G.T.N. ARTS COLLEGE(Autonomous), DINDIGUL

SYLLABUS FOR B.Sc., (Computer Science) UNDER CBCS

(With effect from the academic year 2017 – 2018)

1. OBJECTIVE

The Syllabus for B.Sc., Computer Science degree under semester system has been designed on the basis of Choice Based Credit System (CBCS) , which would focus on innovative programmes and create computer professionals. It will effect from June 2017 onwards.

2. ELIGIBILITY:

A pass in +2 examination conducted by the Board of Higher Secondary Education, Government of Tamilnadu with Physics & Mathematics OR any other examination accepted by the Governing Body, as equivalents thereto are eligible to join this course.

3. DURATION OF THE COURSE:

The students who are joining the B.Sc., (Computer science) degree shall undergo a study period of three academic years – Six semesters.

4. SUBJECTS OF STUDY AND SCHEME OF EXAMINATIONS :

The subjects offered in major Computer Science for six semesters and the scheme of examinations are given .

5. QUESTION PAPER PATTERN :

The Internal and External marks is 25 : 75

EXTERNAL:

The pattern of Question Paper will be as follows:

Time: 3 Hours Max Marks: 75

SECTION – A [10 x 1 = 10 marks]

Question No: 1 to 10

1. Two questions from each unit

2. Four choices in each question

3. No ‘none of these ‘choice

SECTION – B [5 x 7 = 35 marks]

Question No: 11 to 15

1. Answer all questions choosing either (a) or (b)

2. Answers not exceeding two pages

3. One question from each unit

SECTION – C [3 x 10 = 30 marks]

Question No: 16 to 20

1. Answers not exceeding four pages

2. Answer any three out of five questions

3. One question from each unit

INTERNAL:

The pattern for internal valuation may be

1. Two tests – 15 marks each: average 15 marks

2. Group Discussion / Seminar / Quiz – 5 marks

3. Two Assignments – 5 marks each: average 5 marks

4. Third test may be allowed for absentees of anyone of the two tests

5. For Quiz, two quizzes should be conducted

Blue Print of the Question Paper (External) – Core Subjects

Maximum Marks: 75

Sections	Types of questions	No. of questions	No. of questions to be answered	Marks for each question	Total Marks
A	Multiple Choice : Two questions from each unit	10	10	1	10
B	Not exceeding two pages (either or type) : One question from each unit *	5	5	7	35
C	Not exceeding four pages (any three out of five) : one question from each unit	5	3	10	30

6. There will be one Allied subject to fulfill the course during three years.

Subject	Maximum Marks	Year of Study
Mathematics	200	I and II

The syllabus for the Allied subject can be got from the Allied Department of Mathematics.

7. PRACTICALS:

Record Note Book	: 10 marks
Internal	: 30 marks
External examination	: 60 marks
Total	: 100 marks

8. ELIGIBILITY FOR THE DEGREE:

(i) A candidate will be eligible for the B.Sc., (Computer Science) degree by completing three years (six semesters) and passing all the prescribed examinations.

(ii) A candidate shall be declared as passed the course, if he / she scored a minimum of 40 % marks in each paper of all the subjects.

Courses studied by B.Sc., Computer Science students:

(Computer Science students study Mathematics as Allied I and Allied II respectively)

B.Sc., Computer Science – Semester – I

Part	Study Component	Course Code	Credit	Hours	Internal Marks	External Marks	Total Marks
I	Tamil / Other Languages	17UTAL11	3	6	25	75	100
II	English	17UENL11	3	6	25	75	100
III	Core Course – I Programming in C	17UCSC11	4	5	25	75	100
	Core Lab – I Programming in C	17UCSC2P	3	5	40	60	100
	Allied Course - I Discrete Mathematics	17UCSA11	4	4	25	75	100
IV	Skill Based Course – I Office Automation Lab	17UCSS1P	2	2	40	60	100
	Non Major Elective – I Fundamentals of Computer	17UCSN11	2	2	25	75	100
V	Physical Education Practical	17UPEV2P					
	Total		21	30			

B.Sc., Computer Science – Semester – II

Part	Study Component	Course Code	Credit	Hours	Internal Marks	External Marks	Total Marks
I	Tamil/Other Languages	17UTAL21	3	6	25	75	100
II	English	17UENL21	3	6	25	75	100
III	Core Course - II Visual Programming	17UCSC21	4	5	25	75	100
	Core Lab – I Visual Programming	17UCSC2P	3	5	40	60	100
	Allied Course - II Operation Research	17UCSA21	4	4	25	75	100
IV	Skill Based Course -II Multimedia Lab	17UCSS2P	2	2	40	60	100
	Non Major Elective - II Introduction to Internet	17UCSN21	2	2	25	75	100
V	Physical Education Practical	17UPEV2P	1		40	60	100
	Total		22	30			

B.Sc., Computer Science – Semester – III

Part	Study Component	Course Code	Credit	Hours	Internal Marks	External Marks	Total Marks
I	Tamil/Other Languages	17UTAL31	3	6	25	75	100
II	English	17UENL31	3	6	25	75	100
III	Core Course - III Object Oriented Programming with C++	17UCSC31	4	4	25	75	100
	Core Lab - III Data Structures and C++	17UCSC3P	3	4	40	60	100
	Core Course - IV Data Structures and Computer Algorithm	17UCSC32	4	4	25	75	100
	Allied Course - III Digital Principles and Computer Organization	17UCSA31	4	4	25	75	100
IV	Skill Based Course -III Web Design Lab	17UCSS3P	2	2	40	60	100
	Total		23	30			

B.Sc., Computer Science – Semester – IV

Part	Study Component	Course Code	Credit	Hours	Internal Marks	External Marks	Total Marks
I	Tamil/Other Languages	17UTAL41	3	6	25	75	100
II	English	17UENL41	3	6	25	75	100
III	Core Course - V Java Programming	17UCSC41	4	5	25	75	100
	Core Lab – IV Java Programming Lab	17UCSC4P	4	5	40	60	100
	Core Course - VI Operating System	17UCSC42	4	4	25	75	100
IV	Skill Based Course -IV System Software	17UCSS41	2	2	25	75	100
	Skill Based Course -V Linux Programming Lab	17UCSS4P	2	2	40	60	100
V	Extension Activities		1				100
	Total		23	30			

B.Sc., Computer Science – Semester – V

Part	Study Component	Course Code	Credit	Hours	Internal Marks	External Marks	Total Marks
III	Core Course - VII Relational Database Management Systems	17UCSC51	4	6	25	75	100
	Core Course - VIII System Analysis and Design	17UCSC52	4	5	25	75	100
	Core Lab - V Relational Database Management Systems Lab	17UCSC5P	4	5	40	60	100
	Core Lab - VI Advanced Visual Programming Lab	17UCSC5Q	4	5	40	60	100
	Elective –I 1. Advanced Visual Programming 2. Data Mining	17UCSE51 17UCSE52	4	5	25	75	100
IV	Skill Based Course -VI Quantitative Aptitude	17UCSS51	2	2	25	75	100
	Environmental Studies	17UESV51	2	2	25	75	100
	Total		24	30			

B.Sc., Computer Science – Semester – VI

Part	Study Component	Course Code	Credit	Hours	Internal Marks	External Marks	Total Marks
III	Core Course - IX Data Communication Networks	17UCSC61	4	5	25	75	100
	Core Course - X Computer Graphics	17UCSC62	4	5	25	75	100
	Core Lab - VII Python Programming Lab	17UCSC6Q	4	4	40	60	100
	Core Lab –VIII PHP Lab	17UCSC6R	4	4	40	60	100
	Elective –I 1. Android Programming 2. Python Programming	17UCSE61 17UCSE62	4	5	25	75	100
	Project Work/Viva Voce	17UCSC6P	5	5	40	60	100
IV	Value Education	17UVEV61	2	2	25	75	100
	Total		27	30			

Summary of credits and marks

Part	Study Component	Total Credits	Total Marks
I	Tamil/Other Languages	12	400
II	English	12	400
III	Core Courses , Elective Course & Allied Courses	94	2400
IV	Skill Based Courses, Non Major Elective, Environmental Studies & Value Education	20	1000
V	Physical Education & Extension Activities	2	200
Grand Total		140	4400

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SYLLABUS FOR B.Sc., (Computer Science) UNDER CBCS

(With effect from the academic year 2017 – 2018)

Semester - 1

பாடத் தலைப்பு : இக்கால இலக்கியமும் புனைக் கதையும் பருவம : 1

பாடக் குறியீடு : 17UTAL11 பகுதி : I மணிகள;/வாரம் : 6 மதிப்பீட்டு அலகு : 3

நோக்கம்

இக்காலக் கவிதை, சிறுகதை, புதின வகைகளை அறிமுகம் செய்தல், இக்கால இலக்கியங்களின் வழிப் புலனாகும் கருத்துக்களைப் பெறச் செய்தல்,பயன்பாட்டுத் தமிழ் இலக்கணத்தை அறியச் செய்தல்.

பயன்

கவிதை, சிறுகதை படைக்கும் ஆற்றல் பெறுதல், சமூக உணர்வூட்டும் படைப்புகளை அறிந்து கற்றல்.

கூறு 1 மரபுக்கவிதைகள் **20 மணிகள்**

பாரதியார் கண்ணன் என் சேவகன் - பாரதிதாசன் தொழிலாளர் விண்ணப்பம் - கவிமணி உரைக்க வேண்டும் - பட்டுக்கோட்டை கல்யாண சுந்தரம் மனிதனாக வாழ்ந்திட வேண்டும் - கண்ணதாசன் ஒரு பானையின் கதை - முடியரசன் யார் கவிஞன்.

கூறு 2 புதுக்கவிதைகள் **20 மணிகள்**

ந.பிச்சமூர்த்தி ஆத்தூரன் மூட்டை – நா.காமராசன் காகிதப்பூக்கள் – மு.மேத்தா என்னுடைய விடுமுறை நாள் – அப்துல் ரகுமான் ஆறாத அறிவு – வைரமுத்து ஐந்து பெரிது ஆறு சிறிது – மீரா நெஞ்சே! நில்! நில்! – பாலா வானம் வசப்படும் – நெல்லை ஜெயந்தா தொப்புள் கொடி – உமா மகேஸ்வரி சுயம் – ஹைக்கூ கவிதைகள்.

கூறு 3 சிறுகதைகள் **20 மணிகள்**

புதுமைப்பித்தன் சாப விமோசனம் – கு.ப.ராஜகோபாலன் உண்மைக்கதை –கு.அழகிரிசாமி ராஜா வந்திருக்கிறார் – கல்கி கடிதமும் கண்ணீரும் – ஜெயகாந்தன் யுக சந்தி – அண்ணா செவ்வாழை – கி.ராஜநாராயணன கதவு.

கூறு 4 இலக்கணம் **15 மணிகள்**

முதலெழுத்துக்கள் – சார்பெழுத்துக்கள் – மொழி முதல் எழுத்துக்கள் – மொழி இறுதி எழுத்துக்கள் – வல்லெழுத்து மிகும் இடங்கள் – வல்லெழுத்து மிகா இடங்கள்.

கூறு 5 இலக்கிய வரலாறும் பயன்பாட்டுத்தமிழும் **15 மணிகள்**

20 ஆம் நுற்றாண்டில் மரபுக்கவிதையின் வளர்ச்சி – புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும் – சிறுகதையின் தோற்றமும் வளர்ச்சியும் – மரபுப்பிழை நீக்குதல் – பிறமொழிச் சொற்களை நீக்குதல் – ஓரெழுத்து ஒரு மொழிகள் – ஒலி வேறுபாடுகளும் பொருள் வேறுபாடுகளும்

பாடநூல்

1. சுஜாதா .சா (தொ.ஆ)., 2017, இக்கால இலக்கியமும் புனைகதையும், நியூ செஞ்சுரி புக் ஹவுஸ் பிரைவேட் லிமிடெட்., சென்னை.

பார்வை நூல்கள்

1. சிவத்தம்பி.கா., 1978, தமிழில் சிறுகதையின் தோற்றமும் வளர்ச்சியும், தமிழ்ப் புத்தகாலயம், சென்னை.
2. சுப்புரெட்டியார்.ந., 1982, கண்ணன் பாட்டுத்திறன், சர்வோதய இலக்கியப் பண்ணை, மதுரை
3. தண்டபாணி தேசிகர்,ச., 2008, நன்னூல் விருத்தியுரை, சாரதா பதிப்பகம், சென்னை.

