழங்கும் 20

2. பாடல்களுக்கு மேல் - விளையாட்டு இயற்கையை வழங்கும் பாடல்கள்

3. விளையாட்டு - விளையாட்டு இயற்கையை வழங்கும்

பகுதி - III: கல்லூரிக்கும்

1. கல்லூரிக்கும் - கலந்து கொடுக்கும்

2. கலந்து குறிப்பிட்டு - கலந்து கொடுக்கும்

3. பாடல்களுக்கு மேல் - பாடல்களுக்கு மேல்

பகுதி - IV: குறிப்பிட்டு

1. பாடலுள்ள கல்லூரி - குறிப்பிட்டு

2. பாடலுள்ள கல்லூரி - குறிப்பிட்டு

3. கல்வியை வழங்கும் - குறிப்பிட்டு

4. முக்குழந்து - முக்குழந்து

5. கலைக் கல்லூரி - கலைக் கல்லூரி

பகுதி - V: விளையாட்டு இயற்கை

1. விளையாட்டு இயற்கைகள் வழங்கும் பாடல் வழங்கும்

2. பாடலுள்ள பாடல் வழங்கும்

பாடல்களுக்கு மேல் - பாடல் வழங்கும். குறிப்பிட்டு வழங்கும் கூடிய விளையாட்டு.

Part I TAMIL 2015, Karpagam University, Coimbatore - 21.
Objectives

- To enable the learners to acquire English language skills at a faster pace.
- To train the learners to reflect on the literary works and communicate flexibly.

UNIT I:

**Prose:** Google Guys (Extract) – Richard L Brandt
**Poetry:** The Blind Pedlar – Osbert Sitwell
**Short Story:** A Garden So Rich – Christie Craig
**Vocabulary:** Prefixes, Antonyms, Sentence Completion
**Grammar:** Articles, Adverbs, Pronouns
**Composition:** Proverb Expansion

UNIT II:

**Prose:** Happiness 101 – Geeta Padmanabhan
**Poetry:** An Old Woman – Arun Kolatkar
**Vocabulary:** Suffixes, Analogies
**Grammar:** Nouns, Adjectives
**Composition:** Dialogue Writing

UNIT III:

**Prose:** Structured Procrastination – John Perry
**Short Story:** The Umbrella Man – Roald Dahl
**One-Act Play:** The Boy Who Stopped Smiling – Ramu Ramanathan
**Vocabulary:** Synonyms, Euphemisms, Word Definitions
**Grammar:** Verbs, Conjunctions and Interjection, Indirect/Reported Speech

UNIT IV:

**Poetry:** No Sentence – Anjum Hassan
**One-Act Play:** While the Auto Waits - O’ Henry
**Vocabulary:** Words Often Confused, Anagrams
**Grammar:** Prepositions, Voice- Active and Passive
**Composition:** Letter Writing- Informal

UNIT V:

**Short Story:** The Bird – Amar Jalil
**One-Act Play:** The Cellphone Epidemic – Claudia I. Haas
**Vocabulary:** Portmanteau Words, One Word Substitute
**Grammar:** Questions, Pronunciation
**Composition:** Letter Writing- Formal

Text Book

Reference
Scope
C is a general-purpose programming language. It is designed for developing system software, portable application software. Despite its low-level capabilities, the language was designed to encourage cross-platform programming.

Objectives
• To gain experience about structured programming
• To help students to understand the implementation of C language
• To understand various features in C

UNIT-I

UNIT-II

UNIT-III

UNIT-IV
Pointers: Pointers – Introduction – Declaring Pointer Variables - Pointer and Arrays - Pointers and Strings – Array of Pointers - Functions and Pointers - Function Returning Pointers -Pointers to functions - Pointers and Structures

UNIT-V
Text Books


References


Web Sites
http://www.cs.cf.ac.uk/Dave/C/CE.html
http://www2.its.strath.ac.uk/courses/c/
http://www.iu.hio.no/~mark/CTutorial/CTutorial.html
1. Write a program to find factorial of a given number using recursive and non recursive
2. Write a program to generate Fibonacci series.
3. Write a program to print Multiplication table using for and Do While Loops
4. Write a program to find the roots of quadratic equation
5. Write a program to find Maximum number without using arrays
6. Write a program to convert a given number into words
7. Write a program to calculate SIN(x) without using library function
8. Write a program
   (i) to find the length of a string
   (ii) concatenation of two strings
9. Write a program to reverse the given string
10. Write a program to count the vowels in a given sentence
11. Write a program to check the given string is palindrome or not
12. Write a program to perform matrix multiplication
13. Write a program to perform Stack Operations
14. Write a program to sort and search the number using Binary search.
15. Using any one sorting method to sort given ‘n’ numbers using pointers.
16. Write a program to prepare an employee pay slip using structures
17. Write a program for Electricity Bill Preparation using files
18. Write a program for the Odd and even numbers are stored in separate files the original files.
Scope
Digital Electronics represent signals by discrete bands of analog levels, rather than by a continuous range. All levels within a band represent the same signal state. In most cases the number of these states is two, and they are represented by two voltage bands: one near zero volts and a higher level near the supply voltage, corresponding to the "false" ("0") and "true" ("1") values of the Boolean domain respectively. This course provides the basics of digital circuit construction and its operations.

Objectives
- To learn the fundamentals of different numbering system, conversions and the basics laws of Boolean algebra.
- To provide a strong foundation in construction of Sequential and Combinational Circuits.
- To familiarize with the function of Gates, Flip Flops, Shift Registers, Counters, A/D & D/A Converters and its Applications.

UNIT I – Number System and Codes

UNIT II – Logic Gates and Boolean Algebra

UNIT III – Combinational Logic Circuits
Basic overview of Logic functions – Basic Adders & Subtractor – Parallel Binary Adder – 4-bit Binary Adder/Subtractor – Comparators – Encoders and Decoders – Code Converters – Multiplexers and Demultiplexers — Parity Generators/Checkers.

UNIT IV – Sequential Logic Circuits

UNIT V – D/A, A/D Converters
Digital to Analog converters: Resistor Networks - Binary Ladder – Analog to Digital converters: Counter type – Ramp type – Successive Approximation Type.
Text Books


References

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<th>15ITU112</th>
<th>Digital Electronics Lab</th>
<th>Semester – I</th>
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(Any 8 Experiments)

1. Verification of basic gates
2. Realization of Logic Gates Using Universal Gates
3. Adder using Gates
5. Multiplexer
6. Demultiplexer
7. Encoder
8. Decoder
9. Study of Flip-flops
10. Binary to Gray and Gray to Binary Converter
SCOPE
The students fit for the future time and to develop a sense of competitive spirit, co-operation, leadership, diligence, punctuality, and team-spirit as well as to provide a backdrop for the development of their creative talents

OBJECTIVES
To improve the integral development of human begins
To train the students towards sustainable lifestyle
To create awareness about the values and their significance and role
To imbibe the concept of discipline and freedom

UNIT – I
Concept of Self, self-esteem and self-confidence. Concept of personality, determinants and disorganization of it. Personality development – meaning.

UNIT – II
Goal setting – meaning and importance; steps in goal setting Manners and Etiquette – meaning need and importance; means to improve. Positive thinking.

UNIT – III
Discipline – meaning. Concept of Roles and Responsibility Time Management – Meaning and steps for effective time management.

UNIT – IV
Interpersonal relationship – meaning and importance; means to improve it. Healthy friendship.

UNIT – V
Family Relationship importance of it; Means to improve. Spirituality – meaning. Its relationship with Altruism, sacrifice, self control, tolerance and truthfulness.

