

**BCA COURSE STRUCTURE UNDER CBCS PATTERN**

**(For the Candidates admitted from 2015 – 2016 Academic year onwards)**

Sem	Part	Course Code	TITLE	Hrs	Cr	CIA	EE	TOT
I	I	15T101a	LC-I- செய்யுள் (இக்கால இலக்கியம்), சிறுகதை, பயன்முறைத் தமிழ், தமிழ் இலக்கிய வரலாறு.	6	3	25	75	100
	II	15H101	ELC-I- English for Communicative Competence	6	3	25	75	100
	III	15A101	CC-I- Programming in Python	4	4	25	75	100
		15A102L	CC-IIa- Software Lab - I [Python]	3	2	10	40	50
		15A103A	AC-I- Statistical methods	5	4	25	75	100
		15A104A	AC-II- Operations Research for Computer Applications	4	4	25	75	100
	IV	15VEDa	VE-Value Education	2	1	-	100	100
II	I	15T202a	LC-II- செய்யுள் (பக்தி,இடைக்கால இலக்கியம்)தமிழ்ச் செம்மொழி வரலாறு, மொழிபெயர்ப்பியல், தமிழ் இலக்கிய வரலாறு	6	3	25	75	100
	II	15H202	ELC-II- English for Proficiency	6	3	25	75	100
	III	15A205	CC-III- Programming in C and Data Structures	6	4	25	75	100
		15A206L	CC IIb- Software Lab - II [C and Data Structures]	3	2	10	40	50
		15A207A	AC-III- Algebra and calculus	5	4	25	75	100
	IV	15XA21	SKBC-I- Image Editing and Manipulation	2	2	-	100	100
		15EVS	EVS– Environmental Science	2	1	-	100	100
III	I	15T303	LC-III- செய்யுள் (காப்பியங்கள்),புதினம்,தமிழ் இலக்கிய வரலாறு	6	3	25	75	100
	II	15H303	ELC-III- English for Employability	6	3	25	75	100
	III	15A308	CC-IV- Data Base System	5	4	25	75	100
		15A309L	CC-Va- Software Lab - III [RDBMS]	3	2	10	40	50
		15A310A	AC-IV- Principles of Accountancy	5	4	25	75	100
		15A311L	AC-Va- Accounting Package lab	3	2	10	40	50
	IV	15XA32L	SKBC-II- Image Editing Lab	2	2	0	100	100
		15GS	GS- Gender Studies ( Self study)	0	1	0	100	100

IV	I	15T404	LC-IV- செய்யுள் (பழந்தமிழ் இலக்கியம்), நாடகம், தமிழ் இலக்கிய வரலாறு, கட்டுரை வரைவியல்	6	3	25	75	100
	II	15H404	ELC-IV- English through Literary Texts	6	3	25	75	100
	III	15A412	CC-VI- Programming in Java	6	4	25	75	100
		15A413L	CC-Vb- Software Lab - IV [Java]	3	2	10	40	50
		15A414L	AC-Vb- Programming using 'R' Lab	3	2	10	40	50
		15A 415	AC-VI-Programming using 'R'	6	4	25	75	100
	IV	15SSC	SSC- Soft Skills Course	0	2	0	100	100
V	III	15A516	CC-VII- Data and Communication Network	5	5	25	75	100
		15A517	CC-VIII- Operating System	5	5	25	75	100
		15A518	CC-IX- Distributed Programming using .NET	5	5	25	75	100
		15A519L	CC-X- Software Lab - V [.NET and System Administration]	6	5	25	75	100
		15A520a	EC-I- Big Data Analytics	5	5	25	75	100
		15A520b	EC-I- Cloud Computing					
	15A520c	EC-I- Mobile Commerce						
IV	15A5Na	NMEC -BPO and Health Care	4	4	-	100	100	
15A5Nb	NMEC -Desk Top Publishing							
VI	III	15A621	CC-XI- Software Engineering	6	5	25	75	100
		15A622	CC-XII- Mobile Apps Development	6	5	25	75	100
		15A623	CC-XIII- Computer Graphics	6	5	25	75	100
		15A624L	CC- XIV- Software Lab- VI [Mobile Apps Development and Application Development]	6	5	25	75	100
		15A625a	EC-II- Ruby on Rails	6	5	25	75	100
		15A625b	EC-II- Web Technology					
		15A625c	EC-II- XML and Web Services					
	15AC	Comprehensive Course	0	4	-	100	100	
IV	15EA	EA- Extension Activities	0	1	-			
			<b>TOTAL</b>	<b>180</b>	<b>140</b>			<b>3800</b>