Course Title : English for Enrichment - I Semester : 1
Course Code : 17UENL11 Part : II Contact Hours /Week : 6 Credit : 3

Objectives

To teach language through Literature and to enable students to learn and imbibe good values of life gained from Literature

Unit I – Poetry **18 Hours**

1. D.H.Lawrence -Snake
2. Wole Soyinka -Telephone Conversation
3. John Milton -On His Blindness
4. Shelley - Ozymandias

Unit II – Prose **18 Hours**

1. Abraham Lincoln - Letter to his son's Headmaster
2. Stephen Leacock -With the Photographer
3. W.R. Inge -Spoon Feeding
4. Martin Luther king - I have a Dream

Unit III - Short Stories **18 Hours**

1. Rev. G.W.Cox - Orpheus and Eurydice
2. Flora Annie Steele -Valiant Vicky
3. Guy De Maupassant -The Wedding Gift
4. R. K. Narayan - Engine Trouble

Unit IV-Grammar **18 Hours**

1. Noun, Pronoun, Verb, Adjective
2. Adverb, Preposition, Conjunction, Interjection
3. Transitive & Intransitive Verb
4. Articles

Unit V-Composition **18 Hours**

1. Letter Writing
2. Precis Writing
3. Reading Comprehension
4. Advertisement

Text Book

1. Sudha, A.D., and Kavitha.R. (Eds.), (2018),"*English for Enrichment I"*. New Century Book House,Chennai.

Reference Books

1. Radhakrishna Pillai.G .,*(1990),"Emerald English Grammar and Composition*" , Emerald Publication,Chennai.
2. Green David, (2015), " *Comtemporary English Grammer Structures and Compositions* ", Macmillan India Limited, Chennai.
3. Nesfield.J.C.,(2004),"*English Grammer,Composition and usage*", Macmillan India Limited, Chennai.

Course Title : Programming in C Semester : 1
Course Code : 17UCSC11 Part : III Contact Hours /Week : 5 Credit : 4

Objectives

To enable the Students to be Familiar with the basic principles of C, decision making and branching, Arrays, Functions, Structures, Pointers and Files.

Unit I **18 Hours**

Overview of C: History of C – Importance of C – Basic structure of C Programs – Programming style –Character Set- C Tokens- Keywords & Identifiers- Constants, variables and Data types – declaration of variables – defining symbolic constants – declaring a variable as constant – overflow and underflow of data. Operators and expressions- precedence of arithmetic operators – mathematical functions.

Unit II **15 Hours**

Managing I/O operations: reading and writing a character – formatted input, output. Decision making and branching: if statement, if….else statementNesting of if ….else statement – Else if Ladder – Switch statement – the?: operator – go to statement- the While statement – do statement – The for statement – jumps in loops.

Unit III **12 Hours**

Arrays: one dimensional array – declaration, initialization – two dimensional array – multi dimensional arrays – dynamic arrays – initialization. Strings: declaration, initialization of string variables – reading and writing string
–string handling function.

Unit IV **14 Hours**

User defined functions – Structures and unions: defining a structure – declaring structure variables – accessing structure members – initialization – copying and comparing – operations on individual members – arrays of structures – arrays within structures – structures within structures – structures and functions– Unions – size of structures – bit fields.

Unit V **16 Hours**

Pointers: accessing the address of a variable – declaring, initialization of pointer variables – accessing a variable through its pointer – chain of pointers– pointer increment and scale factors – pointers and character strings– pointers as function arguments – pointers and structures. Files: defining, opening, closing a file. I/O operations on files – error handling during I/O operations –command line arguments.

Text Book

1. Balagurusamy.E., (2003), "*Programming In Ansi C*", Tata Mcgraw Hill Publications, New Delhi , Second Edition.

Reference Books

1. Ashok.N. Kamthane, (2006), "*Programming in C"*, Pearson, New Delhi, Second Edition.
2. Herbert Schildt, (2008), *"C: The Complete Reference*", Tata Mcgraw-Hill, New Delhi, Fourth Edition.
3. Shubhnandan. S., Jamual, (2014) , "*Programming in C*", Pearson Education, New Delhi, First Edition.
4. Subburaj.R., (2012) ,"*Programming in C"*, Vikas Publishing, Chennai, First Edition.
5. https://developerinsider.co/best-c-programming-book-for-beginners/

Course Title : Programming in C Lab — Semester : 1
Course Code : 17UCSC1P — Part : III — Contact Hours /Week : 5 — Credit : 3

List of Practical

1. Write a C Program to find the Sum of Digits
2. Write a C Program to check whether a given number is Armstrong or Not
3. Write a C Program to check whether a given number is Prime or Not
4. Write a C Program to generate the Fibonacci Series
5. Write a C Program to display the given number is Adam number or not
6. Write a C Program to print reverse of the given number and string
7. Write a C Program to find Minimum and maximum of N numbers using Arrays
8. Write a C Program to arrange the given number in Ascending Order
9. Write a C Program to add, subtract, and multiply two matrices
10. Write a C Program to calculate NCR and NPR
11. Write a C Program to Find the grade of a Student using else if Ladder
12. Write a C Program to implement the various String handling Functions
13. Write a C Program to Create an integer File and displaying the Even numbers only
14. Write a C Program to Calculate Quadratic Equation using Switch Case
15. Write a C Program to generate Student Mark list using Array of Structures
16. Write a C Program to create and process the Student Mark list using File
17. Write a C Program to create and process pay bill using File
18. Write a C Program to create and process Inventory Control using File
19. Write a C Program to create and process Electricity Bill using File

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Course Title : Discrete Mathematics Semester : 1
Course Code : 17UCSA11 Part : III Contact Hours /Week : 4 Credit : 4

Objectives

To enable the Students to be Familiar with the set theory, concept of logic, recurrence relations, matrix algebra and graph theory.

Unit I **12 Hours**

Set Theory: Introduction – Sets – Notation and Description of sets – Subsets – Venn-Euler Diagrams – operation on sets – Properties of set operation.

Unit II **12 Hours**

Logic: Introduction – TF Statements – Connectives – Well Formed (Statement) Formulae - Truth table of a formula – Tautology – Tautological implications and equivalence of formulae.

Unit III **12 Hours**

Recurrence Relations and Generating Functions : Recurrence – An Introduction – Recurrence Relations – Solution of finite order homogeneous (Linear) relations – Solution of non – homogeneous relations (For all the theorems consider the statements without proofs)

Unit IV **12 Hours**

Matrix Algebra: Introduction – Matrix operation – Inverse of a square matrix – Elementary operations and Rank of a matrix – Simultaneous Equations

– Eigen values and Eigenvectors.

Unit V **12 Hours**

Graphs and sub graphs: Introduction – Definition and examples – Degrees – sub graphs – matrices Trees: Introduction – Characterization of trees

.Some Applications: Shortest path problem.

Text Books

1. Venkataraman. M.K., Sridharan.N., and Chandrasekaran.N., (2009) , *" Discrete Mathematic"* , The National Publishing company, Chennai.
2. Arumugam.S., and Ramachandran.S., (2018) ,"*Introduction to Graph Theory* ", Scitech Publications Private Limited, India.

Reference Books

1. Alen Doerr and Kenneth Levesseur,(2000), "*Applied Discrete Structures for computer Science*", Galgotia Publications.
2. Veerarajan.T., (2014), "*Discrete Mathematics and its Applications*", Tata McGrawHill, Delhi.
3. Balaji.G.,(2015), "*Discrete Mathematics with Algorithms*", G.Balaji Publishers.

Course Title : Office Automation Lab Semester : 1
Course Code : 17UCSS1P Part : IV Contact Hours /Week : 2 Credit : 2

List of Practical

WORD

1. Open a word document to prepare your resume by performing the following operations
    a) Formatting the Text-Alignment & Font Style
    b) Page Setup (margin alignment, page height &width)
2. Create a student mark sheet using table, find out the total & average marks and display the result
3. Design an invitation of your course inauguration function using different fonts, font sizes, bullets and Word Art/ClipArt.
4. Mail Merge Concept
    a) Prepare an Invitation and to be sent to specific addresses in the data source.

EXCEL

1. Create suitable work sheet with student mark details and use data sort to display results and make out a suitable chart.
2. Prepare salary bill in a worksheet showing Basic pay, DA, HRA, Gross Salary, PF, Tax and Net Salary using suitable Excel Functions.

POWER POINT

1. Create a power point presentation to explain various aspects of your college using auto Play.
2. Create a power point presentation to explain the sales performance of a company over a period of five years. Includes slides covering the profile of the company, year wise sales And graph with gridlines, legends and titles for axes. Use Clip Art and Animation features

ACCESS

1. Create a table for storing marks of 10 Students. The fields of the table are given below: Reg.No., Name, Mark1, and Mark2, Mark3, test Average (Best Two/2), Assignment, Seminar and Total Marks (Test average + Assignment + Seminar) The fields Mark1, Mark2, Mark3 should not allow the user to enter a mark greater than 25 and should display proper message in such case, Similar constraint for the field Assignment‘is 5 marks and for the field Seminar, it is 10marks
2. Create a table showing names of authors of at least 10 different books, title of books, the prices of these books, name of publishers and year of publication. Also create Select, Action and Cross-tab queries to display the records from this table meeting the criteria used in these queries
3. Create a form to enter the data directly into this form. The fields required are: Basic Pay, DA, HRA, Gross Salary, PF, Income Tax and Net Salary.
4. Create a report that displays the customer name, address, phone number, item code, product quantity of the customers whose orders have been pending for over a month

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Course Title : Business Accounting Semester : 1

Course Code : 17UCON11/17UCCN11 Part : IV Contact Hours /Week : 2 Credit : 2

Objectives

To familiarize the non-commerce students about the basics of accounting concepts, principles and conventions and to make the students to know about the preparation of Journal, Ledger, Trial Balance and Balance Sheet

Unit I **6 Hours**

Introduction – Book Keeping – Accountancy – Differences – Double Entry System – Merits and Limitations – Differences between Single Entry and Double Entry System – Classification of Accounts – Rules – Users of Accounting information.

Unit II **6 Hours**

Books of Prime Entry – Accounting Equation – Journal – Advantages – Ruling (Simple Problems) .

Unit III **6 Hours**

Subsidiary Books – Objectives – Advantages – Purchases Book – Sales Book – Returns Books – Cash Book – (Simple Problems) Difference between Trade Discount and Cash Discount.

Unit IV **6 Hours**

Books of Final Entry – Ledgers – Advantages – Ruling – (Simple Problems) – Trial Balance – Advantages – Difference between Trial Balance and Balance Sheet – Preparation of Trial Balance from given Ledger Balances.

Unit V **6 Hours**

Final Accounts of Sole Trading Concerns – Adjustments : Outstanding Expenses – Prepaid Expenses – Closing Stock – Depreciation – Bad debts – (Simple Problems) – Cost of Goods Sold.

Text Book

1. Inbalakshmi. M., (2015) , *"Business Accounting"*, Kalyani Publishers, Ludhiana.

Reference Books

1. Reddy.T.S., & Murthy.A., (2016), *"Financial Accounting"*, Margham Publications, Chennai.
2. Tulsian. P.C., (2015) ,*"Financial Accounting"*, Pearson Education, New Delhi, Seventh Edition.
3. Jain. S.P., Narang. K.L., (2016) **,"***Advanced Accountancy"*, Kalyani Publishers, Ludhiana.

Note:

40% Theory and 60% Problems

Semester- 2

பாடத் தலைப்பு : இடைக்கால இலக்கியமும் புதினமும் பருவம்: 2
பாடக் குறியீடு : 17UTAL21 பகுதி : I மணிகள் /வாரம் : 6 மதிப்பீட்டு அலகு : 3

நோக்கம்

தமிழில் உள்ள பக்தி இலக்கிய வகைமைகளையும் சிற்றிலக்கிய வகைமைகளையும் அறிமுகம் செய்தல், புதின இலக்கியங்களை மாணவர்கள் அறிந்துகொள்ளச் செய்தல், சொல் இலக்கணத்தை உணர்த்துதல்

பயன்

.பக்தி சிற்றிலக்கியங்களால் காணலாகும் கவித்துவத்தையும்,சமூகமேம்பாட்டுக் கருத்துக்களையும் அறிந்துகொள்ளச் செய்தல், .புதினஇலக்கியத்தைஅறிந்துகொள்ளுதல், படைப்பாற்றல் திறனைவளர்த்தல்

கூறு 1 பக்தி இலக்கியங்கள் **25 மணிகள்**

திருஞானசம்பந்தர் தேவாரம் நமச்சிவாயத் திருப்பதிகம் (1 – 5 பாடல்கள்) – திருநாவுக்கரசர் தேவாரம் திருவிடைமருதூர் பதிகம் (தேர்ந்தெடுக்கப்பட்ட 5 பாடல்கள்) – சுந்தரர் தேவாரம் திருச்சோற்றுத்துறை பதிகம் (1 - 5 பாடல்கள்) – மாணிக்கவாசகர் திருச்சாழல் (1- 5 பாடல்கள்) – திருமங்கைஆழ்வார் பெரியதிருமொழி (1 – 5 பாடல்கள்) – ஆண்டாள் நாச்சியார் திருமொழி திருமணக்கனவு (1 - 5 பாடல்கள்) – திருமூலர் திருமந்திரம் (தேர்ந்தெடுக்கப்பட்ட 5 பாடல்கள் தாயுமானவர் பராபரக்கண்ணி (1 - 5 பாடல்கள்) – சிவவாக்கியார் சிவவாக்கியார் பாடல்கள் (தேர்ந்தெடுக்கப்பட்ட 5 பாடல்கள்).