TEXT BOOKS
15SSD101  Soft Skill Development - I

Instruction Hours / week: L: 2 T: 0 P: 0  Marks: Internal: 100 External: Nil Total: 100

SCOPE
To achieve the analytical and reasoning competencies and to improve their communication and presentation skills

OBJECTIVES
- To impact knowledge on both Aptitude and Soft skills to the students
- To critically evaluate and demonstrate various principles involved in solving mathematical problems and to adopt new and faster methods of calculations.
- Reinforcing competencies in soft skills which are crucial in a social setting

UNIT - I
Introduction to Quantitative Aptitude, Speed Maths, Problems on Numbers, Averages, Ratios and Proportions, Problems on Ages

UNIT - II
Number Series, Blood Relation, Image Analysis, Direction Sense, Syllogism, Coding and Decoding

UNIT – III
Percentages, Data Interpretation, Profit and Loss, Simple Interest and Compound Interest

UNIT – IV
Parts of Speech, Tense, Subject Verb Agreement, Active and Passive Voice, Articles, Prepositions

UNIT - V
Conditional Clause, Degrees of Comparison, Goal Setting, Interpersonal Skills
பாடல் 1, குறிப்பிட்டு
15LAU201: தமிழ் திறமை தொன்று

அப்படி - I: பக்தத் திறக்கியம்

1. சிறுவர் - சுற்று பரவலையிலுள்ள முக்குற்றுக்கூட்டுப்பட்டு 15 பாகங்கள்
2. வருடங்கள் - மாதங்கள் துளைப்பாறாக குறிப்பிட்டும் பாகங்கள் 11 பாகங்கள்

அப்படி - II: தமிழ் திறக்கியம்

அ). செய்யல்முழுக்க

துறைகளால்:
1. மொழி திறைப்பாறா, தொடர் - புராணம்,
   அதிகாரத் வேலைகள் போன்ற புராணக் குறிப்பிட்டு.
2. பல பார் தமிழ், தொடர் - வருடங்கள்,
   அதிகாரத் வேலை பல பார் தமிழ் குறிப்பிட்டு.

துறைகளால்:
2. பற்றிய விளக்கம், தொடர் - புராணம்,
   அதிகாரத் வேலை பற்றிய விளக்கம் குறிப்பிட்டு.

முன்பாகப் புராணம்:
1. மதுராக்களர் முதல், தொடர் - வருடங்கள், அதிகாரத் வேலை.
2. மகாபேரகம் விளக்கம், தொடர் - புராணம், அதிகாரத் வேலை.

பாடல் பதிப்பு - புதுத்து நாள்கள், அதிகாரத் வேலை பதினாலும் புராணம்

பாடல் - கலந்த பதினாலும் புராணம், அதிகாரத் வேலை குறிப்பிட்டு.

கட்டுரைகளால் - கூறுப்பாடு காரணங்கள், தொடர் - புராணக் குறிப்பிட்டு.
பொழுதுபாடு - 1. தி.பி.எஸ் பட்டியல், கிளாஸ் - பார்சூலம்
2. தீர்வுச் செயல்பாதை புகழ்பெற வல்ல நூற்றண்டாண்டு போன்ற வகைசமாக உருவைத்தல்

அ. புத்தாண்டியல் - திகப்பூரானை மாவட்டம் - தெலுங்கா - தமிழாங்கா - தமிழாங்கா

அகத்தால் - III: சேயலயச்
1. ஏனையத்தான் - பல்கனி பீனும் தொலுரு - சுருங்கா, பெங்கலையின் மீது
   கொண்டிருந்த எண்ணெய்யார்களும் காரணமாக
   முறுக்கட்டிய எண்ணெய்யார்களும் காரணமாக
   மீத்தவங்கள், திகப்பூரானை எண்ணெய்யார்களும் காரணமாக
2. சேயலயச் - திருச்சுந்திரம் பிள்ளா, உருமாற்றுவகையில் 41 பார்வை

அகத்தால் - IV: காதல்விளக்கம்
1. திருச்சுந்திரம் சேயலயச் செயல்களாக வாழ்வதாக - குறிப்பிட்டு வருகின்ற நூற்றண்டாண்டு
2. திருச்சுந்திரம் சேயலயச் செயல்களாக வாழ்வதாக - குறிப்பிட்டு வருகின்ற நூற்றண்டாண்டு
3. சேயலயச் சொல்லின் - பயரியின் சொல்லின் குறைமையானாக
4. சேயலயச் சொல்லின் - நூற்றண்டாண்டு - பயரியின் குறையானாக
5. சேயலயச் சொல்லின் பயர்பார்வை - திருச்சுந்திரம் - பயர்பார்வை என்பதாக

அகத்தால் - V: பிரதானச் சொல்லியானை விளக்கம்
1. பிரதானச் சொல்லியானை விளக்கம்
2. பிரதானச் சொல்லியானை

Part I TAMIL 2015. Karpagam University, Coimbatore - 21, India
Semester-II

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**15ENU201 ENGLISH - II**

**Objectives**
- To train the students in acquiring proficiency in English by reading different kinds of genres in literature.
- To provide aesthetic pleasure through literature.

**UNIT I:**
- **Prose:** The Unexpected- Robert Lynd
- **Poetry:** The Village Schoolmaster – Oliver Goldsmith
- **Short Story:** The Lion’s Share – Arnold Bennett
- **Vocabulary:** Homonyms
- **Grammar:** Irregular Verbs

**UNIT II:**
- **Prose:** Travel by Train – J. B. Priestly
- **Poetry:** The Gift of India – Sarojini Naidu
- **Grammar:** Sentence patterns
- **Composition:** Reading Comprehension

**UNIT III:**
- **Prose:** Women’s Education is Almost More Important than the Education of Boys and Men – Indira Gandhi
- **Short Story:** The Necklace – Guy De Maupassant
- **One-Act Play:** The Referee – W.H. Andrews and Geoffrey Dearmer
- **Vocabulary:** Similes
- **Grammar:** Discourse Markers
- **Composition:** Report Writing

**UNIT IV:**
- **Poetry:** Ozymandias – P.B. Shelley
- **One-Act Play:** The Pot of Broth- W.B. Yeats
- **Vocabulary:** Collective Nouns
- **Grammar:** Correction of Sentences
- **Composition:** Picture Reading

**UNIT V:**
- **Short Story:** The Silver Butterfly– Pearl S. Buck
- **One-Act Play:** The Bear – Anton Chekov
- **Vocabulary:** Acronyms
- **Grammar:** Question Tags
- **Composition:** Drafting Advertisement

**Text Book**
Board of Directors , 2014,. Wings of Communication, Emerald Publishers: Chennai

**Reference**
Scope
Industry standard software engineering techniques will be presented and used to architect the system design. Objects, their behaviors, and their relationships, will be modeled and these models will be programmed into a functional application that the student will compile, modify, enhance and run.

Objectives
- The objective of this course is to provide the student with the fundamental knowledge and skills to become a proficient C++ programmer.
- The student will learn to transpose the physical problem domain into a hierarchy of objects.
- The student will program in a structured style whereby reinforcing the concepts of software quality, reliability and maintainability.

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V
File Management: Files: Classes for file stream operations – Opening and Closing a file – sequential input and output operations – updating a file random access – Command Line
Arguments. Templates and Exceptions:- Templates – class templates – function templates – member function templates – exception handling.

**Text Books**


**References**


**Web Sites**
www.daniweb.com
www.eships.com
www.allexperts.com
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<td>C++ Programming Lab</td>
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Write a C++ Program for the Following Concepts

**Object and classes:**

1. Create a class to implement the data structure STACK. Write a constructor to initialize the top of the stack to zero. Write a member function PUSH() to insert an element and a member function POP() to delete an element.

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, subtraction, multiplication, division and modulus respectively. Write member functions to get and display MAT() object values.

**Operator overloading:**

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

4. Create a class STRING. Write member functions to initialize to 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 strings.

**Inheritance:**

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

6. Create a class SHAPE which consist of two virtual functions cal_Area() and cal_Perimeter() to calculate area & 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 consist of two private variables, one integer and one float variable in each class. Write member functions to get and display them. Write a FRIEND function common to both classes which takes the object of the above two classes as arguments and the integer and float values of both the objects separately and display the result.

**Console I/O:**

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

**Files:**

9. Write a program to perform insertion, deletion and updation of records using files.

10. Write a program which takes a file as an argument and copies into another file with line numbers using command line arguments.

**Templates:**

11. Write a Program to swap the numbers using the concept of function template.
Scope
The 8051 microcontroller is one of the most popular general purpose microcontrollers in use today. The success of the Intel 8051 spawned a number of clones which are collectively referred to as the MCS-51 family of microcontrollers. 8051 chips are used in a wide variety of control systems, telecom applications, and robotics as well as in the automotive industry. This course gives the fundamental concept of 8051 Chip and Embedded Applications.

Objectives
- To learn the various Concepts of Embedded System
- To develop the Programming Skills in 8051 Microcontroller.
- To provide a strong knowledge in the field of Real Time Operating System.

UNIT I – 8051 Microcontroller

UNIT II – 8051 Programming
8051 Assembly and C Programming – Instruction Set –Address Modes - Loop and Jump Instructions - Arithmetic Instruction - Logic Instructions - Single Bit Instructions. Data Types and Directives - I/O Port Programming.