<b>CODE:15T101a</b>	<b>LC-I- செய்யுள் (இக்கால இலக்கியம்), சிறுகதை, பயன்முறைத் தமிழ், தமிழ் இலக்கிய வரலாறு.</b>	<b>SEM: I</b>
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**அலகு – 1**

மரபுக்கவிதைகள் பாரதியார் பாடல்கள் - பக்திப் பாடல்கள், தமிழ்த்தாய், கண்ணம்மா என் காதலிஇ பாரதிதாசன் பாடல்கள் - தமிழின் இனிமை, நீங்களே சொல்லுங்கள்?, சிறுத்தையே வெளியே வா, பொன்னடியான் - அறத்தால்..., மாணவனே!, சாமி.பழனியப்பன் - சமுதாயமும் நூலகங்களும் தமிழேந்தி - சுற்றுச் சூழல் கெடுவதுவோ?, சாதனை வேண்டும்.

**அலகு – 2**

புதுக்கவிதைகள் அப்துல் ரகுமான் - மறுபக்கம், இன்குலாப் - கொள்ளைக்காரர்கள் எப்படி இருக்கிறார்கள்?, தணிகைச்செல்வன் - தாய், மு.மேத்தா - தேசப்பிதாவிற்கு ஒரு தெருப்பாடகனின் அஞ்சலி, தமிழன்பன் - நல்லாள் நகும், வாலி - பாரதிதாசன், - வைரமுத்து - திருத்தி எழுதிய தீர்ப்புகள், தாமரை - தொலைந்து போனேன், யுகபாரதி - சொல்வதெனில், நா.முத்துக்குமார் - அக்காவின் கடிதம், நாட்டுப் புறப் பாடல்கள் - பக்திப் பாடல்கள், தாலாட்டுப் பாடல்கள், காதல் பாடல்கள், தொழிற் பாடல்கள் - ஒப்பாரிப் பாடல்கள், தெம்மாங்குப் பாடல்கள்.

**அலகு – 3 சிறுகதை**

சிறுகதை மலர் - பிரமி பதிப்பகம், திருச்சி-21. (2017-2018 கல்வியாண்டுக்கு).

**அலகு – 4 பயன்முறைத் தமிழ்**

எழுத்தியல் - எழுத்துப் பிழைகளும், திருத்தங்களும் - இன எழுத்துக்கள் வேறுபாடுகள் - தமிழில் பிறமொழிச் சொற்கள் - வலிமிகுதல், வலி மிகாமை.

பாடநூல் - பயன்பாட்டுத் தமிழ் (இலக்கணக் கையேடு), தமிழ் நாதன் பதிப்பகம், சென்னை – 110.

**அலகு – 5 தமிழ் இலக்கிய வரலாறு**

தற்காலம் - மரபுக் கவிதை-புதுக்கவிதை – தோற்றமும் வளர்ச்சியும், ஹைகூ கவிதைஇ நாட்டுப்புறப் பாடல்கள், மறுமலர்ச்சி

காலக் கவிஞர்கள் - சிறுகதை – தோற்றமும் வளர்ச்சியும்,  
தமிழ்உரைநடை வளர்ச்சி.

<b>CODE:15H101</b>	<b>ELC-I - English for Communicative Competence</b>	<b>SEM:I</b>
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**OBJECTIVES:**

*To expose students to effective communication in the form of prose, biographies and short stories*

*To familiarize students with various forms and functions of the English language*

**UNIT I**

**The Gift of Language** – *J.G.Bruton*

**My Visions for India** – *A.P.J.Abdul Kalam*

**Unlock Your Own Creativity** – *Roger Von Oech*

**UNIT II**

**1.Mahathma Gandhi** – *Francis G.Hutchins*

**2.Mother Teresa** – *John Frazer*

**3.Indira Nooyi** – *An Article*

**UNIT III**

**1.Science and Religion** – *S.Radhakrishnan*

**2.Technology with a Human Face** – *E.F.Schumacher*

**3.And Now E-teachers** – *Robin Abreu*

**UNIT IV**

**1.Vanishing Animals** – *Gerald Durrell*

**2.Climate Change and Human Strategy** – *E.K.Federov*

**3.The Old Folks at Home** – *Alphonse Daude*

**UNIT V**

**1.The Tempest (Retold by Charles Lamb)** – *William Shakespeare*

**2.The Cop and the Anthem** – *O.Henry*

**3.Marriage is a Private Affair** – *Chinua Achebe*

The Text Book has been compiled by the Board of Writers (the Members of Dept of English)

<b>CODE: 15A101</b>	<b>CCI - PROGRAMMING IN PYTHON</b>	<b>SEM:I</b>
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**OBJECTIVES:**