கூறு 2 சிற்றிலக்கியங்கள் **20 மணிகள்**

தமிழ்விடுதூது பா.எண். 35 - 44 வரை உள்ள 10 பாடல்கள் – கலிங்கத்துப்பரணி காடுபாடியது (1 - 5 பாடல்கள்) – திருக்குற்றாலக் குறவஞ்சி நாட்டு வளம் கூறுதல் (1- 5 பாடல்கள்) – முக்கடற் பள்ளு பள்ளியர் ஏசல் (பா.எண். 162 -166 5 பாடல்கள்) – மதுரைமீனாட்சியம்மை பிள்ளைத் தமிழ் வருகைப் பருவம் (பா.எண். 61,63 2 பாடல்கள்).

கூறு 3 புதினம் **15 மணிகள்**

சூர்யகாந்தன் - பூர்வீகபூமி

கூறு 4 இலக்கணம் **15 மணிகள்**

நான்குவகைச் சொற்கள் - வேற்றுமைகள் - தொகைநிலைத் தொடர் -தொகா நிலைத் தொடர் - வினாவிடை வகைகள்

கூறு 5 இலக்கியவரலாறும் பயன்பாட்டுத் தமிழும் **15 மணிகள்**

பக்தி இலக்கிய வரலாறு – சிற்றிலக்கியவரலாறு – புதினத்தின் தோற்றமும் வளர்ச்சியும் – கடிதம் வரைதல்

பாட நூல்

1. சாந்தினி .கி (தொ.ஆ)., 2017, இடைக்கால இலக்கியமும் புதினமும் , நியூ செஞ்சுரி புக் ஹவுஸ் பிரைவேட் லிமிடெட், சென்னை.

பார்வை நூல்கள்

1. கதிர்முருகு, 2007 முக்கூடற்பள்ளு, சாரதாபதிப்பகம், சென்னை.
2. சூரியகாந்தன், 2013 பூர்வீகபூமி, நியூசெஞ்சுரிபுக் ஹவுஸ், சென்னை.
3. க.தண்டபாணிதேசிகர், 2008 நன்னூல் விருத்தியுரை, சாரதாபதிப்பகம், சென்னை

Course Title : English for Enrichment - II Semester : 2
Course Code : 17UENL21 Part : II Contact Hours /Week : 6 Credit : 3

Objectives

To teach language through Literature and to enable students to learn and imbibe good values of life gained from Literature

Unit I Poetry **18 Hours**

1. Rupert Brooke - The Great Lover
2. Robert Frost - Stopping by Woods on a Snowy Evening
3. Emily Dickinson - Because I Couldn't Stop For Death
4. Alice Walker - Gift

Unit II Prose **18 Hours**

1. Mark Twain - Monday Morning
2. Jawaharlal Nehru - Our Universities
3. G.B.Shaw - How I Become A Public Speaker
4. Khushwant Singh - The Portrait of the Lady

Unit III One Act Play **18 Hours**

1. RabindranathTagore - Chitra
2. Saki - The Death Trap
3. Wole Soyinka - The Strong Breed
4. Ronald Gow - Sheriff's Kitchen

Unit IV Grammar **18 Hours**

1. Tense
2. Voice
3. Degrees of Comparison
4. Question Tag

Unit V Composition **18 Hours**

1. Expansion of Proverb
2. Dialogue Writing
3. Note Making
4. Writing Soft and Hard News

Text Book

1. Remya. I.P., and Lakshmi Priya.N., (2018),"*English for Enrichment II"*, New Century Book House, Chennai.

Reference Books

1. Murphy, Raymon,(1985), *"English Grammar in Use",* Cambridge University Press, Cambridge.
2. Green David, (2015),"*Comtemporary English Grammer Structures and Compositions"* , Macmillan India Limited,Chennai.
3. Nesfield.J.C., (2004),"*English Grammer,Composition and usage"*, Maemillen India Limited,Chennai.

Course Title : Visual Programming Semester : 2
Course Code : 17UCSC21 Part : III Contact Hours /Week : 5 Credit : 4

Objectives

To enable the Students to be Familiar with the basic principles of Visual Basic, decision making and branching, Functions, Procedures, standard controls, Graphics and Files.

Unit I **20 Hours**

Starting a new project- the properties of window- common form properties – color properties – making a form responsive- printing a visual representation of a form – typos- create stand-alone windows programs- the toolbox-creating controls-the name property-properties of command buttons-simple event procedures for command buttons- access keys- image controls- textboxes- labels- message boxes.

Unit II **16 Hours**

Statements in visual basic- variables- setting properties with code- data types- working with variables- more on strings- more on numbers- constants- input boxes- displaying information on a form- the format function- picture boxes- rich text boxes- the printer object- determination loops-indeterminate loops- making decisions- select case- nested if-the Go To.

Unit III **12 Hours**

String functions- numeric functions-date time functions-financial functions- Function procedures- sub procedures- uses of procedures and functions- using the object browser to navigate among your sub programs- list: one dimensional array-arrays with more than one dimension-using list and array with functions and procedures-new array based string- records.

Unit IV **12 Hours**

With statement- enums- control arrays- list and combo boxes- flex grid control- code modules: global procedures- the do event functions and sub main- accessing windows form-error trapping-creating an object in visual basic.

Unit V **15 Hours**

Fundamentals of graphics- screens- scales- line and shape control- graphics via code- line and boxes-circles-ellipse-pie chart. Mouse events procedures- dragging and dropping operations- File commands- sequential files- random access files- binary files-sharing files- file system controls-clip board.

Text Book

1. Gary Cornell,(1999), "*VisualBasic6 from the ground up*", Tata McGraw Hill, New Delhi

Reference Books

1. Peter Norton's and Michael Groh, (1998)," *Guide to Visual Basic 6*", Techmedia, New Delhi.
2. Mandeep.S.Bhatia, (2014), "*A Beginner's guide to Visual Basic6"*, Khanna Book Publishing, New Delhi.
3. Steven Holzner, (2000), "*Visual Basic 2005 Black Book"* , Dream Tech Press, New Delhi .

Course Title : Visual Programming Lab			Semester : 2
Course Code : 17UCSC2P	Part : III	Contact Hours /Week : 5	Credit : 3

List of Practical

1. Write a Vb program to check whether a given number is
    I) Prime or not
    II) Armstrong or not
2. Write a Vb program to perform
    I) Reverse the String
    II) Length of the String
3. Write a Vb program to find
    I) Current date and time
    II) Day of the given date
4. Write a Vb program for print multiplication table.
5. Write a Vb program for Creation of Arithmetic calculator
6. Write a Vb program using list and combo boxes.
7. Write a Vb program for Preparation of questionnaire
8. Write a Vb program to create a mouse down event 9 Write a Vb program to draw geometric shapes.
10. Write a Vb program to create color mixture using scroll bar controls.
11. Write a Vb program to change text attributes.
12. Write a Vb program using timer control to animate an object.
13. Write a Vb program to load a picture using file system controls.
14. Write a Vb program using textbox to validate its content
15. Write a Vb program to create a menu with simple file and edit options using common dialog control
16. Write a Vb program for sequential Reading and Writing
17. Write a Vb program for using data control to connect MsAccess.

Course Title : Operation Research Semester : 2
Course Code : 17UCSA21 Part : III Contact Hours /Week : 4 Credit : 4

Objectives

To enable the Students to be Familiar with the operation research and its scope, about LPP and its solution methods, simplex method, assignment problem, transportation problem and its solution.

Unit I **12 Hours**

Origin and Development of OR – Nature and features of OR – Scientific Method in OR-Modeling in Operation Research – Application of OR.

Unit II **12 Hours**

Formulation of LPP - Mathematical Formulation – Solution of LPP – Graphical Method.

Unit III **12 Hours**

Simplex Method: Computational procedure –Big M Method – Two phase Method.

Unit IV **12 Hours**

Transportation problem: Mathematical formulation of Transportation problem – Method for finding IBFS for the Transportation problem – Degeneracy of TP.

Unit V **12 Hours**

Assignment Problem: Mathematical formulation of assignment problem - Solution to Assignment problem.

Text Books

1. Kanthiswarup, Gupta.P.K., Man Mohan,(2011), "*Operations Research*", Sultan Chand & Sons.
2. Arumugam .S., & Thangapandi Issac,(2015), "*Topics Operation Research,Linear Programming"*, New Gamma Publishing House (India) Private Limited.

Reference Books

1. Sharma.S.D.,(2003), "*Operations Research*", Kedar Nath Ram Nath & Company.
2. Gupta.R.K.,(1992), "*Operations Research*", Krishna Prakashan Media Private Limited.
3. Sharma J.K.,(2007),"*Operations Research Theory and Applications*", Macmillan, Fourth Edition.

Course Title : Multimedia Lab			Semester : 2
Course Code : 17UCSS2P	Part : IV	Contact Hours /Week : 2	Credit : 2

List of Practical

PHOTOSHOP

1. Design an image by cutting the objects from 3 files and organize them in a single file and apply feather effects.
2. Design an image by applying Mirror effect.
3. Design an image by extracting flower only from given photographic image.
4. Design an image by applying Text and Transform Tools.
5. Design an image by using patch or healing brush tool to remove damaged parts of an image.
6. Design an image by applying Lighting effect Filter.
7. Design an image by applying Blending options to make a text effect.
8. Design an image by applying rainbow effect.
9. Design an image by applying text masking effect.
10. Design college ID card using any tools.

FLASH

1. Basic tools used in Flash.
2. Develop a Flash application using motion tween.
3. Develop a Flash application using shape tween.
4. Develop a Flash application for ball bouncing using motion guide path.
5. Develop a Flash application for masking effect.
6. Develop a Flash application using layer based animation.
7. Develop a Flash application to represent the growing moon.
8. Write action script to play and stop an animation.

Course Title : Advertising and Salesmanship Semester : 2
Course Code : 17UCON21 Part : IV Contact Hours /Week : 2 Credit : 2

Objectives

To enable the students to know the fundamentals of advertising and salesmanship and to gain an insight on the nature of advertising and salesmanship

Unit I **6 Hours**

Meaning of advertising – Characteristic Features of Advertising – Nature and Scope of Advertising – Benefits or Advantages of Advertising – Criticisms of Advertising – Is Advertising an Economic Waste? – Difference between Advertising and Salesmanship.

Unit II **6 Hours**

Advertising Media – Indoor and Outdoor Advertising – Advertising agency – Role – Importance.

Unit III **6 Hours**

Personal Selling – Definition – Salesmanship – Definition – Features – Objectives – Benefits – Criticisms against Salesmanship.

Unit IV **6 Hours**

Qualities of a successful salesman; Physical, Mental, Social and Moral Qualities – Other Requisites of a Salesman .

Unit V **6 Hours**

Recruitment of Salesman – Sources – Remuneration of Salesman – Methods.

Text Book

1. Inbalakshmi.M.,(2014) ,**"***Advertising and Salesmanship***"**, Kalyani Publishers, Ludhiana.

Reference Books

1. Gupta.C.B., (2014) ,"*Advertising and Personal Selling*", Sultan Chand & Sons, New Delhi.
2. Chunawalla.S.A., Sethis.K.C., (2017), "*Foundation of Advertising- Theory and Practice*", Himalaya Publishing House, New Delhi.
3. Ken Kaser, (2013), "*Advertising and Sales Promotion*", South-Western Cencgage Learning.

Semester – 3

பாடத்தலைப்பு : காப்பிய இலக்கியமும் நாடகமும் பருவம்: 3
பாடக் குறியீடு : 17UTAL31 பகுதி : I மணிகள் /வாரம் : 6 மதிப்பீடு அலகு : 3

நோக்கம்

தமிழில் உள்ள காப்பியங்களின் சிறப்புக்களை எடுத்துரைத்தல் - நாடகக்கலையை மாணவர்களுக்கு உணர்த்துதல் - யாப்பு, அணி இலக்கணங்களை மாணவர்கள் அறியும்படிச் செய்தல்.

பயன்

மாணவர்களிடம் தம் தாய் மொழியான தமிழ் மொழியின் இலக்கியம் இலக்கணத் திறனை மேம்பாடு அடையச் செய்தல் - நாடகப் படைப்பாக்கப் பயிற்சியை உருவாக்குதல் -காப்பியங்களின் உள்ளார்ந்த கருத்துக்களை அறிந்து கொள்ளுதல்.