UNIT III – Internal Peripherals of 8051

UNIT IV – Applications
Interfacing LCD to the 8051 – Interfacing ADC – Sensors to 8051- Interfacing Stepper Motor - 8051 Interfacing to the Keyboard - Interfacing DAC to the 8051.

UNIT V – Real-Time Operating System

Text Books
**References**


Scope
This course deals with the presents the modern computer organization, processor and memory concept, Peripherals and recent system architecture. It helps to identify the existing configuration of the computers and peripherals for upgrading the same as and when required.

Objectives
• To learn the fundamentals of PC Hardware.
• To develop base knowledge in the installation of peripheral devices.
• To provide a strong knowledge in Trouble shooting of PC

UNIT I – Micro Computer System
Introduction to Micro Computer System – Computer Organization – Number Systems and Codes Memory – Arithmetic and Logic Unit – Control Unit.

UNIT II – Peripheral Devices

UNIT III – Display Adapter
CRT Display — CRT Controller –Auxiliary Subsystems – Data Communication fundamentals – Serial Port in PC – Real time clock (RTC) – Magnetic Tape Subsystems – LAN – Memory Expansion Options

UNIT IV – Installation and Preventive Maintenance
Pre Installation Planning – Installation Practice – Routine Checks – Special Configurations – Memory Up Gradation

UNIT V – Trouble shooting

Text Books


Reference
Scope
This course provides an introduction to microprocessor, assembly language programming techniques, Design of Hardware Interfacing, Microprocessor System Design and its Applications. It helps to understand the various aspects of hardware design, such as interfacing of memory and different types of I/O devices.

Objectives
- To know the fundamental concepts of Microprocessor
- To enable the students to understand the Programming, Interfacing Concepts and its Applications.

UNIT I – Introduction to 8-bit Microprocessor

UNIT II – Addressing Modes
Instruction Set – Addressing Modes – Instruction Format – Simple Program – Memory Read Machine Cycle – Memory Unit s Machine Cycle.

UNIT III - Interfacing Concepts

UNIT IV Peripheral Devices

UNIT V- Applications

Text Books

References

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester II</th>
</tr>
</thead>
<tbody>
<tr>
<td>15ITU212A</td>
<td>Allied Elective Lab - Embedded Systems Lab</td>
<td>0 0 3 2</td>
</tr>
</tbody>
</table>

1. Addition of 8/16 Bit Array of Data
2. Subtract of 8/16 Bit Array of Data
3. Multiplication & Division
4. Ones and Two’s Compliment
5. Data Transfer using Parallel Port
6. Sorting of Numbers
7. Stepper Motor Interface
8. Wave Form Generation
9. Biggest and Smallest Number in an Array
10. D/A Converter
15ITU212B  Allied Elective Lab - PC hardware and Troubleshooting Lab

(Any 8 Experiments)

1. Identifying External Ports and Interfacing
2. Identifying PC cards and Interfacing.
3. Assembling of PC
4. Preventive Maintenance of a PC
5. Trouble Shooting of SMPS
6. Keyboard Servicing
7. Study of CRT
8. Communication and Bus Interfacing
10. Installing System And Application Software
1. Addition of 8/16-bit and Array of Data
2. Subtraction of 8/16-Bit Number
3. Multiplication of 8-Bit Number
4. Division of 8-bit Number
5. Fill and Transfer an Array of Data.
6. Ascending and Descending of an Array.
7. Data Transfer using Parallel Ports.
8. Stepper Motor Interface
9. Traffic Light Controller
10. A/D Convertor and D/A Convertor

(Any 8 Experiments)
 SCOPE

The study creates awareness among the people to know about various renewable and nonrenewable resources of the region, enables environmentally literate citizens (by knowing the environmental acts, rights, rules, legislation, etc.) to make appropriate judgments and decisions for the protection and improvement of the earth.

OBJECTIVES

- Creating the awareness about environmental problems among people.
- Developing an attitude of concern for the environment.
- Motivating public to participate in environment protection and improvement.

UNIT - I: Eco system and natural resources: Environment – Definition – components - Ecosystem -Definition, Concept, Scope, importance, structure and functions of ecosystem. Energy flow, Ecological succession. Food chains and food webs. Classification of ecosystem. Natural resources: Forest resources; water resources

UNIT - II: Environmental pollution: Cause, effects and control measures of Air pollution, water pollution, soil pollution, marine pollution, noise pollution, thermal pollution and nuclear hazards pollution. Solid waste management.


UNIT - V: Environment ethics: Environmental Ethics - Gender equity, ethical basis of environment education and awareness, conservation ethic and traditional value systems of India. Valuing nature, cultures, social justice, Human heritage, equitable use of resources, preserving resources for future generation, common property resources, Ecology and its uses and its degradation, Introduction to Environmental Protection Act (EPA).

TEXT BOOKS


REFERENCES

15SSD101 Soft Skill Development - I

Instruction Hours / week: L: 2 T: 0 P: 0 Marks: Internal: 100 External: Nil Total: 100

SCOPE
To achieve the analytical and reasoning competencies and to improve their communication and presentation skills

OBJECTIVES
➢ To impact knowledge on both Aptitude and Soft skills to the students
➢ To critically evaluate and demonstrate various principles involved in solving mathematical problems and to adopt new and faster methods of calculations.
➢ Reinforcing competencies in soft skills which are crucial in a social setting

UNIT - I
Introduction to Quantitative Aptitude, Speed Maths, Problems on Numbers, Averages, Ratios and Proportions, Problems on Ages

UNIT - II
Number Series, Blood Relation, Image Analysis, Direction Sense, Syllogism, Coding and Decoding

UNIT – III
Percentages, Data Interpretation, Profit and Loss, Simple Interest and Compound Interest

UNIT – IV
Parts of Speech, Tense, Subject Verb Agreement, Active and Passive Voice, Articles, Prepositions

UNIT - V
Conditional Clause, Degrees of Comparison, Goal Setting, Interpersonal Skills
Objectives

- To develop confidence to respond in English during situations where the use of English is imperative.
- To develop fluency in actual conversation in the English language.
- To develop speech skills necessary for confident and intelligent participations in Group Discussions and develop skills related to teamwork in work places.

UNIT I
Listening: Listening comprehension – Listening for Specific Information – Note Taking – Interpreting Charts and Diagrams.

UNIT II

Telephone Skills – Understanding telephone conversation – handling calls – leaving messages – making requests - giving instructions and orders


(Completing dialogues)

UNIT III
Reading: Reading – Reading with a purpose – Skimming and Scanning – locating main points – reading critically – Sequencing of sentences – Reading comprehension.

UNIT IV

Translation- Translating short sentences and passages from English to Tamil and from Tamil to English.

UNIT V
Vocabulary: Improve English vocabulary: Synonyms – Antonyms – Prefixes – Suffixes – Idioms – Collocations – Different types of English – British and American (Choose the best answer type from a database of 50 words each for each topic)

Functional Grammar: Forming questions, getting answers – Articles – Parts of Speech – Punctuation – Common mistakes in English (Homophones)(Exercise based)
References


Spoken English Part I & II (for Tamil speakers), Orient Longman Pvt. Ltd.

**Data Structures and Algorithms**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>L</th>
<th>T</th>
<th>P</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>15ITU301</td>
<td>Data Structures and Algorithms</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
</tbody>
</table>

**Scope**

Data structures and algorithms are the building blocks in computer programming. This course will give students a comprehensive introduction of common data structures, and algorithm design and analysis. This course also intends to teach data structures and algorithms for solving real problems that arise frequently in computer applications, and to teach principles and techniques of computational complexity.

**Objectives**

- Possess intermediate level problem solving and algorithm development skills on the computer
- Able to analyze algorithms using big-Oh notation
- Understand the fundamental data structures such as lists, trees, and graphs

**UNIT I**

*Overview of Data Structures*: Introduction to Data Structures: Introduction to the Theory of Data Structures Data Representation-Abstract Data Types-Data Types-Primitive Data Types-Difference between Abstract Data Types, Data Types, Data Structures. Programming and Analysis of Algorithms: Program Design-Algorithms-Different Approaches to Designing an Algorithm-Complexity-Big ‘O’ Notation-Algorithm Analysis-Structured Approach to Programming-Recursion-Tips and Techniques for Writing Programs in C.

**UNIT II**


**UNIT III**


**UNIT IV**

UNIT V


**Text Book**
ISRD GROUP, 2013, Data Structures Using C, 2nd Edition. [Unit-I(1-26), Unit-II(27-99), Unit III(129-206), Unit IV(210-248, 255-284, 340-344), Unit V(348-370, 308-339)].