- To understand the basic concepts of Python Programming*
- To give insight for the data structures*
- To imbibe the concepts of file handling and exception handling*
- To give brief overview of standard library*
- To elaborate the concepts of OOP*
- To brief the various applications of python language*

**UNIT-I:**

**Using python:** Installing python- The python Interpreter - Interactive mode - IDLE programming environment - **Basics of Python Language:** comment - variables Strings and String literals - Getting input and Displaying output (input, raw input & print)- Operators and Expressions - **Control Flow Statements: Decision structures and loop control structures**

**UNIT-II:**

**Data Structures:** Strings, List, Tuples, Dictionaries and Set

**UNIT-III:**

Functions - **Modules** - Packages - Python Standard Library

**UNIT-IV:**

File Handling - Errors and Exception Handling - Problem solving using python

**UNIT-V:**

**Object Oriented Programming:** Objects and Classes - Inheritance - **Applications of python:** Web programming, Network programming, **Scientific programming, GUI programming and Game development**

**Books for Reference:**

1. Guido van Rossum, " Python Tutorial - Release 2.3.3" 2003, Python ,Software Foundation Ltd, ISBN 978-1-906966-133.
2. Tony Gaddis, "Starting out with python", 2<sup>nd</sup> edition, Addison Wesley,Pearson, ISBN-13: 978-0132576376. ISBN-10: 0132576376
3. Michael Dawson, "Python programming for the absolute beginner",Premier press, 2003, ISBN-10: 1435455002
4. Jennifer Campbell, Paul Gries, Jason Montojo and Greg Wilson, "Practical proqraming,An Introduction to computer science using Python",2009.
- 5.Al Sweigart, "Invent your own computer games with python", 2<sup>nd</sup> edition, 2008, ISBN 978-0-9821060-1-3.

<b>CODE: 15A102L</b>	<b>CC-IIa - SOFTWARE LAB – I(PYTHON)</b>	<b>SEM:I</b>
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**OBJECTIVES:**

*To have a practical experience in Python programming.  
To learn simple application development*

**CYCLE I**

1. Basic Syntax, Operators
2. Decision Making
3. Loops
4. Data Structures

**CYCLE II**

1. Functions
2. Strings
3. Modules
4. Exception Handling

**CYCLE III**

1. Class and Objects
2. Inheritance, Operator Overloading
3. General Problems

<b>CODE: 15A103A</b>	<b>AC- I - STATISTICAL METHODS</b>	<b>SEM: I</b>
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**OBJECTIVES:**

*The purpose of this course is to introduce fundamental concepts of Statistical methods.*

**UNIT-I:**

Measures of central tendencies and dispersion: Mean, Median, Mode, Standard Deviation, Variance, coefficient of variation.

**UNIT-II:**

Skewness, moments and kurtosis.

**UNIT-III:**

Correlation and Regression Analysis: Types of correlation-Karl Pearson's coefficient of correlation, Rank Correlation coefficient-Regression lines-equations.

**UNIT-IV:**

Definition of probability – Axiomatic approach to probability – Addition and Multiplication Theorems – Conditional Probability – Independent Events - Baye's theorem

**UNIT-V:**

Random Variables- distribution and density functions- Binomial, Poisson and Normal distributions: definitions , moments and simple problems

**Books for study:**

1. S.C.Gupta, "Fundamentals of Statistics", Himalaya Publishing House, 2009, ISBN-13: 9789350517697

*Unit 1: Ch 5( 5.4-5.6, 5.7- 5.7.1,5.7.2), Ch 6(6.9- 6.9.1-6.9.4)*

*Unit 2: Ch 7,*

*Unit 3: Ch 8(8.1-8.1.1, 8.4, 8.7), Ch 9(9.1, 9.2, 9.3-9.3.1-9.3.3)*

*Unit 4: Ch 12(12.7-12.11),*

*Unit 5: Ch 13(13.1-13.5), Ch 14(14.1-14.4)*

**Books for References:**

1. S.C.Gupta and V.K.Kapoor , “Fundamentals of Statistics”, Himalaya PublishingHouse, 1992 , ISBN978-0-07-066909-3.
2. S.P.Gupta and V.K.Kapoor , “Statistical Methods” , S Chand & Co., 2009 ISBN: 978-81-203-8 .