கூறு 1 காப்பியங்கள் **30 மணிகள்**

சிலப்பதிகாரம் வழக்குரை காதை (முழுவதும்) – மணிமேகலை ஆதிரை பிச்சையிட்ட காதை (முழுவதும்) - கம்பராமாயணம் வாலி வதைப்படலம் (பா.எண்-322-365 வரை உள்ள 44 பாடல்கள்) - பெரியபுராணம் அப்பூதியடிகள் நாயனார் புராணம் (முழுவதும்)

கூறு 2 தற்கால காப்பியங்கள் **15 மணிகள்**

இயேசுகாவியம் மலைப்பொழிவு (10 பாடல்கள்) - நபிகள்நாயகக் காவியம் மதீனாக்காண்டம் (11 பாடல்கள்)

கூறு 3 நாடகம் **15 மணிகள்**

இராமசுவாமி மு., ரௌத்திரம் பழகு – சேதுபதி வைகையில் வெள்ளம் வரும் - சேதுபதி மௌனத்தின் குரலொன்று - சேதுபதி அன்பின் மெய் - சிவக்கண்ணன் குருசேத்திரங்கள் ஓய்வதில்லை.

கூறு 4 இலக்கணம் **15 மணிகள்**

பா வகைகள் வெண்பா, ஆசிரியப்பா, வஞ்சிப்பா, கலிப்பா – அணிகள் உவமை உருவகம்- தற்குறிப்பேற்றம்- வேற்றுமை- பிறிதுமொழிதல்- வஞ்சப்புகழ்ச்சி- சிலேடை

கூறு 5 இலக்கிய வரலாறும், பயன்பாட்டுத்தமிழும் **15 மணிகள்**

ஐம்பெருங்காப்பியங்கள் – ஐஞ்சிறுகாப்பியங்கள் – நாடகத்தின் தோற்றமும் வளர்ச்சியும் – நாடகத்தின் வகைகள் – நாடகம் படைத்தல்.

பாட நூல்

1. மாசிலாதேவி .ச. (தொ.ஆ)., (2018), "*காப்பிய இலக்கியமும் நாடகமும்*" , நியூ செஞ்சுரி புக் ஹவுஸ் பிரைவேட் லிமிடெட், சென்னை.

பார்வை நூல்கள்

1. இராமசுவாமி.மு, (2015), ''*இரௌத்திரம் பழகு*'', நியூ செஞ்சுரி புக் ஹவுஸ், சென்னை.
2. சிவக்கண்ணன்.அ, (2007)இஆறு நாடகங்கள், பாவை பப்ளிகேஷன்ஸ், சென்னை.
3. சுப்பிரமணிய தேசிகர் (உ.ஆ),(1966)இ தண்டியலங்காரம் கழக வெளியீடு, திருநெல்வேலி.
4. சேதுபதி, (2007)இவைகையில் வெள்ளம் வரும், பாவை பப்ளிகேஷன்ஸ், சென்னை.
5. வரதராசன் மு.,(2007)இ தமிழ் இலக்கிய வரலாறு, சாகித்ய அகாதெமி, புதுடெல்லி.
6. வேங்கடசாமி நாட்டார் ந.மு,(உ.ஆ), (2006)இயாப்பெருங்கலக்காரிகை, சாரதா பதிப்பகம்,சென்னை.

Course Title: English for Enrichment - III Semester : 3

Course Code : 17UENL31 Part : II Contact Hours /Week : 6 Credit : 3

Objectives

To teach language through Literature and to enable students to learn and imbibe good values of life gained from Literature

Unit I **18 Hours**

Romantic Plays

1. As you like it : Cartons of love Act IV – Scene I
2. Merchant of Venice : Trial for a pound of flesh Act IV – Scene I

Unit II **18 Hours**

Roman Plays

3. Antony and Cleopatra : Terrifying moments of Titanic Love Act V Scene II
4. Julius Caesar : Funeral oration Act III Scene II & III

Unit III **18 Hours**

Tragedy plays

5. Macbeth : He kills sleep Act I, Scene VII & Act II Scene II
6. Othello : When the moor kills so good a wife:ActV Scene II

Unit IV **18 Hours**

Grammar

1. Sentence Improvement
2. Sentence Arrangement
3. Sentence Completion

Unit V **18 Hours**

Composition

1. E-Mail & Fax
2. Filling a bank challan
3. Attending Interview

Text Book

1. Moorthy.N., and Amardeep.V., (2018), "*English for Enrichment III*", New Century Book House, Chennai.

Reference Books

1. Nesfield.J.C., (2010), " *Manual of English Grammar and Composition",*Surjeet Publications, Delhi.
2. Shakespeare William., (2005),"*Greatest Collections of William Shakespeare",* Black Rose Publications, New Delhi.
3. Green David, (2015), " *Comtemporary English Grammer Structures and Compositions"* , Macmillan India Limited, Chennai.

Course Title : Object Oriented Programming with C++ Semester : 3
Course Code : 17UCSC31 Part : III Contact Hours /Week : 4 Credit : 4

Objectives

To enable the Students to be Familiar with the basic principles of C++ and control structures, Concept of Functions, classes, constructors, Inheritance, Pointers and streams.

Unit I **10 Hours**

Software Crisis-Software Evolution-Basic Concepts of Object-Oriented Programming-Benefits of OOP-Object-Oriented Languages-Applications of OOP- Structure of a C++ Program-Tokens - Data Types- Symbolic Constants-Type Compatibility-Declaration and initialization of Variables-Reference Variables-Operators in C++-Manipulators-Type Cast Operator-Expressions and their types-Implicit Conversions-Controls Structures.

Unit II **14 Hours**

The Main Function-Function Prototyping-Inline Functions-Function Overloading. Specifying a class-Defining Member Functions-Making an outside Function inline-Nesting of Member Functions-Private Member Functions-Array within a class-Memory Allocation for Objects-Static Data Members and Functions-Array of Objects-Objects as Function Arguments-Friendly Function-Returning Objects-Constant Member Functions.

Unit III **14 Hours**

Constructors- Parameterized Constructor-Multiple Constructors in a class- Constructors with default arguments-Dynamic Initialization of Objects-Copy Constructor-Destructors.Defining Operator Overloading-Overloading Unary Operators-Overloading Binary Operators-Overloading Binary Operators Using Friend Functions-Rules.

Unit IV **12 Hours**

Inheritance-Defining Derived Classes-Single Inheritance-Making a Private Member Inheritable-Multilevel Inheritance-Multiple Inheritance-Hierarchical Inheritance-Hybrid Inheritance-Virtual Base Classes-Constructors in Derived class-Member-Nesting classes.

Unit V **10 Hours**

Pointer to Objects-this Pointer-Pointer to Derived Classes-Virtual Functions-Pure Virtual Functions-C++ Stream Classes-Unformatted I/O Operations-Managing output with Manipulators.

Text Book

1. Balagurusamy.E., (2013), "*Object Oriented Programming with C++*", New Delhi, McGraw Hill Education (India) Private Limited, Sixth Edition.

Reference Books

1. Herbert Schildt, (1998), "*C++-The Complete Reference*" , Tata Mc Graw Hill, New Delhi.
2. Paul Deitel and Harvey Deitel, (2014), " *C++ How to Program*", Prentice Hall of India, New Delhi, Ninth edition.
3. Ashok.N.Kamthare, (2006), "*Object Oriented Programming with ANSI & Turbo C++*",Pearson Education.

Course Title : Data Structures and C++ Lab Semester : 3

Course Code : 17UCSC3P Part : III Contact Hours /Week : 4 Credit : 3

List of Practical

1. Finding area of geometric shape using function Overloading.
2. Inline Function for Simple arithmetic Operations.
3. Demonstrating the use of Pre-defined Manipulators.
4. Demonstrating the use of Friend Function.
5. Creating Students Mark list using array and objects.
6. Demonstrating Constructors.
7. Overloading the unary-Operator.
8. Demonstrating Multiple Inheritances.
9. Demonstrating Multilevel Inheritances.
10. Demonstrating the use of “this” pointer.
11. Program using Stack.
12. Program using binary search.
13. Program using Queue.
14. Program using Linked List.
15. Program using merge sort.
16. Program using Binary Tree Traversal.

Course Title : Data Structures and Computer Algorithm Semester : 3
Course Code : 17UCSC32 Part : III Contact Hours /Week : 4 Credit : 4

Objectives

To enable the Students to be Familiar with the data, fundamental of stack, queue, linked list, concepts of trees, sorting operations, algorithms and Greedy methods.

Unit I **15 Hours**

Introduction to data structure: Definitions-Data Structures-Arrays: one dimensional array-two dimensional array-special types of matrices-Linked Lists: Introduction –benefits and limitations of linked list-Types-singly linked lists-circular linked lists-doubly linked lists.

Unit II **10 Hours**

Stack: Introduction-ADT stack-implementation of stack-application of stack-Queue: Introduction- implementation of basic operations on array based and linked list based queue-circular queues.

Unit III **10 Hours**

Trees: Introduction- binary trees-representation of binary trees-binary tree traversals-recursive procedures of traversal methods-Expression trees- Threaded trees- Application of trees.

Unit IV **12 Hours**

Algorithms: Introduction: What is an Algorithm?-Algorithm Specification- Performance analysis- Divide and Conquer: General method-Binary search- Finding the maximum and minimum-merge sort-quick sort- selection- Strassen's matrix multiplication.

UNIT V **13 Hours**

The Greedy Method: General method – knapsack problem- Job Sequencing with deadlines-Minimum cost spanning trees: Prim's algorithm- kruskal algorithm-Optimal Storage on tapes- optimal merge patterns-single source shortest path.

Text Books

1. Chitra.A., and Rajan.P.T., (2006), "*Data Structures*", Vijay Nicol Imprints Private Limited.
2. Ellis Horrowitz and Sarataj Sahni," *Fundamentals of Computer Algorithms*", Golgotha Publications Private Limited, New Delhi.

Reference Books

1. Mark Allen Weiss, (1997), "*Data Structure and Algorithm Analysis in C*" , Addition Wesley Publishing Company, Second Edition.
2. Subramanyam . P.S., (2013), "*C and C++ Programming concepts and Data Structures*" , B.S. Publications.
3. Alfred.V.Aho ,John.E. Hopcraft and Jeffrey.D.Ullman, (2013), " *Data Structures and Algorithms*", Person Education, Fourteenth Impression.

Course Title : Digital Principles and Computer Organization Semester : 3
Course Code : 17UCSA31 Part : III Contact Hours /Week : 4 Credit : 4

Objectives

To enable the Students to be Familiar with the number system, data processing, various micro programmed controls, addition number system, basic organization of computer and CPU.

Unit I **10 Hours**

Number System and Code: Binary numbers System – binary to decimal – decimal to binary – hexa decimal – ASCII code – Excess-3 Code – Gray Code. Digital Logic: The Basic gates –NOT, OR, AND-Universal Logic Gates-NOR, NAND

Unit II **15 Hours**

Combinational Logic Circuits: Boolean Law and theorems – sum of product method – Truth tables to Karnaugh Map – Pairs Quads, Octets – Don't care Conditions – product of sum method – product of sum simplifications. Data Processing Circuits: Multiplexers – Demultiplexers – 1-of-16-Decoders BCD-to-Decimal Decoders – Seven segment decoders – Encoders – Exclusive-OR gates – parity generators and checkers.

Unit III **10 Hours**

Arithmetic Circuits: Binary Addition – Binary Subtraction – 2's & 1's complement representation-2's Complement Arithmetic – Arithmetic building blocks.

Unit IV **12 Hours**

Basic Computer Organization and Design: Instruction codes-Stored program organization-Computer registers and common bus system-computer instructions-Timing and control-Instruction Cycle: Fetch and Decode-Register reference instructions. Micro programmed Control.

Unit V **13 Hours**

Central Processing Unit: General registers Organization- Stack Organization-Instruction Formats-Addressing modes-Data Transfer and manipulation-program control-CISC and RISC-Parallel Processing-Pipeline-General Consideration. Input-Output Organization: Peripheral devices- I/O Interface-Memory Organization.

Text Books

1. Donald.P.Leach, Albert Paul Malvino,Goutam Saha, (2015), "*Digital Principles and Applications*" ,McGraw-Hill Education, Eighth Edition.
2. Morris Mano.M., (2007), "*Computer System Architecture*", Pearson Education, Third Edition.

Reference Books

1. Anantha Natarajan.R., (2015), "*Digital Design*", Prentice Hall of India Learning.
2. Meena.K, (2013), "*Principle of Digital Electronics*", Prentice Hall of India Learning.
3. Thomas C. Bartee, (2007), "*Digital Computer Fundamentals*", Tata McGraw Hill.
4. Rajaraman.V., and Radhakrishnan.T.,(2015), "*Computer Organization and Architecture*", Prentice Hall of India Learning,Fifth Edition.
5. Carl Hamacher Zvonko Vranesic Safwat Zaky, (2015), "*Computer Organization*", McGraw Hill Education, Fifth Edition.