**References**


**Web Sites**
www.gatesit.org/gitdownloads/C&DS.pdf
Scope
It is an entry-level course for creating database systems. This course is designed for students who have an interest in developing applications. It is used to understand the role and nature of relational database management systems (RDBMS) in today's IT environment.

Objectives
- To understand the application development environment.
- To gain programming Skills and Database Creation in RDBMS.
- Ability to use SQL for storing and retrieving data from the RDBMS.
- Ability to arrive at a normalized design of tables and other database objects in RDBMS.
- Ability to use PL/SQL

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V

**Text Books**
Bipin C. Desai, 2013, An Introduction to Database Systems, Galgotia Publications, New Delhi [Unit-I (20-30, 45-72, 660-663, 821-826), Unit – II (145-184, 293-306), Unit- III (208-242)]

Rajiv chopra, 2013, Database Management systems, 3rd revised edition, S.Chand publications. [Unit I (404 – 432), Unit V (460-463)].


**References**


**Case Study**
Project: University System
Project : Course Registration System
Project : Airline Reservation System

**Web Sites**
www.databasedir.com
www.rdbms.org
1. Create a table with following fields:
   Employee table:

<table>
<thead>
<tr>
<th>Field name</th>
<th>Constraint</th>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee_no</td>
<td>Primary key</td>
<td>Character</td>
<td>6</td>
</tr>
<tr>
<td>Employee_name</td>
<td></td>
<td>Character</td>
<td>30</td>
</tr>
<tr>
<td>Address</td>
<td></td>
<td>Character</td>
<td>25</td>
</tr>
<tr>
<td>Designation</td>
<td></td>
<td>Character</td>
<td>15</td>
</tr>
<tr>
<td>Dob</td>
<td></td>
<td>Date</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Check</td>
<td>Character</td>
<td>1</td>
</tr>
<tr>
<td>Doj</td>
<td></td>
<td>Date</td>
<td></td>
</tr>
<tr>
<td>Salary</td>
<td></td>
<td>Number</td>
<td>10,2</td>
</tr>
</tbody>
</table>

   Queries:
   a) Display name of the employees whose salary is greater than “10,000”.
   b) Display the details of employees in ascending order according to Employee Code
   c) Display the details of the employee earning the highest salary.
   d) Display the names of the employees who earn more than “Ravi”

2. Create a table named Student with the following fields and insert the values:

<table>
<thead>
<tr>
<th>Field name</th>
<th>field type</th>
<th>field size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Name</td>
<td>character</td>
<td>15</td>
</tr>
<tr>
<td>Gender</td>
<td>character</td>
<td>6</td>
</tr>
<tr>
<td>Roll No.</td>
<td>character</td>
<td>10</td>
</tr>
<tr>
<td>Department Name</td>
<td>character</td>
<td>15</td>
</tr>
<tr>
<td>Address</td>
<td>character</td>
<td>25</td>
</tr>
<tr>
<td>Percentage of Marks</td>
<td>number</td>
<td>4, 2</td>
</tr>
</tbody>
</table>

   Queries:
   a) Calculate the average mark percentage of the students.
   b) Display the names of the students whose percentage marks are greater than 80%
   c) Display the details of the student who got the highest percentage of marks.
   d) Display the details of the students whose mark percentage is between 50 and 70.
   e) Display the details of the students whose mark percentage is greater than the mark percentage of Roll No = 12CA01

3. Create a table with following fields:
   Staff table:

<table>
<thead>
<tr>
<th>Field name</th>
<th>Constraint</th>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff_no</td>
<td>Primary key</td>
<td>Character</td>
<td>6</td>
</tr>
<tr>
<td>Staff_name</td>
<td></td>
<td>Character</td>
<td>30</td>
</tr>
<tr>
<td>Dob</td>
<td></td>
<td>Date</td>
<td></td>
</tr>
<tr>
<td>Dept_code</td>
<td>Foreign key</td>
<td>Character</td>
<td>4</td>
</tr>
<tr>
<td>Designation</td>
<td></td>
<td>Character</td>
<td>15</td>
</tr>
<tr>
<td>Basic Salary</td>
<td></td>
<td>Number</td>
<td>7,2</td>
</tr>
</tbody>
</table>
Department table:

<table>
<thead>
<tr>
<th>Field name</th>
<th>Constraint</th>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dept_code</td>
<td>Primary key</td>
<td>Character</td>
<td>4</td>
</tr>
<tr>
<td>Dept_name</td>
<td></td>
<td>Character</td>
<td>30</td>
</tr>
</tbody>
</table>

Execute the following queries:
1. To list the staff who joined 2 years back.
2. To list the staff in computer science dept.
3. To list the staff name and the dept name in which he/she works.
4. To list the maximum and minimum salary in each dept.
5. To list the dept along with the total amount spent on salary
6. To list the name of the employees who draw the salary more than the average salary.

4. Create a table with the following fields:

Book table:

<table>
<thead>
<tr>
<th>Field name</th>
<th>Constraint</th>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access_no</td>
<td>Primary key</td>
<td>Character</td>
<td>6</td>
</tr>
<tr>
<td>Title</td>
<td></td>
<td>Character</td>
<td>30</td>
</tr>
<tr>
<td>Author</td>
<td></td>
<td>Character</td>
<td>30</td>
</tr>
<tr>
<td>Publisher</td>
<td></td>
<td>Character</td>
<td>30</td>
</tr>
<tr>
<td>Subject</td>
<td></td>
<td>Character</td>
<td>10</td>
</tr>
<tr>
<td>Price</td>
<td></td>
<td>Number</td>
<td>6,2</td>
</tr>
</tbody>
</table>

Execute the following queries:
1. The title of C and C++ books.
2. The books written by a particular author.
3. The books which cost between Rs.300/- and Rs.500/-
4. The number of books available in each subject.
5. The books in the decreasing order of the cost.

5. Create a table with the following fields:

Account table:

<table>
<thead>
<tr>
<th>Field name</th>
<th>Constraint</th>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acc_no</td>
<td>Primary key</td>
<td>Number</td>
<td>4</td>
</tr>
<tr>
<td>Cust_name</td>
<td></td>
<td>Varchar2</td>
<td>30</td>
</tr>
<tr>
<td>Branch_name</td>
<td></td>
<td>Varchar2</td>
<td>30</td>
</tr>
<tr>
<td>Cust_city</td>
<td></td>
<td>Varchar2</td>
<td>30</td>
</tr>
</tbody>
</table>

Borrower table:

<table>
<thead>
<tr>
<th>Field name</th>
<th>Constraint</th>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acc_no</td>
<td>Foreign key</td>
<td>Number</td>
<td>30</td>
</tr>
<tr>
<td>Branch_name</td>
<td></td>
<td>Varchar2</td>
<td>30</td>
</tr>
<tr>
<td>Amount</td>
<td></td>
<td>Number</td>
<td>8,2</td>
</tr>
</tbody>
</table>

Write a Query to perform different types of Join.
6. Create two tables course & batch with following fields:

**COURSE:** coursecodeno number(5), course name varchar(20), syllabus varchar(20)

**BATCH:** bcode number(5), coursecode number(5), starting_date date, duration number(3), coursefee number(10,2)

Perform the following queries:

- Insert the details for course and batch tables with 10 records
- Show the description of the two tables
- Select all the fields from course & batch tables
- Select all the fields from course & batch tables where coursecode=10
- Select all the fields from batch table where starting date=march 10th
- Select batch code from batch table where net income>50000
- Select course name, batch code & starting date from batch & course tables where course code in batch table and course code in course table are equal
- Select a syllabus from course where coursecode=5

7. Create table with following fields:

**Product table:**

<table>
<thead>
<tr>
<th>Field name</th>
<th>Constraint</th>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product_code</td>
<td>Primary key</td>
<td>Varchar2</td>
<td>7</td>
</tr>
<tr>
<td>Product_name</td>
<td>Varchar2</td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Price</td>
<td>Number</td>
<td></td>
<td>6,2</td>
</tr>
<tr>
<td>Quantity</td>
<td>Number</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

**Vendor table:**

<table>
<thead>
<tr>
<th>Field name</th>
<th>Constraint</th>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vendor_name</td>
<td>Varchar2</td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Vendor address</td>
<td>Varchar2</td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Product_code</td>
<td>Foreign Key</td>
<td>Varchar2</td>
<td>7</td>
</tr>
</tbody>
</table>

Create a trigger to fire when the Record is deleted and inserted.