Course Title : Web Design Lab Semester : 3
Course Code : 17UCSS3P Part : IV Contact Hours /Week : 2 Credit : 2

List of Practical

1. Create a simple web page using text formatted, paragraph, headings and tags.
2. Create a simple web page using list tags with attributes.
3. Create a simple web page using table tag with attributes.
4. Create a simple web page using frames.
5. Create a simple web page using HTML forms.
6. Creation of different text styles using style sheets.
7. Simple VB Script to handle mouse events.
8. Simple VB Script for process login.
9. Simple Java Script for display day of week.
10. Simple Java Script to greet the user on the time of the day.
11. Simple Java Script using timers.

Self Study Paper - I

Course Title : Armed Forces and National Integration — Semester : 3
Course Code : 17UNCV31 — Part : V — Contact Hours /Week : 4 — Credit : 2

Unit 1 Organization of NCC & Armed forces

Aims and objectives of NCC, Organization, Training and NCC song – Basic organization of Armed Forces – organization of Army – organization of infantry battalion - Badges and ranks – Task and role of fighting arms – task and role of supporting arms & services – modes of entry into army – honour and awards – concept of integrated defence staff

Unit II Military History

Biographies of renowned Generals (Cariappa/Sam Manekshaw) – Indian Army war heroes – PVCs – Study of Battles of Indo Pak war 1965, 1971 & Kargil

Unit III National integration & Awareness

Religions, culture, traditions and customs of India – National integration – importance and necessity – Freedom struggle and Nationalistic movement in India – National interests, objectives, threats and opportunities – Problems/challenges of National integration – Unity in Diversity – National integration council – images/slogans for national integration – Contribution of youth in Nation building .

Unit IV Health, Hygiene and First Aid

Structure and functioning of human body – hygiene & sanitation (personal & food hygiene) – physical & mental health – infectious & contagious diseases & its prevention – basics of home nursing & first aid in common medical emergencies – wounds & fractures – introduction to yoga & exercises

Unit V Environmental Conservation

Natural resources – water conservation & rain water harvesting – waste management – pollution control: Water, air, noise, soil – energy conservation – wild life conservation projects in India

Reference Books

1. "*National Cadet corps standing Instructions*",(2017), Volume I & II, DG NCC, Minister of Defence, Shri Sai Enterprises, New Delhi.
2. Major Ramasamy.R., "*NCC Guide*", Priya Publication, Karur – 2.
3. Lt. Col. Prasad. P.S., (2008), "*A Key to Success*" , Kerala.
4. ANO Handbook, www.nccindia.nic.in.
5. Cadets Handbook Common Subjects SD/SW.

Note: Necessary demonstration and practical training will be dealt during parade hours.

Semester - 4

பாடத் தலைப்பு : பழந்தமிழ் இலக்கியமும் உரைநடையும் பருவம்: 4
பாடக் குறியீடு : 17UTAL41 பகுதி : I மணிகள் /வாரம் : 6 மதிப்பீட்டு அலகு : 3

நோக்கம்

பழமைக்குப் பழமையாய் புதுமைக்குப் புதுமையாய் இன்றளவும் செம்மாந்து நிற்கும் சங்க இலக்கியத்தை அறிமுகம் செய்தல், தமிழ் மொழியின் சிறப்புக்களை உணர்த்தும் இலக்கியக் கட்டுரைகளை எடுத்துரைத்தல், பழந்தமிழ் மக்களின் வாழ்க்கைப் பெட்டகமான பொருள் இலக்கணத்தை உணர்த்துதல்.

பயன்

செவ்வியல் மொழியான தமிழ்மொழியின் தொன்மையினை அறிந்து கொள்ளுதல், நீதி இலக்கியங்களின் வழி மாணவர்களுக்கு அறக்கருத்துக்களை உணர்த்துதல், சங்ககால மக்களின் வாழ்க்கை ஏற்றங்களும், உயரிய பண்பாடுகளும், அன்பின் அடிப்படையில் அமைந்த மனித உறவுநெறிமுறைகளின் வழியும் மாணவர்களுக்குப் பழந்தமிழ் பண்பாட்டின் மேன்மையை உணரச்செய்தல், படைப்பாற்றல் திறனை வளர்த்தல்.

கூறு 1 **30 மணிகள்**

குறிஞ்சிப்பாட்டு முழுவதும் – நற்றிணை முல்லைத்திணைப் பாடல்கள் (பா.எண். 21, 89, 99, 139, 364) – குறுந்தொகை மருதத்திணைப் பாடல்கள் (பா.எண். 8, 31, 46, 61, 113) ஐங்குறுநூறு தாய்க்கு உரைத்த பத்து (நெய்தல்) அம்மூவனார் – கலித்தொகை பாலைக்கலி (பா.எண். 9, 11) - அகநானூறு (பா.எண். 8,122) - புறநானூறு (பா.எண். 8, 86, 182, 192, 312)

கூறு 2 **15 மணிகள்**

திருக்குறள் ஒப்புறவு அறிதல் (அறத்துப்பால்) – நாலடியார் ஈகை (அறத்துப்பால்) – பழமொழி நானூறு – கல்வி.

கூறு 3 உரைநடை (கட்டுரைத் தொகுப்பு) **15 மணிகள்**

பத்மபிரியா .மா சங்க இலக்கியங்களில் சுற்றுச்சூழல் பாதுகாப்பு – முத்தையா .ஆ தமிழ்நாட்டுக் காளை விளையாட்டும் மேல்நாட்டுக் காளைப் போரும் – முத்துக்கிருட்டின நாட்டார் சி. அறநெறி வழங்கிய அறிஞர் வித்துவான் தமிழ் – திலகவதி. இலக்கியத்தில் பெண் – ஸ்ரீதரன் என். அறிவு அற்றங் காக்கும் கருவி – முத்துலட்சுமி வீ. இலக்கியமும் கூத்தும்.

கூறு 4 இலக்கணம் **15 மணிகள்**

அகப்பொருள் அகத்திணைகள் - புறப்பொருள் புறத்திணைகள்

கூறு 5 இலக்கிய வரலாறும், பயன்பாட்டுத் தமிழும் **15 மணிகள்**

இலக்கிய வரலாறு எட்டுத்தொகை -பத்துப்பாட்டு - பதினென்கீழ்கணக்கு நூல்கள் - பயன்பாட்டுத் தமிழ் - பொதுக்கட்டுரை எழுதுவதற்குப் பயிற்சி அளித்தல்.

பாட நூல்

1. கவிதா .வீ (தொ.ஆ)., (2018), பழந்தமிழ் இலக்கியமும் உரைநடையும், நியூ செஞ்சுரி புக் ஹவுஸ் பிரைவேட் லிமிடெட்,சென்னை.

பார்வை நூல்கள்

1. அடைக்கலசாமி .எம்மார், (2011), தமிழ் இலக்கிய வரலாறு, ராசி பதிப்பகம், சென்னை-73.
2. கோவிந்தராச முதலியார் .கா.ர (உ.ஆ)., (1966), நம்பியகப்பொருள், திருநெல்வேலித் தென்னிந்திய சைவசித்தாந்த நூற்பதிப்புக்கழகம் லிமிடெட், திருநெல்வேலி-6.
3. கௌமாரீஸ்வரி .எஸ் (தொ.ஆ)., (2017), பதினெண் கீழ்கணக்கு நூல்கள் மூலமும் முறையும், சாரதா பதிப்பகம், ஜி-4, சாந்தி அடுக்ககம், 3 ஸ்ரீ கிருஷ்ணாபுரம் தெரு, ராயப்பேட்டை, சென்னை-14.
4. சாமிநாதய்யர் .உ.வே (தொ.ஆ)., (1986), பத்துப்பாட்டு மூலமும் நச்சினார்க்கினியருரையும், தமிழ் பல்கலைக்கழக மறுதோன்றி அச்சகம், தஞ்சாவூர்.

Course Title : English for Enrichment - IV Semester : 4
Course Code : 17UENL41 Part : II Contact Hours /Week : 6 Credit : 3

Objectives

To teach language through Literature and to enable students to learn and imbibe good values of life gained from Literature

Unit I **18 Hours**

R.K. Narayan: Swami and Friends

Unit II **18 Hours**

George Bernard Shaw: Arms and the Man

Unit III **18 Hours**

Word Power

1. Vocabulary
2. Choice of Words
3. Analogy Questions

Unit IV **18 Hours**

Art of Public speaking

1. Welcome Address
2. Presidential Address
3. Vote of Thanks

Unit V **18 Hours**

Writing Skills

1. Resume Writing
2. Group Discussion
3. Translation.

Text Book

1. Narayan.R .K., (2008),"*Swami and Friends*", Indian Thought Publications, Mysore.
   For Units III, IV, V: Study material would be supplied by the Department.

Reference Books

1. Nesfield.J.C., (2010), " *Manual of English Grammar and Composition",*Surjeet Publications, Delhi.
2. Murphy, Raymon,(1985), *"English Grammar in Use",* Cambridge University Press, Cambridge.
3. Green David, (2015), " *Comtemporary English Grammer Structures and Compositions"* , Macmillan India Limited, Chennai.

Course Title : Java Programming Semester : 4

Course Code : 17UCSC41 Part : III Contact Hours /Week : 5 Credit : 4

Objectives

To enable the Students to be Familiar with the basic oops concepts, controls and looping statements, Arrays, packages, Applets, multithreading, I/O and graphics.

Unit I **12 Hours**

Fundamentals of object Oriented Programming-Java evolution: java Features- how java differs from C and C++ - java and Internet – Java and World Wide Web –Web Browsers – Hardware and Software Requirements –Java Environment. Overview of Java Language: Simple Java Program-java program structure- java tokens-java statement- implementing java program-java virtual machine-command line arguments. Constants – variables-data types- declaration of variables-giving values to variables- scope of variables-symbolic constants- type casting.

Unit II **15 Hours**

Operators and Expressions-Arithmetic Expression-Evaluation of Expression-Precedence of Arithmetic Operators-Operator precedence and associatively-Mathematical Functions. Decision Making and Branching- Decision making - the? : Operator. Decision Making and Looping- Class, Objects and Methods- constructors –Methods overloading- static members-nesting of methods-Inheritance-Overriding Methods-Final Variable and Methods- Final Classes- Finalizer Methods-Abstract Methods and classes-Visibility Control.

Unit III **18 Hours**

Arrays, strings and vectors: one dimensional Arrays- creating an Array- Two dimensional Array –Strings –Vectors- Wrapper classes-Enumerated types. Interfaces: Multiple Inheritance: Defining Interfaces-extending Interfaces- Implementing Interfaces-Accessing Interface variables. Packages: Defining Interfaces-Extending Interfaces- Implementing Interfaces-Accessing interface variables. Packages.

Unit IV **15 Hours**

Multithreaded programming: creating threads- extending the thread class- stopping and blocking a thread- life cycle of a thread – using thread methods- thread exceptions-thread priority-synchronization-implementing the runnable interfaced- Managing errors and exceptions- Applet Programming: how applets differ from applications-preparing to write Applets-Building Applet Code-Applet Life cycle-creating an executable applet-designing a webpage-applet tag-adding applet to html file-running the applet.

Unit V **15 Hours**

Graphics Programming: the graphics class-Lines and rectangles-circles and ellipses, drawing polygons-line graphs- using control in applets-drawing bar charts. Managing Input/output Files in Java: concept of streams – stream classes- byte stream classes- character stream classes- using streams-other useful I/O Classes-un\sing the file class- I/O exceptions-creation of files-reading/writing character and buffering files-random access files-interactive input and output.

Text Book

1. Balagurusamy.E., (2008), "*Programming with Java*", A Primer,TATA McGraw-Hill Company, New Delhi, Third Edition.

Reference Books

1. Debasish Jana, (2008), "*Java and object oriented programming paradigm*" , New Delhi Prentice-Hall in India Private Limited.
2. Herbert Schildt , (2002), "*Java 2 – Complete Reference*" , Mcgraw Hill Edition (India) Private Limited, New Delhi, Fifth Edition.
3. John.R.Hubbard ,(2004) , " *Programming with Java (Schaum's Outline Series)*", McGraw Hill International Editions, New Delhi, Second Edition.
4. Somasundaram .K., (2008) , " *Programming in Java2*", JAICO Publishing House, First Edition.

Course Title : Java Programming Lab Semester : 4
Course Code : 17UCSC4P Part : III Contact Hours /Week : 5 Credit : 4

List of Practical

Write Programs in Java for the followings:

1. To implement a simple temperature conversion program.
2. To perform Addition of complex numbers using class and objects.
3. To perform Volume calculation using method overloading.
4. Using Command line Arguments, test if the given string is palindrome or not.
5. String Manipulation using string (Use of any five string methods are preferred)
6. Write a program to store names into a Vector list. Also, copy them into another Array List and then print it using Vector Class methods.
7. To perform Multiplication of Matrices using class and object
8. Using multilevel inheritance process student mark list.
9. Implement multiple inheritances for payroll processing.
10. Create a package called “Arithmetic “the contains method to deal with all Arithmetic operators. Also write a Program to use the package.
11. Create two threads such that one of the threads prints even numbers and another Print odd numbers using thread priorities.
12. Program to demonstrate the use built-in exception in Java.
13. Define an exception called “Marks Out of bound “Exception that is the entered Marks are greater than 100.
14. File processing using byte stream.
15. Draw a color balls using applet.
16. Draw a polygon using applets.

Course Title : Operating System Semester : 4
Course Code : 17UCSC42 Part : III Contact Hours /Week : 4 Credit : 4

Objectives

To enable the Students to be Familiar with the operating system concepts, Asynchronous Concurrent Execution, Deadlock, Indefinite Postponement, Introduce Real Memory Organization, Management and Disk Performance Optimization.

Unit I **10 Hours**

Introduction to Operating Systems: Introduction- What is Operating systems Operating system components and goals- Operating systems architectures. Process Concepts: Introduction- Process States- Process Management- Interrupts- Inter process Communication.

Unit II **12 Hours**

Asynchronous Concurrent Execution: Introduction-Mutual Exclusion- Implementing Mutual Exclusion Primitives- Software solutions to the Mutual Exclusion Problem- Hardware solution to the Mutual Exclusion Problem- Semaphores.

Unit III **14 Hours**

Deadlock and Indefinite Postponement: Introduction- Examples-Related Problem Indefinite Postponement- Resource concepts- conditions for deadlock- Deadlock solution, Prevention, Avoidance with Dijkstra's Banker's algorithm and Detection-Deadlock Recovery. Processor Scheduling: Scheduling levels-Preemptive Vs Non-Preemptive Scheduling Priorities- Scheduling objective, criteria and algorithms.

Unit IV **12 Hours**

Real Memory Organization and Management: Introduction-Memory organization, Memory Management- Memory Hierarchy- Memory Management Strategies- Contiguous Vs Non-Contiguous Memory allocation- Fixed Partition Multiprogramming-Variable Partition multiprogramming. Virtual Memory Management: Introduction-page Replacement- Page Replacement strategies.

Unit V **12 Hours**

Disk Performance Optimization: Introduction- Why Disk Scheduling is necessary- Disk Scheduling strategies. File and Database Systems: Introduction-Data Hierarchy-Files-File Systems-File Organization- File Allocation.

Text Book

1. Deitel & Deitel Choffnes, (2008), "*Operating Systems*", Pearson Education, Third Edition.

Reference Books

1. Pramod Chandra. P. Bhatt,(2008), "*An introduction to operating systems concepts and practice*" , Prentice Hall of India, Second Edition.
2. Abraham Silberschatz ,Peter Galvin, and Greg Gagne,(2007), "*Operating System Concepts, Windows XP Update*" , John Wiley & Sons, Sixth edition.
3. Pal Choudhury, (2001), "*Operating Systems Principles and Design*", Prentice Hall of India.
4. Dhananja. M.Dhamdhere, (2012), "*Operating Systems, A Concept Based Approach* ",Tata McGraw Hill, Third Edition .

Course Title : System Software Semester : 4
Course Code : 17UCSS41 Part : IV Contact Hours /Week : 2 Credit : 2

Objectives

To enable the Students to be Familiar with the basic concepts of machine architecture, assemblers, loaders, linkers, compilers and text editors.

Unit I **5 Hours**

Introduction- System software and Machine Architecture- Simplified Instructional Computer (SIC)- SIC Machine Architecture-SIC/XE Machine Architecture- Traditional (CISC) Machines- VAX Architecture- Pentium Pro Architecture- RISC Machines.

Unit II **8 Hours**

Assemblers- Basic Assembler Functions- A simple SIC Assembler-Assembler Algorithm and data structures- Assembler Design options-One Pass Assembler- Multi pass Assembler.

Unit III **5 Hours**

Loaders and Linkers: Basic Loader Functions-Design of Absolute Loader- Simple Bootstrap Loader- Machine Dependant Loader Features- Relocation- Program linking.

Unit IV **8 Hours**

Compilers- Basic compiler Functions- Grammars- Lexical Analysis- Syntactic Analysis-Code Generation- Compiler Design options.

Unit V **4 Hours**

Other System Software: Text Editors- Interactive Debugging Systems

Text Book

1. Leland.L.Beck, (2000), "*System Software – An Introduction to System Programming*", Pearson Education, Asia, Third Edition.

Reference Books

1. Dhamdhere.D.M., John.J. Donovan,(1999), " *System Programming & Operating Systems*" ,Tata Mc Graw Hill, Second Edition.
2. John.J.Donovan,(1992) , "*Systems Programming*", Tata Mc Graw Hill.
3. Santana Chattopadhyay, (2013), " *System Software* ",Prentice Hall of India, New Delhi, Fifth Edition.

Course Title : Linux Programming Lab Semester : 4

Course Code : 17UCSS4P Part : IV Contact Hours /Week : 2 Credit : 2

List of Practical

1. Write a Linux script to find the sum of digits of a given number.
2. Write a Linux script to find the reverse of a number.
3. Write a Linux script to print the numbers 5, 4,3,2,1 using while loop.
4. Write a Linux script to perform arithmetic operations using case.
5. Write a Linux script to display multiplication table.
6. Write a Linux script to perform string manipulation.
7. Write a Linux script to check whether a given number is prime or not..
8. Write a Linux script to find the factorial of a number.
9. Write a Linux script to check for palindrome.
10. Check pattern matching using GREP
11. Find the user who have logged in.
12. Write a Linux script to perform sorting file contents.
13. Write a Linux script to check the given file is directory or not.
14. To create and append a file.
15. To compare two files.

Semester – 5

Course Title : Relational Database Management System Semester : 5
Course Code : 17UCSC51 Part : III Contact Hours /Week : 6 Credit : 4

Objectives

To enable the students to be familiar of Database System, relational model and SQL queries, Normal Forms and Transaction Management.

Unit I **15 Hours**

Introduction: Data, Information, and Information Processing-Files File organization and File Structure. **Introduction to DBMS:** Database Management Systems-Introduction to Relational Database Management Systems. **Database Architecture, Design and Data** Modeling**:** Database Architecture and data modeling.

Unit II **20 Hours**

ER modeling: Introduction- ER Model- Components- ER modeling symbols. **Data Normalization:** Introduction First Normal Form (INF) – Second Normal Form (2NF)-Third Normal Form (3NF) Boyce-Coded Normal Form (BCNF) -De- normalization.

Unit III **15 Hours**

Relational Algebra and Relational Calculus: Relational Algebra-Relational Calculus. **SQL:** Introduction-data types-Types of SQL Commands-Tables, views and indexes -Nulls-Queries and sub queries - Aggregate functions -Insert, Delete update operations-cursors-Joins and Unions.

Unit IV **20 Hours**

PL/SQL: Introduction-PL/SQL Blocks –PL/SQL Architecture-PL/SQL variables – Data Types-Control structures-Iterative Control statement-cursors-Triggers-PL/SQL Exceptions-procedures and packages.

Unit V **20 Hours**

Data Integrity: Introduction-Types of integrity constraints-Restrictions on integrity constraints. **Database Security:** Database Security-Database integrity-Transaction management and Concurrency Control-Backup and recovery.

Text Book

1. Alexis Leon & Mathews Leon, (2002), "*Database Management Systems*", Leon Vikas Publishing ,Chennai.

Reference Books

1. Raghu Ramakrishnan & Johannes Gehrke, (2000), "*Database Management Systems*", McGraw Hill International Edition, Second Edition.
2. Gupta.G.K., (2001), " *Database Management Systems*", McGraw Hill Publication, New Delhi, Fouth Edition.
3. Abraham Silberschatz, Henry.F. Korth, and Sudarshan.S., (2010), " *Database System Concepts*", McGraw Hill, Sixth Edition.

Course Title : System Analysis and Design Semester : 5
Course Code : 17UCSC52 Part : III Contact Hours /Week : 5 Credit : 4

Objectives

To enable the students to be familiar with basic activities involved in system analysis and design using structured analysis and structured design.

Unit I **12 Hours**

System concepts, types of systems - system development life cycle - comparison, objectives - main activities and prototyping - players in system development life cycle -system analyst – programmer - user and others.

Unit II **18 Hours**

Planning and control of system development - analysis tool Data gathering Techniques: interview- questionnaires - problem identification - feasibility study - Gantt chart system modeling analysis - cost benefit analysis - preparing project proposal.

Unit III **15 Hours**

Analysis Tool: Data flow diagram - data dictionaries - data structure diagrams - other charts and techniques - decision table - decision tree - structured English.

Unit IV **15 Hours**

Design Process: Transform analysis - transaction analysis – coupling – cohesion –interface - input form - output form - dialogue screen.

Unit V **15 Hours**

Implementation: Implementation methods - testing- unit testing - System testing - acceptance testing- pert diagram - report and system documentation.

Text Book

1. Jeffrey. A .Hoffer, (2011), "*Modern System Analysis and Design*", Pearson Publication, New Delhi.

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Reference Books

1. Kenneth. E.Kendal, (2015)," *Introduction to System Analysis and Design*", Pearson Publication, New Delhi.
2. Kendall & Kendall, (2012), "*System Analysis and Design*", Prentice Hall of India.
3. Dennis,(2012)," *System Analysis and Design*", Wiley Publisher.

Course Title : Relational Database Management System Lab Semester : 5
Course Code : 17UCSC5P Part : III Contact Hours /Week : 5 Credit : 4

List of Practical

1. To execute a Basic SQL queries. (create table , Insert, delete and select)
2. To execute SQL queries for alter and update existing table. (alter, update and rename)
3. To execute SQL queries for constraints. (Primary key and integrity constraints).
4. To execute SQL queries for built in functions.(String, math and Date)
5. To execute SQL queries for aggregate functions.
6. To execute SQL queries for DCL. (Create user, Grant and Revoke)
7. To execute PL/SQL program for Conditional statements.
8. To execute PL/SQL program for Loops.
9. To execute PL/SQL program for Table handling queries.
10. To execute PL/SQL program for Implicit Cursor.
11. To execute PL/SQL program for Explicit Cursor.
12. To execute PL/SQL program for Exception Handling.
13. To execute PL/SQL program for Trigger.
14. To execute PL/SQL program for Functions.
15. To execute PL/SQL program for Package.

Course Title : Advanced Visual Programming Lab Semester : 5
Course Code : 17UCSC5Q Part : III Contact Hours /Week : 5 Credit : 4

List of Practical

1. Write a VB.Net program to perform String operations.
2. Write a VB.Net program to perform List box operations.
3. Write a VB.Net program to perform Array List Operations.
4. Write a VB.Net program to perform Constructor overloading.
5. Write a VB.Net program to draw shapes using Enumeration.
6. Write a VB.Net application using data grid to display records.
7. Write a VB.Net program to perform number checking.
   (Armstrong, Palindrome and sum of digits).
8. Write a VB.Net program to design a calculator.
9. Write a VB.Net program to perform bank transaction.
10. Write a VB.Net program to develop a quiz application.
11. Write a VB.Net program to display mark list using exception.
12. Write a VB.Net program to show car show room details.
13. Write a VB.Net program to develop an application for Hospital management using interface.
14. Write a VB.Net program to perform payroll of employees using inheritance.
15. Write a VB.Net program to implement operator overloading.
16. Write a VB.Net program to develop a database application for student's information system.

Course Title : Advanced Visual Programming Semester : 5
Course Code : 17UCSE51 Part : III Contact Hours /Week : 5 Credit : 4

Objectives

To enable the students to understand the basics of VB.NET, Controls, concept of menus, built-in dialog boxes, toolbars and status bars.

Unit I **12 Hours**

Essential VB .NET- The VB language: Operators – conditionals and loops: In depth – Immediate solutions- The VB language: Procedures, scope, and exception handling: In Depth – Immediate solutions

Unit II **15 Hours**

Windows Forms: In Depth- Immediate solutions – Windows Forms: Textboxes, Rich Textbox, Labels, and Link Labels: In Depth – Immediate solutions

Unit III **18 Hours**

Windows Forms: Buttons, Checkboxes, Radio Buttons, Panels and Group Boxes: In Depth – Immediate solutions. **Windows Forms:** List boxes, Checked List Boxes, Combo Boxes and Picture Boxes: In Depth – Immediate solutions

Unit IV **15 Hours**

Windows Forms: Scroll bars, Track bars, Pickers, Notify Icons, Tool tips, and Timers: In depth – Immediate solutions. **Windows Forms:** Menus, Built-in dialog boxes and printing: In depth – Immediate solutions

Unit V **15 Hours**

Windows Forms: Image lists, Tree and List views, Toolbars, status and progress bars and Tab: In Depth – Immediate solutions. **Object Oriented Programming:** In Depth – Immediate solutions. **Object oriented Inheritance:** In Depth – Immediate solutions.