8. Write a PL/SQL trigger to update the records while deleting the one record in another table.

**voters_master:**

<table>
<thead>
<tr>
<th>Field name</th>
<th>Constraint</th>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>voterid</td>
<td>Primary key</td>
<td>Number</td>
<td>5</td>
</tr>
<tr>
<td>name</td>
<td>Varchar2</td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Ward_no</td>
<td>Primary key</td>
<td>Number</td>
<td>4</td>
</tr>
<tr>
<td>dob</td>
<td>Date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>address</td>
<td>Varchar2</td>
<td></td>
<td>150</td>
</tr>
</tbody>
</table>

**new_list**

<table>
<thead>
<tr>
<th>Field name</th>
<th>Constraint</th>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>voterid</td>
<td></td>
<td>Number</td>
<td>5</td>
</tr>
<tr>
<td>ward_no</td>
<td></td>
<td>Number</td>
<td>4</td>
</tr>
<tr>
<td>name</td>
<td></td>
<td>Varchar2</td>
<td>30</td>
</tr>
<tr>
<td>Description</td>
<td></td>
<td>Character</td>
<td>50</td>
</tr>
</tbody>
</table>
9. Create a table to store the salary details of the employees in a company. Declare the cursor id to contain empno, employee name and net salary. Use cursor to update the employee details.

Salary:

<table>
<thead>
<tr>
<th>Field name</th>
<th>Constraint</th>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>emp_no</td>
<td>Primary key</td>
<td>Number</td>
<td>4</td>
</tr>
<tr>
<td>emp_name</td>
<td></td>
<td>Varchar2</td>
<td>30</td>
</tr>
<tr>
<td>designation</td>
<td></td>
<td>Varchar2</td>
<td>25</td>
</tr>
<tr>
<td>dept</td>
<td></td>
<td>Varchar2</td>
<td>30</td>
</tr>
<tr>
<td>basic</td>
<td></td>
<td>Number</td>
<td>5</td>
</tr>
</tbody>
</table>

10. Write the PL/SQL program to find the factorial and Fibonacci series of given number.

11. (i) Write the PL/SQL program to check whether the string is Palindrome.
(ii) Write the PL/SQL program to reverse a number.
(iii) Write the PL/SQL program to check whether the number is Armstrong.

12. Write a PL/SQL block to create and handle user defined exception.

13. Create a table to store the salary details of the employees in a company. Declare the cursor id to contain employee number, employee name, and net salary. Use cursor to update the employee details.

<table>
<thead>
<tr>
<th>Field name</th>
<th>Constraint</th>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>emp_no</td>
<td>Primary key</td>
<td>Number</td>
<td>4</td>
</tr>
<tr>
<td>emp_name</td>
<td></td>
<td>Varchar2</td>
<td>30</td>
</tr>
<tr>
<td>designation</td>
<td></td>
<td>Varchar2</td>
<td>25</td>
</tr>
<tr>
<td>dept</td>
<td></td>
<td>Varchar2</td>
<td>30</td>
</tr>
<tr>
<td>basic</td>
<td></td>
<td>Number</td>
<td>5</td>
</tr>
<tr>
<td>da_percent</td>
<td></td>
<td>Number</td>
<td>3</td>
</tr>
<tr>
<td>ma</td>
<td></td>
<td>Number</td>
<td>6,2</td>
</tr>
<tr>
<td>other_allowance</td>
<td></td>
<td>Number</td>
<td>6,2</td>
</tr>
<tr>
<td>deduction</td>
<td></td>
<td>Number</td>
<td>6,2</td>
</tr>
</tbody>
</table>

14. Create a table **stock** contains the itemcode varchar2(10), itemname varchar2(50), current_stock number(5), data_of_last_purchase date. Write a stored procedure to seek for an item using itemcode and delete it, if the date of last purchase is before 1 year from the current date. If not, update the current stock.
15. Create a table to contain phone_number, user_name, address. Write a function to search for address using phone_number.

Vendor table:

<table>
<thead>
<tr>
<th>Field name</th>
<th>Constraint</th>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vendor_name</td>
<td></td>
<td>Character</td>
<td>30</td>
</tr>
<tr>
<td>Vendor address</td>
<td></td>
<td>Character</td>
<td>30</td>
</tr>
<tr>
<td>Product_code</td>
<td>Foreign Key</td>
<td>Character</td>
<td>7</td>
</tr>
</tbody>
</table>

Create a trigger to fire when the Record is deleted.
**Scope**
This course provides a deep knowledge to the learners to understand the basic concepts of Numerical Methods which utilize computers to solve Engineering Problems that are not easily solved or even impossible to solve by analytical means.

**Objectives**
To enable the students to study numerical techniques as powerful tool in scientific computing.

**UNIT I**

**UNIT II**

**UNIT III**
Interpolation: Gregory Newton Forward and Newton Backward interpolation formula – Interpolation with unequal intervals — Lagrange’s interpolation formula – Inverse interpolation formula.

**UNIT IV**
Numerical Differentiation and Integration: Newton’s Forward and backward differences to compute derivatives – Trapezoidal rule, Simpson’s 1/3 & 3/8 rule.

**UNIT-V**

**Text Book**

**References**

Scope
Students will learn the principles of Mobile Computing and its enabling technologies, and explore a young but rich body of exciting ideas, solutions, and paradigm shifts.

Objectives
This course will cover a broad selection of topics in data communications, resource management, network protocols, distributed computing, information management, user interfaces, applications/services, and security. It lists different applications that mobile computing offers to people, employees, and businesses. It describes the possible future of mobile computing technologies and applications.

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V
Text Book

References
Jochen Burkhardt Dr . Horst Henn, Klaus Rintdoff, Thomas Schack, 2009, Pervasive Computing, Pearson Education.

Scope
Design, implement and deploy mobile applications using an appropriate software development environment

Objectives
To understand the concepts and learn the tools for developing applications on mobile platforms like Android. The student can
- Describe the limitations and challenges of working in a mobile and wireless environment.
- Describe and apply the different types of application models/architectures used to develop mobile software applications.
- Describe the components and structure of mobile development frameworks
- Describe and work within the capabilities and limitations of a range of mobile computing devices

UNIT I
Introduction to Mobile Development: What is mobile computing?, History of mobile environments – early mobile phones to smartphones and tablets, Development for mobile environments, Differences from traditional application development, Trends in mobile development.

UNIT II

UNIT III

UNIT IV
Basic Android Development: Writing Android Applications, Activity Lifecycle, Multi device support, Fragments, Data storage, Intents, Data sharing, Audio playback, Photo capture

UNIT V
Text Book

References
Scope
This course helps in understanding the emerging area of "cloud computing" and its relationship to traditional models of computing.

Objectives
- To understand cloud services
- To understand the concepts of event management and its applications
- To understand the Green computing strategies and its applications
- To understand the challenges and economics involved in shifting computing hardware to the cloud

UNIT I
Understanding cloud computing: An introduction to cloud computing- what it is & what it is not- History - The network is the computer: How cloud computing works. Companies in the cloud: cloud computing today. The pros and cons of cloud computing- benefits- developing cloud services.

UNIT II
Cloud computing for the community- Cloud computing for the corporation- Using Cloud services: collaborating on calendars, schedules, and Task management. Exploring online calendar applications- Exploring online schedule applications- Exploring online planning and task management.

UNIT III

UNIT IV

UNIT V
Text Books

References
Instruction Hours / week: L: 2 T: 0 P: 0  Marks: Internal: 100 External: Nil  Total: 100

SCOPE
To achieve the analytical and reasoning competencies and to improve their communication and presentation skills

OBJECTIVES
➢ To impact knowledge on both Aptitude and Soft skills to the students
➢ To critically evaluate and demonstrate various principles involved in solving mathematical problems and to adopt new and faster methods of calculations.
➢ Reinforcing competencies in soft skills which are crucial in a social setting

UNIT - I
Time, Speed and Distance, Time and Work, Pipes and Cisterns, Geometry, Data Arrangement

UNIT – II
Analogy, Logic based Venn diagram, Probability, Permutation and Combination, Logarithms

UNIT – III
Data Sufficiency, Clocks, Calendar, Reading Comprehension, Sentence Correction, Sentence Completion, Spotting the Errors, Jumbled Sentences

UNIT – IV
Synonyms, Antonyms, Verbal Analogy, Statements and Assumptions, Group Discussion

UNIT - V
Resume Writing, Introduction to HR rounds, Time Management, Attitude and Behaviour
Objectives

- To train the students in understanding the concepts of communication.
- To train the students in developing their written communication and presentation skills.

UNIT I – Concept of Communication – Barrier to Communication – Body language – Personality Development – Etiquette and Manners– Soft Skills – Emotional Intelligence

UNIT II – Listening Comprehension – Reading Comprehension – Paragraph writing – Precise Writing – Writing Resume and Covering Letter – Speaking – Welcome Address, Vote of Thanks, Compering, Debates, Role Play, Dialogues – Vocal Communication Techniques. Voice, Quality, Volume, Pitch

UNIT III – Dicto Composition – Letter Writing (Informal, Letters to the Editor etc) – Term paper – Book reviews


Text Book

References

Balasubramanian M and G Anbalagan. Performance in English. 2007,Anuradha Publications: Kumbakonam


Scope
Develop awareness and appreciation of the many ways that people access the web, and will be able to create standards-based websites that can be accessed by the full spectrum of web access technologies.

Objectives
- This course in curriculum is an introduction to the design, creation, and maintenance of web pages and websites.
- This course enables students to understand web page site planning, management and maintenance
- How to critically evaluate website quality, learn how to create and maintain quality web pages learn to create and manipulate images.
- To gain the skills and project-based experience needed for entry into web design and development careers.
- This course presents introductions to many of the basic concepts, issues and techniques related to designing, developing and deploying Web sites.

UNIT I

UNIT II

UNIT III
UNIT IV

UNIT V
VB Script: Introduction-Adding VB Script code to HTML- Adding VB Script code to Documents-Data Types-Getting the Message Across.

Text Books


References


Web Sites
www.w3schools.com/
www.htmlcodetutorial.com/
jmarshall.com/easy/
Scope
This course is used to become comfortable with object oriented programming: Learn to think in objects. It employs a hierarchy of Java classes to provide a solution to a given set of requirements. It helps to develop robust, object oriented, dynamic and scalable java applications.

Objectives
- Learn the Java programming language: its syntax, idioms, patterns, and styles.
- Learn the essentials of the Java class library, and learn how to learn about other parts of the library when you need them.
- Introduce event driven Graphical User Interface (GUI) programming
- Understand the benefits of Multithreading and Portability
- Develop GUI based applications that respond to user events. using Java

UNIT I

UNIT II
Classes and Objects
Introduction to classes: Instance variables, Class variables, Instance Methods, Constructors, Class methods, Declaring Objects, Garbage Collection, Method Overloading - Constructor Overloading - This Reference. Inheritance: Super class variables- Method Overriding - final Keyword, Abstract Classes and Interfaces.

UNIT III

UNIT IV
UNIT V


**Text Books**

ISRD Group, 2007, Introduction to Object Oriented Programming through Java, 1st Edition, Tata McGraw Hill, New Delhi.[Unit-I (3-104), Unit-II (105-127), Unit-III (129-164), Unit-IV (219-236, 253-280), Unit-V (165-199, 283-307)]

**References**


**Web Sites**
www.java.sun.com
www.knking.com
www.webdeveloper.com
www.forums.sun.com
www.netbeans.com
1. Write a program to find the sum of series $1+x+x^2+x^3+\ldots\ldots$
2. Write a program to find maximum and sum of an array
3. Write a Program to generate Fibonacci Series and Factorial for a number
4. Define a class for Employee with name and date of appointment. Create employee objects and sort them as per their date of appointment.
5. Create a method to calculate the area & perimeter of a circle. Extend the semicircle class child of circle class and override the method to calculate the area and perimeter of a semicircle (if possible use this & super keywords)
6. Create an interface called arithmetic, which defines methods for sum, multiplication, division, subtraction, percentage and implement of them.
7. Write a program to an exception out of bounds, if mark is greater than 100 throw an exception
8. Write a program to generate multiplication table by multithreading
9. Create a package, which holds the class and an interface defined in the question 5 & 6 and use them in your main method/class.
10. Write a program to perform string operations
11. Create a StringBuffer object and illustrate the operation of the append() and reverse() methods.
12. Write a program to create an applet and draw any shapes using color
13. Write an Applet Program to create Menus
14. Write an Applet Program to perform operations in listbox
15. Write an application that converts between meters and feet. Its first command-line argument is a number. Its second command-line argument if either “feet” or “meters”. If this argument equal “feet”, display a string reporting the equivalent number of meters. If this argument equal “meters”, display a string reporting the equivalent number of feet. Otherwise, report that the unit system is not recognized
Scope
This course is emphasized to enhance the learner’s knowledge in optimal use of resources, performance measures of queues, optimal use of Inventory and Network scheduling with various applications in the problems of real times.

Objectives
To enable the students to use the mathematical knowledge in optimal use of resources like LPP, TP, Assignment problems etc.

UNIT I
Linear Programming: Formulation of LPP – Graphical solution to LPP –Simplex method – Big M method and Duality in LPP.

UNIT II
Transportation model: Introduction – Mathematical Formulation –Finding initial Basic Feasible solutions – Optimum solution for non degeneracy and degeneracy model - Unbalanced Transportation problems and Maximization case in Transportation problem

UNIT III
Queuing theory : Introduction – Characteristics of queueing system. Problems in (M/M/1):(∞/FIFO) and (M/M/1): (N/FIFO) models .

UNIT IV
Inventory Control: Introduction – Costs involved in inventory – Deterministic EOQ models – Purchasing Model without and with shortage, Manufacturing Model without and with shortage - Price break.

UNIT V
PERT and CPM: Network representation – Calculation of Earliest expected time, latest allowable occurrence time. CPM - various floats for activities – critical path. PERT – Time estimates in PERT- Probability of meeting scheduled date of completion of projects.

Text Book

References


Scope
On successful completion of this course the learner gains a clear knowledge about various aspects of Statistics, measures, hypothesis testing and application of them in their respective fields.

Objectives
To enable the students to understand the meaning, definition and functions of statistics through collection, representation, finding various measures such as mean, median, mode, correlation etc of statistics.

UNIT-I
Meaning and definition of statistics – Classification of data - Frequency distribution - Diagrammatic Presentation – Bar diagram and Pie diagram – Graphic Presentation – Histogram, Frequency Polygon, Frequency curve and Ogives.

UNIT – II
Measures of central tendency – Arithmetic mean, median and mode. Measures of dispersion-Range, standard deviation, Coefficient of variation.

UNIT – III
Correlation – Meaning and definition - Scatter diagram – Karl pearson’s correlation coefficient. Rank correlation.
Regression: Regression in two variables – Regression coefficient problems – uses of regression.

UNIT – IV
Theoretical Distribution: Basic Concepts - Binomial distribution, Poisson Distribution & Normal distribution (No derivations) and simple problems.

UNIT – V
Test of significance: Tests based on Means only-Both Large sample and Small sample tests - Chi square test - goodness of fit.

Text book

References
Scope
On successful completion of this course the learner gain a complete knowledge about the Formal languages, Automata Theory, Lattices & Boolean Algebra and Graph Theory which plays a crucial role in the field of computers.

Objectives
To enable the students to learn about the interesting branches of Mathematics such as Mathematical logic, Formal languages and Automata, Lattices and Boolean algebra, Directed and undirected graphs etc

UNIT-I
Mathematical logic: Connections well formed formulas, Tautology, Equivalence of formulas, Tautological implications, Duality law, Normal forms, Predicates, Variables, Quantifiers, Free and bound Variables.

UNIT-II
Relations: Properties of Binary relations – Equivalence relations - composition of relations, Closure of relations – Order relations – Partial order relations.
Functions: one-to-one, onto, one-to-one-onto functions – composition of functions, Inverse functions.

UNIT-III
Formal languages and Automata: Grammars: Phrase–structure grammar, context-sensitive grammar, context-free grammar, regular grammar. Finite state automata- Deterministic finite automata and Non deterministic finite automata-conversion of non deterministic finite automata to deterministic finite automata.

UNIT-IV
Lattices and Boolean algebra: Partial ordering, Poset, Lattices, Boolean algebra, Boolean functions, Theorems, Minimization of Boolean functions.

UNIT-V
Graph Theory: Directed and undirected graphs, Paths, Reachability, Connectedness, Matric representation, Eular paths, Hamiltonian paths, Trees, Binary trees simple theorems, and applications.