Text Book

1. Steven Holzner, (2010),” *Visual Basic.Net Programming Black Book*” , Dream Tech Press.

Reference Books

1. Muthu.C., (2008),” *Visual Basic.Net*”, Tata McGraw Hill Education.
2. Jeffrey.R.Shapiro, (2002), “*The Complete reference Visual Basic.Net*”, Tata McGraw Hill Education.
3. Shirish Chavan, (2009), “*Visual Basic.Net*”, Pearson Education.

Course Title : Data Mining | Semester : 5
Course Code : 17UCSE52 | Part : III | Contact Hours /Week : 6 | Credit : 4

Objectives

To enable the students to be familiar with the data mining concepts, applications, rules, OLAP, classification, cluster analysis and web mining.

Unit I **18 Hours**

Introduction: Data Mining Application- Data Mining Techniques- Data mining case studies the future of Data Mining- Data Mining Software- **Association Rules Mining:** Introduction- basics-task and Naïve Algorithm- Apriori Algorithm- Improve the efficiency of the apriori algorithm- mining frequent pattern without candidate generation (FP- Growth) – performance evaluation of algorithms.

Unit II **20 Hours**

Data Warehousing: Introduction- Operational data sources- data warehousing- Data warehousing design- Guidelines for data warehousing implementation- Data warehousing- Meta data- **Online Analytical Processing**:**(OLAP)** Introduction- OLAP characteristics of OLAP system- Multidimensional view and data cube- Data cube implementation- Data cube operations OLAP implementation guidelines.

Unit III **16 Hours**

Classification: Introduction- decision tree- over fitting and pruning- DT rules- Naïve Bayes methods- estimation predictive accuracy of classification methods- other evaluation criteria for classification method- classification software

Unit IV **18 Hours**

Cluster Analysis: cluster analysis- types of data- computing distances- types of cluster analysis methods- partitioned methods- hierarchical methods- density based methods- Dealing with large databases- quality and validity of cluster analysis methods- cluster analysis software

Unit V **18 Hours**

Web data mining: Introduction- web terminology and characteristics- locality and hierarchy in the web- web content mining- web usage mining- web structure mining- web mining software-. **Search Engines:** Search engines functionality- search engines architecture- Ranking of web pages.

Text Book

1. Gupta G.K., (2008), "*Introduction of Data mining with case studies*", Prentice Hall of India, New Delhi.

Reference Books

1. Alex Berson and Stephen.J.Smith, "*Data Mining & OLAP*", Tata McGraw Hill, Tenth Edition.
2. Jiawei Han and Micheline Kamber, " *Data Mining Concepts and Techniques*", Elsevier, Second Edition.
3. Ian H. Wittan, Eibe Frank, "*Data Mining*", Elsevier, Fourth Edition.

Course Title : Quantitative Aptitude Semester : 5

Course Code : 17UCSS51 Part : IV Contact Hours /Week : 2 Credit : 2

Objectives

To enable the students to be familiar with the concept of shortcuts, fundamental Age, roots problems, profit and loss methods with their shortcuts, time and distance problem for computational methods, interest, area, volume calculation and their shortcuts.

Unit I **6 Hours**

Numbers - HCF & LCM of numbers-Decimal Fractions.

Unit II **6 Hours**

Square roots & Cube roots – Average - Problems on Numbers-Problems on Ages.

Unit III **6 Hours**

Percentage-Profit & Loss -Ratio & Proportions.

Unit IV **6 Hours**

Time & Work - Time & Distance.

Unit V **6 Hours**

Simple Interest - Compound Interest – Area - Volume & Surface areas.

Text Book

1. Aggarwal R.S., (2011), "*Quantitative Aptitude*", S.Chand & Company Limited.

Reference Books

1. Praveen R.V., (2013), "*Quantitative Aptitude and reasoning*" ,Prentice Hall of India, Second Edition.
2. Tyra M.,(2011), "*Magical book on Quicker Maths*", BSC Publishing Company Private Limited, Delhi .
3. Abhijit Guha, (2003),"*Quantitative Aptitude for Competitive Exams*", Tata Mc Graw Hill Company, New Delhi, Fourth Edition.

Course Title : Environmental Studies Semester : 5

Course Code : 17UESV51 Part : IV Contact Hours /Week : 2 Credit : 2

Objectives

To disseminate information of Environment of national and international issues, to create environmental consciousness among the students and facilitate environmental leadership among students

Unit I **6 Hours**

Environment Education: Objectives, Nature and Scope – Environment Education in India, Components of Environment – Biosphere, Lithospheres, Hydrosphere, Atmosphere. Global Environment Issues - Global Warming, Ozone Layer Depletion, Acid Rain, Desertification, Loss of Bio-diversity, E-wastes and Cloud Bursting.

Unit II **6 Hours**

Ecosystems: Concept, Structure and Functions of an ecosystem – Producers, Consumers and Decomposers; Energy Flow in an Ecosystem - Food Chains, Food Webs and Ecological Pyramids.

Unit III **6 Hours**

Energy Resources and Conservation: Definition, Classification – Conventional, Non-Conventional with examples; Solid, Liquid and gaseous Wastes, Conversion of Wastes into Wealth; Energy from Wastes.

Unit IV **6 Hours**

Natural Resources: Introduction, Types - Forest, Water, Mineral, Animal and Livestock, Land & Food; Resources Depletions - causes, consequences and remedies. Environmental Pollution – Noise, Air, Water, Soil - Causes, Consequences and Remedial Measures; Environment Laws, Acts Rules and Procedures in India – Social Issues – Sustainable Development.

Unit V **6 Hours**

Biodiversity and its Conservation: Introduction, Types of Biodiversity – Genetic, Species and Ecological Levels; Bio-diversity at Global, and National levels; Loss of Biodiversity – causes and consequences and remedial measures; Hot Spots and Cool Spots of Bio-diversity; Biodiversity Conservation and Strategies – In Situ and Ex Situ.

Text Book

1. Ravichandran.P., and Muthumari.M., (2019), "*Environmental Studies"*, New Century Book House, Chennai.

Reference Books

1. Abhijit Mallick, (2014), "*Environmental Science and Management"*, Viva Books Private Limited,New Delhi.
2. Kanagasabai.S., (2010), "*Textbook on Environmental Studies"*, Prentice Hall of India Learning Private Limited, New Delhi.
3. Rajagopalan.R., (2005), "*Environmental Studies"*,Oxford University Press, New Delhi.
4. Ulaganathan Sankar, (2001), "*Environmental Economics"*, Oxford University Press, New Delhi.
5. Shukla R.S., and Chandel P.S., (2003), "*Plant Ecology"*,S.Chand & Company Limited, New Delhi.
6. Ramakrishnan.P.S.,(2013), "*Ecology and Sustainable Development"*, National Book Trust, India.

Self Study Paper – II

Course Title : Adventure Training and Personality Development Semester : 5
Course Code : 17UNCV51 Part : V Contact Hours /Week : 4 Credit : 2

Unit 1 Civil Defence

Civil defence organization and its duties/NDMA – types of emergences/natural disasters – Fire services & fire fighting – traffic control during disaster under police supervision – essential services and their maintenance –

Unit II Disaster Management

Assistance during natural/other calamities: Flood/Cyclone/Earth quake/Accident etc. – setting of relief camp during disaster management – Collection and distribution of aid materials

Unit III Map Reading

Introduction to types of maps and conventional signs, scales and grid system, topographical forms and technical terms – relief, contours and gradients – cardinal points and types of north – types of bearings and use of service protractor – prismatic compass and its use & GPS – setting a map, finding north and own position – map to ground, ground to map

Unit IV Communication

Types of communications – characteristics of wireless technology (mobile, Wi fi etc) – characteristics of Walkie/Talkie – Basic RT procedure – latest trends and development (multimedia, video conferencing, IT)

Unit V Field Craft, Battle Craft, Adventure Training

Introduction - Judging the distance – description of ground – recognition, description and indication of landmarks and target – observation, camouflage and concealment – field signals – section formation – fire control orders – fire and movement – types of knots and lashings - Obstacle course-Para sailing – slithering – rock climbing – cycling/trekking

Reference Books

1. "*National Cadet corps standing Instructions*", (2017), Volume I & II, DG NCC, Minister of Defence, Shri Sai Enterprises, New Delhi.
2. Major Ramasamy.R., "*NCC Guide*", Priya Publication, Karur – 2.
3. Lt. Col. Prasad.P.S., (2008)," *A Key to Success*",Kerala.
4. ANO Handbook, www.nccindia.nic.in.
5. Cadets Handbook Common Subjects SD/SW.

* Note : III year UG students enrolled in NCC only.
* Note: Necessary demonstration and practical training will be dealt during parade hours

Semester – 6

Course Title : Data Communication Networks Semester :6
Course Code : 17UCSC61 Part : III Contact Hours /Week : 5 Credit : 4

Objectives

To enable the students to introduce data communication and computer networks, OSI and TCP Models, transmission media, data link controls, LAN and Switching.

Unit I **12 Hours**

Data Communication: Characteristics and components. **Networks:** Distributed processing, Network criteria, applications. Protocols and standards and standard organizations. Line configurations, Topologies, Network classifications. OSI reference model: Layers and Functions. TCP/IP Layers

Unit II **15 Hours**

Transmission Media: Guided media – Twisted pair, Coaxial cable, optical fibers. Unguided media - Microwave, Satellite, Cellular telephony - Transmission impairment types - Performance features. **Errors:** types, Detection techniques Vertical and Longitudinal redundancy checks, CRC, Checksum

Unit III **18 Hours**

Data Link: Data Link Control – Line Discipline – Flow Control – stop and wait, Sliding Window flow controls Error control using different ARQ techniques. **Data Link Protocols:** Character oriented protocol: BSC, Bit oriented protocol: HDLC.

Unit IV **15 Hours**

Local Area Networks: Project 802 – layers, PDU formats. Ethernet – CSMA/CD Access methods, Ethernet MAC frame structure, Thick and thin Ethernet implementation, Switched and Fast Ethernet. Token BUS, Token Ring, FDDI

Unit V **15 Hours**

Switching: Circuit and Packet switching. ISDN: Services, Evolution, Channel types and uses, User interfaces, Functional Groupings and reference points. ISDN layers and functions of layers, Broadband ISDN.

Text Book

1. Behrous.A. Forouzan, (2007), "*Data Communications and Networking*", Tata McGraw-Hill.

Reference Books

1. Brijendra Singh, (2007), "*Data Communications and Computer Networks*", Prentice-Hall Of India Private Limited, New Delhi, Second Edition.
2. Tananbaum.A., (2007), "*Computer Networks"*, Pearson Education .
3. William Stallings, (2007), "*Data and Computer communications*"**,** Pearson Education, Asia.

Course Title : Computer Graphics Semester :6

Course Code : 17UCSC62 Part : III Contact Hours /Week : 5 Credit : 4

Objectives

To enable the students to familiar with computer graphics basis, applications, display devices, lines, circles and ellipse generation, line and curve attributes and color property, gain knowledge for geometric transformations and clippings.

Unit I **18 Hours**

A Survey of Computer Graphics: Computer - Aided Design - Presentation Graphics – Computer Art –Entertainment - Education and Training – Visualization – Image Processing – Graphical User Interface. Overview of Graphical Systems : Video Display Devices – Raster scan System – Random Scan System – Input Devices - Hard Copy deices.

Unit II **15 Hours**

Output primitive: Points And Lines – Line Drawing Algorithms – Circle Generation Algorithms – Ellipse Generation Algorithms - Filled Area Algorithms

Unit III **12 Hours**

Attributes of Output Primitive: Line Attribute - Curve Attribute – Color and Gray Scale Levels – Area Fill Attribute – Character Attribute – Bundle Attributes – Inquiry Functions – Anti-aliasing.

Unit IV **15 Hours**

Two Dimensional Geometric Transformations : Basic Transformation – Matrix Representation – Composite Transformation – Other Transformation – Transformation between Coordinate Systems

Unit V **15 Hours**

Two – Dimensional Viewing : Viewing Coordinate reference Frame – Window to Viewport Coordinate Transformation – Two Dimensional Viewing Functions – Clipping Operations – Point Clipping – Line Clipping – Cure Clipping – Text Clipping – Exterior Clipping .

Text Book

1. Donald Hearn and Pauline Baker M., (1994),"*Computer Graphics*", Prentice Hall of India Private Limited, New Delhi.

Reference Books

1. Malry.K.Pakhira, (2008), "*Computer Graphics, Multimedia Animation*", Prentice Hall of India Private Limited, New Delhi.
2. Mukherjee.D.P, (1999), "*Fundamentals of Computer Graphics and Multimedia*", Prentice Hall of India Private Limited, New Delhi.
3. Andries van Dam, James.D.John, and Steven, (1995), "*Computer Graphics*" , Addition-Wesly.