Text Book
References


SCOPE
To achieve the analytical and reasoning competencies and to improve their communication and presentation skills

OBJECTIVES
- To impact knowledge on both Aptitude and Soft skills to the students
- To critically evaluate and demonstrate various principles involved in solving mathematical problems and to adopt new and faster methods of calculations.
- Reinforcing competencies in soft skills which are crucial in a social setting

UNIT - I
Time, Speed and Distance, Time and Work, Pipes and Cisterns, Geometry, Data Arrangement

UNIT – II
Analogy, Logic based Venn diagram, Probability, Permutation and Combination, Logarithms

UNIT – III
Data Sufficiency, Clocks, Calendar, Reading Comprehension, Sentence Correction, Sentence Completion, Spotting the Errors, Jumbled Sentences

UNIT – IV
Synonyms, Antonyms, Verbal Analogy, Statements and Assumptions, Group Discussion

UNIT - V
Resume Writing, Introduction to HR rounds, Time Management, Attitude and Behaviour
Scope
Understanding the platform; Determinism and concurrency; Handling input and output securely; Safe error handling and logging; Engineering for security features; Software security in operations.

Objectives
- Grasp the fundamentals of a programming language and know the basic differences between programming languages
- .NET using WPF is a latest technology followed in the IT field.
- Choose the architecture based on the problem to be solved
- Differentiate between the types of applications supported by .Net
- Build, compile, and execute a VB.NET program
- Apply techniques to develop error-free software

UNIT I
Introduction to .NET: .NET Framework features & architecture, CLR, Common Type System, MSIL, Assemblies and class libraries. Introduction to visual studio, Project basics, types of project in .Net, IDE of VB.NET- Menu bar, Toolbar, Solution Explorer, Toolbox, Properties Window, Form Designer, Output Window, Object Browser. The environment: Editor tab, format tab, general tab, docking tab. visual development & event driven Programming -Methods and events.

UNIT II

UNIT III

UNIT IV

UNIT V
Database programming with ADO.NET: Overview of ADO, from ADO to ADO.NET, Accessing Data using Server Explorer. Creating Connection, Command, Data Adapter and Data Set with OLEDB and SQLDB. Display Data on data bound controls, display data on data grid. Generate Reports Using CrystalReportViewer.
**Text Books**


Matthew MacDonald Pro, 2008, Windows Presentation Foundation with .NET 3.5, Apress.(Chapters 1,2,4 and 7 only).


**References**


**Web Sites**
www.startvbdotnet.com
www.functionx.com
www.devaricles.com
www.dotnetspider.com
www.developerfusion.com
http://www.wpftutorial.net/HelloWPF.html
15ITU502 Computer Networks

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Scope
The students will gain a broad knowledge of the protocols used in various types of computer networks. It gives an introduction to the area of computer networks, with emphasis on the range of communication protocols utilized.

Objectives
- Provide a good understanding of the electrical characteristics of digital signals and the basic methods of data transmission.
- Introduce the concept of communication protocols and give an overview of Data Communication Standards.
- Explore the concept of Open Systems, giving an overview of Transport and Application Support Protocols.

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V

Text Book
References


Web Sites
www.mhhe.com/engcs/compsci/forouzan/
www.amazon.com/Data-Communications-Networking-Behrouz-Forouzan/dp/0072923547
highered.mcgraw-hill.com/sites/0072515848/information_center_view0/ -
Scope
Understand the fundamental Software engineering Concepts like Analyzing, coding, and Testing. Become a good Project Manager or Team leader in software development industry

Objectives
This course should help to understand theories, methods, and technologies applied for professional software development. A general introduction to the field of software engineering with a main focus on obtaining an understanding of what it means to do software engineering and on reflecting on alternative methods and approaches. Learn the behavior and flow of the software.

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V

Text Books
Unit-4:- 357-383 Unit-5:- 394-404, 406-411 ,420-441,745-750]

New Delhi.[Unit-1:-27-32,87-101,Unit-3 :-210,217,Unit-4:-385- 400 Unit-5:- 466]

References
New Delhi.


Delhi.[Unit-1:- 51-54,60-64].

Daniel Hoffman and Paul Strooner, 1995, Software Design Automated Testing and

Web Sites
www.bleading-edge.com
www.astrainfotech.com
www.edistalearning.com
www.indiaedu.com
www.claensoft.com
15ITU504  Operating Systems

Scope
The students gains the knowledge and ability have a basic idea about the operating systems, techniques involved in memory, device and Process management of Microsoft Windows and LINUX environment

Objectives
This course provides the overview of computer system and the operating system, the concepts of process management, memory management, storage management, protection and security issues, and distributed systems

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V

Text Book

References


**Web Sites**

www.webopedia.com
searchwindowsserver.tech.target.com
www.ghu.org
www.computerhope.com
www.answers.com
www.osdata.com
1. Write a VB.NET program to calculate Simple interest and compound Interest
2. Write a VB.NET program to implement Calculator.
3. Write a VB.NET program to implement Notepad
4. Write a VB.NET program to draw several shapes and fill with color.
5. Write a VB.NET program to perform the following in list box
   a) Add an item
   b) Delete an item
   c) List count
   d) Clear the List
6. Write a program to calculate the total marks of the student and print the grades
7. Write a VB.NET Program to implement Employee Payroll System.
8. Write a VB.NET program to create and manipulate a File.
9. Write a Program to implement a Web Browser
10. Write a program to maintain the details of doctors in a hospital with their specialization.
11. Write a program to animate the picture using Timer Control.
12. Write a program to move the object from one location to another. Change the color and size of object at different time interval.
13. Write a program to place ten pictures in the list box. Using timer control take the picture from List box and change the form background after specific time interval.
14. Write a program to implement speaking program. Get the text input from the user and convert into voice.
15. Write a program to implement chatting.
Scope
The students gain knowledge on Oracle database architecture and how its components work and interact with one another. Use performance monitoring, database security, user management and backup/recovery techniques.

Objectives
- Install the Database and Back up and recover data.
- Administer users and manage data.
- Transport data between databases and configure the network.
- Optimize schemas, tables, indexes and views
- manage database services and clients
- Take backup and perform recovery.

UNIT I
Oracle DBA’s: The Oracle DBA’s Role- Different DBA Job Classifications- Types of Databases, Oracle Database 10g Architecture: Oracle Database Structures- Oracle Processes- Oracle Memory Structures-Oracle Database Transaction.
Creating an Oracle Database: Create the Database- Creating the parameter file- Creating a New Database- Using a server parameter File(SPOOL)- Starting Up and Shutting Down the Database from SQL * Plus.

UNIT II

UNIT III
Connectivity and user Management: Using SQL * Plus and iSQL*Plus-Loading and Transforming Data - Using Data Pump Export and Import- Managing the operational Oracle Database: Managing and Monitoring the operational Database- Oracle Enterprise Manager:

UNIT IV

UNIT V
Backing up Databases: Examining the Flash Recovery Area –The RMAN- Control File- Backup Tool-User Managed Backups- Database Corruption Detection- Enhanced Data Protection For Disaster Recovery-Database Recovery
Text Books


References
Scope
Possess knowledge of the concepts and terminology associated with database systems, statistics, and machine learning. It is used to gain experience of doing independent study and research.

Objectives
- Learn Multidimensional schemas suitable for data warehousing
- Understand various data mining functionalities
- Inculcate knowledge on data mining query languages.
- Know in detail about data mining algorithms

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V
**Text Books**
Margaret H. Dunham, 2003, Data mining introductory and advanced topics, Pearson education.


Jiawei Han, Micheline Kamber, Jian Pei, 2012, Data Mining: Concepts and Techniques: Concepts and Techniques, Morgan Kaufmann Publishers

**References**

Alex Berson, Stephen J. Smith, 2001, Data warehousing, data mining, & OLAP, TMCH.

Jiawei Han & Micheline Kamber, 2001, Data mining Concepts & Techniques, Academic press.
Scope
Businesses are now aware of the large volumes of data that they generate in their day-to-day transactions. The massive volume of BigData and its unstructured format make it difficult to analyze. Hadoop brings the ability to cheaply process large amounts of data, regardless of structure. Knowledge about BigData Analytics on Hadoop will also prove to be a huge Resume builder for Students who are aiming to work in the IT Industry.

Objectives
- To explore the fundamental concepts of big data analytics
- To learn to analyze the big data using intelligent techniques.
- To understand the various search methods and visualization techniques.
- To learn to use various techniques for mining data stream.
- To understand the applications using Map Reduce Concepts.

UNIT I

UNIT II

UNIT III
Hadoop: History of Hadoop- The Hadoop Distributed File System – Components of Hadoop- Analyzing the Data with Hadoop- Scaling Out- Hadoop Streaming- Design of HDFS-Java interfaces to HDFS- Basics-Developing a Map Reduce Application-How Map Reduce Works-Anatomy of a Map Reduce Job run-Failures-Job Scheduling-Shuffle and Sort – Task execution- Map Reduce Types and Formats- Map Reduce Features

UNIT IV

UNIT V
Frameworks: Applications on Big Data Using Pig and Hive – Data processing operators in Pig – Hive services – HiveQL – Querying Data in Hive - fundamentals of HBase and ZooKeeper - IBM InfoSphere BigInsights and Streams. Visualizations - Visual data analysis techniques, interaction techniques; Systems and applications
Text Books


References.

Scope
It provides intranet and internet relationships and discuss the enabling technologies for e-Business platform.

Objectives
- Able to share and view information within the organization
- People have access to the intranet all the time.
- Promote fundamental concepts within the company over intranet
- Staff can communicate with other staff members without leaving their desk.
- Cost effective, saves money - this is one of the greatest benefits of the intranet.
- Messages, event and information can be placed on the intranet as they are quick. This saves time.

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V
**Text Book**
David Garrett, 1998, Intranet Unleashed, 2nd Edition, Techmedia publication, New Delhi.[Unit-I(3-220), Unit-II(299-390), Unit-III(393-499), Unit-IV(513-698), Unit-V(701-802)]

**References**

Scope
It presents artificial intelligence as a coherent body of ideas and methods to acquaint the student with the basic programs in the field and their underlying theory. The course also provides the student with a working knowledge of designing an expert system and applying expert system technology in designing and analyzing engineering systems.

Objectives
The objective of this course is to provide the student with an overview of topics in the field of artificial intelligence (AI).
- List current useful real-world applications of AI.
- Implement state-space search algorithms for a variety of problems.
- Solve constraint programming problems.
- Infer new information from provided knowledge.
- Use planning algorithms to find optimal solutions.
- Solve problems with noise and uncertainty using probabilistic techniques.

UNIT I
What is Artificial Intelligence?: The AI Problems - The Underlying Assumption - What is an AI Technique? - The Level of the Model - Criteria for Success.

UNIT II
Heuristic Search Techniques: Generate-and-Test - Hill Climbing - Best-First Search - Problem Reduction - Constraint Satisfaction - Means-Ends Analysis

UNIT III

UNIT IV

UNIT V

Text Books


Eugene Charniak, Drew McDermott, 1998, Introduction to Artificial Intelligence, Addison-wesley.(Unit IV)


Avron Barr, Edward A. Feigenbaum, 1986, The Handbook of Artificial Intelligence, Addison-Wesley Publishing Company(Unit V)

References

Scope
Acquire basic knowledge on Multimedia devices. Understand current trends in multimedia by experiencing a variety of applications and development packages.

Objectives
- This course in curriculum is an introduction to the multimedia and its applications.
- This course enables students to understand how the web pages are designed interactively.
- How to critically evaluate website quality, learn how to create and maintain quality web pages learn to create and manipulate images.
- To gain the skills and project-based experience needed for entry into web design and development careers.

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V
Text Books

References
1. Change a Shape to Another Shape. (Shape Animation)
2. Create a Man to walk with the help of Key Frame Animation.
3. Change the Colors of an object with the help of Animation.
4. Draw a Bird with tools and make it fly with key Frame Animation.
5. Create a Shining Stores with the help of Movie Clip.
6. Create an animation to represent a growing moon using frame by frame animation.
7. Create an animation to bounce a ball on steps.
8. Simulate movement of a cloud.
9. Create Morphing between two images.
10. Create an Action script to execute for a event.
11. Create Water Drops.
12. Animate Plane Flying with the Clouds.
15. Given a picture of a flower with a background, Extract the flower and organize on a different background.
16. Display the given picture through your name using mask.
Scope
Design, analyze, and program parallel object-oriented systems. Define terminology commonly used in parallel computing, such as efficiency and speedup.

Objectives
- Describe different parallel architectures, inter-connect networks, programming models and algorithms for common operations such as matrix-vector multiplication.
- Given a problem, develop an efficient parallel algorithm to solve it.
- Given a parallel algorithm, analyze its time complexity as a function of the problem size and number of processors.
- Given a parallel algorithm, an input to it, and the number of processors, show the steps performed by that algorithm on that input.

UNIT I

UNIT II

UNIT III
Parallel programming languages: programming parallel processes-an illustrative example-a sample application-FORTRAN 90-Fortran 90 programmer’s model-Fortran 90 language features. nCUBE C: the run-time model-extensions to the c language-sample program-OCCAM programmer’s model-language constructs-sample program-CLINDA-programmer’s model – language constructs-sample programs

UNIT IV
Elementary parallel algorithms-classifying MIMD algorithms-reduction: hypercube SIMD model shuffle-exchange SIMD model-2-D mesh SIMD model-UMA multiprocessor model Matrix multiplication-sequential matrix multiplication-algorithms for multiprocessors

UNIT V
Text Book

References

Scope
State the basic concepts in information security, including security policies, security models, and security mechanisms. Analyze common vulnerabilities in computer programs, including buffer overflow vulnerabilities, time-of-check to time-of-use flaws, incomplete mediation.

Objectives
- To provide students with basic concepts in information system and the benefits with these systems in modern society
- To differentiate between data, information, and knowledge
- To understand systems definition, systems requirements, and information needed for decision maker
- To understand several requirement and operations that the analyst needed to analyze, design, and implement the systems in what is called system development life cycle (SDLC)

UNIT I

UNIT II
SECURITY INVESTIGATION: Need for Security, Business Needs, Threats, Attacks, Legal, Ethical and obstacles to security, Ten steps to building a secure organization.

UNIT III

UNIT IV

UNIT V

Text books

References

Scope
Apply a variety of agile tools and techniques to provide a guidance and decision making framework for self-organizing Agile teams to ensure their continuous alignment to organizational goals.

Objectives
- To learn the fundamental principles and practices associated with each of the agile development methods;
- To learn how agile methods scale to large and distributed projects, including the role of systems engineering. And, to learn the essentials of collaboration as they apply to agile methods.
- To perform in-depth explorations into aspects of agile development that are particularly relevant to each student through detailed discussion sessions.

UNIT I

UNIT II

UNIT III

UNIT IV
UNIT V

Text Books


References
Scope
Build an understanding of the fundamental concepts of computer networking. Allow the student to gain expertise in some specific areas of networking such as the design and maintenance of individual networks.

Objectives
- Familiarize the student with the basic taxonomy and terminology of the computer networking area.
- Introduce the student to advanced networking concepts, preparing the student for entry Advanced courses in computer networking.
- Understand various transmission media, their comparative study, fiber optics and wireless media

UNIT I

UNIT II

UNIT III

UNIT IV
BOOTP - DHCP – Address Discovery and Binding. DNS – Name Space – DNS in Internet – Resolution – Resource Records.

UNIT V

Text Book

References


**Web Sites**
- en.wikipedia.org/wiki/Internet_protocol_suite
- www.yale.edu/pclt/COMM/TCPIP.HTM
- www.w3schools.com/tcpip/default.asp
Scope
Acquire knowledge on how XML is currently being used in various application areas
Know how to parse and transform XML documents via tools and through programming APIs

Objectives
- Architect J2EE applications using industry-recognized best practices
- Integrate your J2EE applications with external systems
- Identify and resolve J2EE security issues
- Plan for high performance and scalability

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V

Text books

Dreamtech Software Team, 2007 , Java server programming (J2EE 1.4) Black Book, Kogent Solutions Inc.

Reference
James McGoven, Rahim Adatis & Group, 2006, J2EE 1.4 Bible, Dreamtech Publishing.
Scope
The importance of intellectual capital, combined with its ethical management and exploitation within organizations. The importance of relevant technologies, combined with human resource management strategies, change management and organisational culture as an integral part of successful information and knowledge management.

Objectives
- To know the fundamentals of Knowledge Management and its applications.
- To understand the basics of Information Security
- To know the legal, ethical and professional issues in Information Security
- To know the aspects of risk management

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V

Text Books

References

Scope
Analysis of computer and communication systems using a variety of modelling paradigms such as simulation. The ability to create simulation models of various types.

Objectives
This subject provides students with
- The basic system concept and definitions of system;
- Techniques to model and to simulate various systems;
- The ability to analyze a system and to make use of the information to improve the performance.

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V
Text Books

Narsingh Deo, 1979, System Simulation with Digital Computer, Prentice Hall of India.


References