Course Title : Python Programming Semester :6
Course Code : 17UCSC6Q Part : III Contact Hours /Week : 4 Credit : 4

List of Practical

1. To convert Fahrenheit to Celsius
2. To calculate simple interest
3. To swap two numbers.
4. To find odd or even from given number.
5. To find biggest among 3 numbers.
6. To print Fibonacci series.
7. To find prime or not in given number.
8. To demonstrate built in functions (Math and String functions)
9. To find factorial using recursion.
10. To demonstrate convert number systems.
11. To process employee payroll using user defined functions.
12. To find a string is a palindrome or not.
13. To remove punctuation marks of a given string.
14. To add and multiply the matrices.
15. To define functions and print tuple values are cube of number between 1and 15
16. To demonstrate file process.
17. To print calendar as per need.

Course Title : PHP Lab | Semester :6

Course Code : 17UCSC6R | Part : III | Contact Hours /Week : 4 | Credit : 4

List of Practical

Write PHP Programs for the following:

1. To demonstrate all array operations(array_search(), array_diff(), array_combine (), array_match (), sort ())
2. To demonstrate all control statements(find factorial of the given number using IF, While, Do-while)
3. To display Inventory Table using Key & Value pairs
4. To print Student Table using Key & Value pairs and Search particular Student Number (whether it is present or not)
5. To illustrate user defined function(Define all function types)
6. Function without Input Argument and No return value
7. Function without Input Argument and return value
8. Function with Input Argument and No return value
9. Function with Input Argument and return value
10. Function with default argument
11. To find factorial of the given number using Recursion
12. To calculate NCR using include command to include the factorial function
13. Write a PHP Program to store current date-time in a COOKIE and display the 'Last visited on' date-time on the web page upon reopening of the same page.
14. To perform string manipulation
15. To process personal details using File
16. To design an student mark database using HTML Form and process using PHP

Course Title : Android Programming Semester :6

Course Code : 17UCSE61 Part : III Contact Hours /Week : 5 Credit : 4

Objectives

To enable the students to about Android programming concepts, the Expending the user Experience, Database and Current Providers.

Unit I **18 Hours**

Hello Android : A little back ground - what Android Isn't Android ; An open platform for Mobile development – Native Android Application – Android STK features – Introduction to open handset alliance- What Dose Android Run on – Why develop for mobile – why develop for android – Introduction to develop Frameworks –getting started - Develop for android - developing for mobile and Embedded –Android development tools - **Creating Application And Activities :** what makes an android application – introduction the application main fast file – Using the main fast Editor – Externalizing resources - The Android Application Lifecycle – Introducing Android application class – A closer Look at an android –activities .

Unit II **15 Hours**

Building User Inter faces: Fundamental Android UI Design – Android user interfaces fundamentals – Introducing Layouts - Introducing fragment – creating new views - Introducing Adaptors Intent and **Broadcast Receivers:** Introducing Intents –creating intent filters and Broadcast Receivers. Using Internet Resource Downloading and Parsing internet recourse the download manager

Unit III **12 Hours**

Expending the user Experience: Introducing for Action bar – Creating the new menus and action bar action terms – Introducing Dialogue – Introducing Notification – **Advanced User Experience:** Working with Animation – Enhancing your views.

Unit IV **12 Hours**

Invading the home Screen: Introducing home screen widgets – creating app Widgets – Creating live wallpaper. Video and using the camera: Playing audio and videos hashing the camera for tasking pictures – Recording Video

Unit V **18 Hours**

Database and Current Providers: Introducing Android Database - Introducing SQLite Current value and Cursors – Working with SQLite Database – create content providers – Using Content Providers. **Maps, Geo coding, and Location - Based Service:** Using Location Based Service – Using the Emulator With location Based Service – selecting a location provider - Finding your current location.

Text Book

1. Reto Meier, (2012), "*Professional Android 4 Applications Development*" , Wiley India Private Limited.

Reference Books

1. Mark.L.Mutphy, (2016), "*The busy coders Guide to Android Application*", Commons ware LLC.
2. Wallce Jackson, (2014), "*Android App for Absolute Beginners*", A press Publishing.
3. Sams, (2010), "*Android Application Development 24 hrs*".

Course Title : Python Programming Semester :6

Course Code : 17UCSE62 Part : III Contact Hours /Week : 5 Credit : 4

Objectives

To enable the students to familiar with python programming basics, Functions, Strings, Lists Classes and Objects.

Unit I **15 Hours**

Introduction to digital computer: Introduction-Von Neumann Concept- Storage-Programming languages-Translators-Hardware and Software-Operating system. **Problem solving strategies:** Problem analysis-Algorithms-Flow charts-Examples of algorithms and flow charts.

Unit II **18 Hours**

Introduction to Python and Data, Expressions, Statements: Introduction-Python overview-Getting started with python-Comments-Python identifiers-Reserved Keywords-Variables-Standard data types-Operators-Statement and expressions-String operations-Boolean expressions-Control Statements-Iteration-while statement-Input from keyboard.

Unit III **15 Hours**

Functions: Introduction-Built-in functions-Composition of functions-User defined functions-Parameters and arguments-Function calls-The return statement-Python recursive function-The Anonymous functions-Writing python scripts.

Unit IV **12 Hours**

String and Lists: Strings-Lists. Tuples and Dictionaries: Tuples-Dictionaries. **Files and Exceptions:** Text files-Directories-Exceptions - Exception with arguments - User-defined Exception.

Unit V **15 Hours**

Classes and Objects: Overview of OOP(object-oriented programming)-Class definitions-Creating objects-Objects as Arguments-Object as Return Values-Built-in Class Attributes-Inheritance-Method Overriding-Data Encapsulation-Data hiding.

Text Book

1. Balagurusamy.E., (2018), "*Problem Solving and Python Programming*", Mc Graw Hill,Chennai.

Reference Books

1. Leonard Eddison, (2018), " *Python Programming, A step by step Guide for Beginners*".
2. " *Python Programming*", iCode Academy.
3. Charles.R.Severance, (2016), "*Python for Every Body*".

Course Title : Project Work /Viva Voce Semester :6

Course Code : 17UCSC6P Part : III Contact Hours /Week : 5 Credit : 5

For Project Work & Viva Voce

A Project should be undertaken by individual or two students with in the college.

Total Marks: 100 (Internal: 40 marks, External: 60 marks)

Parameters for Internal Marks:

Two Review Meetings : 2 X 15 = 30 Marks

Overall Performance : 10 Marks

Parameters for External Marks:

Project Report : 10 Marks

Project Demo & Presentation : 30 Marks

Viva Voce : 20 Marks

Course Title : Value Education Semester :6

Course Code : 17UVEV61 Part : IV Contact Hours /Week : 2 Credit : 2

Objectives

To enable the students to develop character, morality, cultural and spiritual values, values of democracy, secularism and equality and to strengthen National Integeration.

Unit I **6 Hours**

Values and the Individual : Meaning of Value Education - Significance of Values – Classification of Values – Objectives of Value Education - Need for the Inclusion of Value Education – Values and the Individual; Self Discipline, Self Confidence, Self Initiative, Empathy, Compassion, Forgiveness, Honesty and Moral Courage.

Unit II **6 Hours**

Values and Religions / Faiths: Karma Yoga in Hinduism – Ahimsa in Jainism - Compassion in Buddhism - Love and Justice in Christianity – Universal Brotherhood in Islam- Selfless Service in Sikhism – Need for Inter Religious Dialogue and Communal Harmony.

Unit III **6 Hours**

Values and Society: Definition of Society – Democracy – Secularism – Socialism – Gender Justice – Human Duties/Rights – Socio-Political Awareness – Multi Culturalism and Social Integration – Social Justice.

Unit IV **6 Hours**

Professional Values: Definition – Accountability – Willigness to Learn – Team Spirit – Consensus – Honesty – Transparency – Mutual Respect – Democratic Functioning– Integrity and Commitment.

Unit V **6 Hours**

Role of Social Institutions in Value Formation: Role of Family – Peer Group – Society – Educational Institutions – Role Models – Swamy Vivekananda – Mahatma Gandhi – Martin Luther King Jr. – Mother Teresa Mass Media in Value Formation.

Text Book

1. Kannan.S., Sujatha.S., & Ramachandran.S., (2019), "*Values of Education*" , The New Century Book House, Chennai.

Reference Books

1. Saravanan.P., & Andichamy.P., "*Value Education"* , Madurai Merit India Publications.
2. Swami Chidbhavanandha, "*Indian National Education"* , Sri Ramakrishna Mutt, Thirupparaithurai,Trichy.
3. "*Complete Works of Swami. Vivekananda"* , Sri Ramakrishna Mutt,Chennai.
4. Gandhi. M.K., *(*2014), *"An Autobiography or The Story of My Experiment with Truth"* , Navajeevan Publication, Ahmadabad.
5. Jeyapragasam.S.,(2006) *,"World Religions"* , CEPCHIRA, Madurai.
6. (1999),"*Encyclopedia of World Religion",* Merriam Webster Publication, United States of America.

Course Title : Oracle DBA Semester :6
Course Code : 17CCSC51 Part : III Total Hours : 30 Credit : 1

Objectives

Fundamentals of the tasks and functions required of a database administrator. While Oracle is the Primary Database Management System utilized, the concepts and procedures presented in this course are typical for any Database Management System Server.

Unit I **8 Hours**

Oracle Architecture: DBA tools – SVRMGRL and OEM-Hardware Configurations-Creating a Database-Logical Database Layouts – Managing-the Control file and Redo Log groups.

Unit II **8 Hours**

Physical Database Layouts-Managing Table spaces and Data files-Managing the Development Process Storage Structures.

Unit III **6 Hours**

Managing Rollback segments-Database Security and Auditing-Managing Users and Privileges-Monitoring Databases.

Unit IV **4 Hours**

Managing Tables and indexes-Database Tuning-Application & SQL Optimization.

Unit V **4 Hours**

Backup and Recovery Procedures.

Lab Assignments:

1. Administering your Database Using Administrative Tools
2. Preparing to Create a Database and Database Startup
3. Managing Table spaces and Data Files
4. Tables, Indexes and Constraints
5. Rollback Segments
6. Managing Users and Monitoring the Database
7. Tuning the Database.
8. Oracle 9i Backup and Recovery

Text Book

1. Kevin Loney,George Koch and Experts at TUSC,(2002),"*Oracle 9i The Complete Reference*",Mc Graw Hill, New York.

Reference Books

1. Brain Laskey, David.C.Kreims,(1999), " *Oracle DBA Administration*",O'Reilly Media Incorporation.
2. Guyharrison,Lynwood Brown,(1997), "*Oracle DBA*" ,Prentice Hall PTR Publisher.
3. Darlkuhn,(2014)," *Oracle Database 12 C Administration*", A Press Publisher.

Course Title : Multimedia Technology Semester :6

Course Code : 17CCSC61 Part : III Total Hours : 30 Credit : 1

Objectives

To develop the skill & knowledge in 3D Modeling & Animation. Students will understand the knowhow and can function either as an entrepreneur or can take up jobs in the multimedia and animation industry, video studios, edit set-up and other special effects sectors.

Unit I **8 Hours**

Definition of Computer-based Animation,Basic Types of Animation: Real Time ,Non-real-time, Definition of Modelling, Creation of 3D objects Exploring the Max Interface, Controlling & Configuring the Viewports, Customizing the Max Interface & Setting Preferences, Working with Files, Importing & Exporting, Selecting Objects & Editing Standard Primitive & extended Primitives objects,

Unit II **6 Hours**

Understanding 2D Splines& shape, Extrude & Bevel 2D , object to 3D,Understanding Loft & terrain, Modeling simpleobjects with splines, Understanding morph, scatter, conform, connect compound objects, blob mesh, Boolean ,Proboolean&procutter compound object

Unit III **6 Hours**

Modeling with Polygons, using the graphite, working with XRefs, Building simple scenes, Building complex scenes with XRefs, using assets tracking, deforming surfaces & using the mesh modifiers, modeling with patches & NURBS

Unit IV **4 Hours**

Creating Keyframes, Auto Keyframes, Move & Scale Keyframe on the timeline, Animating with constraints & simple controllers, animation Modifiers & complex controllers, function curves in the track view, motion mixer etc.

Unit V **6 Hours**

Bind to Space Warp object, Gravity, wind, displace force object, deflectors, FFD space warp, wave, ripple, bomb, Creating particle system through parray, understanding particle flow user interface, how to particle flow works, hair and fur modifier, cloth & garment maker modifiers etc.

Lab Assignments:

1. 2D Splines, Shapes & compound object
2. 3D Modeling
3. Key frame Animation
4. Simulation & Effects
5. Hair and Fur model

Text Book

1. Ralf Steinmetz, Klara Nahrstedt ,(2002),"*Computing Communication and Applications*", Pearson Education, Chennai .

Reference Books

1. Tayvaughan,(2016), " *Making it Work*",(Ninth Edition),Mc Graw Hill, New Delhi.
2. John.F. Koegel Buford,(2002), "*Multmedia System*" , Pearson Education,Chennai.
3. Prabhat K.Andleigh Kiran Thakrav,(2015)," *Multimedia System Design*", Pearson Education,Chennai, First Edition.