<b>CODE: 15A104A</b>	<b>AC-II-OPERATION RESEARCH FOR COMPUTER APPLICATIONS</b>	<b>SEM: I</b>
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**OBJECTIVES:**

*This course gives emphasis to enhance student’s knowledge in Linear Programming Problem, Transportation Problem, Assignment Problem, Sequencing and Network scheduling.*

**UNIT –I:**

Linear Programming formulations – Graphical Solutions of two variables – Canonical and Standard forms of LPP

**UNIT –II:**

Simplex method for  $<$ ,  $=$ ,  $>$  constraints – Simplex method-Big M method

**UNIT –III:**

Transportation problem – Algorithm – degeneracy algorithm – Degeneracy in TP— Unbalanced TP – Assignment Algorithm – Unbalanced Assignment problem

**UNIT –IV:**

Sequencing problem – Processing of n jobs through two machines – Processing of n job through three machines – Processing of two jobs through m machines

**UNIT –V:**

Network – Fulkerson’s rule – Measure of activity – PERT computations – CPM computation

**Books for study:**

1. Kanti Swarup, P.K.Gupta, ManMohan, Operations Research, Sultan Chand &Company Ltd, 11<sup>th</sup> Edition, 2003

*Unit 1: Ch1 & 2 , Unit 2: Ch3 , Unit 3: Ch6 , Ch7( 7.1-7.3)*

*Unit 4: Ch 10(10.1-10.5), Unit 5: Ch 21*



**Books for Reference:**

1. A .Taha ,**Operations Research**, Keerthi Publishing House,1997,ISBN : 0123694639

2. Prem Kumar Gupta and D.S.Hira, **Problems in Operations Research**, S.Chand, 2010, ISBN-13, 9788121909686. ISBN-10, 8121909686

<b>CODE: 15VEDa</b>	<b>VE-VALUE EDUCATION</b> (வாழ்வியல் கல்வியும் மனித உரிமைகளும்)	<b>SEM:I</b>
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**அலகு 1**

**வாழ்வியல் கல்வி – திறன் மேம்பாடும் உயர் பண்புகளும்**

கல்வி, வாழ்வியல் கல்வியின் நோக்கம் - வாழ்வியல் கல்வியின் பரிணாம வளர்ச்சி - வாழ்வியல் கல்வியின் கூறுகள் - சுய முன்னேற்றம் - திறன் மேம்பாடு - உயர்பண்புகள் - தன்மதிப்பீடும் சுயபரிசோதனையும் - பாலினச் சமத்துவத்தை உளமாரப் பின்பற்றுதல் - மாற்றுத் திறனாளிகள், மனவளம் குன்றியோர், வயதில் பெரியவர்கள், அனுபவசாலிகள், சான்றோர்கள், குடும்ப உறுப்பினர்கள், அருகில் வசிப்பவர்கள், சுற்றத்தார், உடன் பணியாற்றுவோர் இவர்களுக்கு மதிப்பளித்தல் - நற்பண்புகளும் நடத்தை உருவாக்கமும் - உண்மை - ஆக்கத்திறன் - தியாகம் - நேர்மை - கட்டுப்பாடு - உதவி செய்யும் மனப்பான்மை- - சகிப்புத்தன்மை - அறிவியல் கண்ணோட்டம்

**அலகு 2**

**தேசிய, உலக முன்னேற்றத்திற்கான வாழ்வியல் கல்வி**

தேசம், சர்வ தேசங்கள் குறித்த எண்ணங்கள் - நமது நாடு - அரசமைப்பு - மக்காளாட்சித் தத்துவம் - சமதர்மம் - மதச்சார்பின்மை - சமத்துவம் - சமூக நீதி, தனியுரிமை - சுதந்திரமும் சகோதரத்துவமும் சமூகப் பண்புகள் - இரக்கம் மற்றும் நேர்மை, சுயகட்டுப்பாடு, உலகளாவிய சகோதரத்துவம் - தொழில் சார் பண்புகள் - அறிவு வேட்கை - தொழிலில் நேர்மை - முறைமை - காலந்தவறாமையும் நம்பிக்கையும் - மதம் சார்ந்த பண்புகள் - சகிப்புத்தன்மை, மெய்யறிவு, நன்னடத்தை - அழகியல் பண்புகள் - இலக்கியம், நுண்கலைகள் ஆகியவற்றைப் பயில்தல், சுவைத்தல், மனதாரப் பாராட்டுதல் மதித்தல், பாதுகாத்தல், தேசிய ஒருமைப்பாடும் சர்வதேசப் புரிதலும்.

**அலகு 3**

**அறப்பண்புகள் மற்றும் வாழ்வியலில் உலகளாவிய பெருவளர்ச்சிகள் ஏற்படுத்தும் தாக்கங்கள்**

பண்பண்பாட்டு முரண்பாடுகளின் தாக்கங்கள் - எல்லை

தாண்டிய கல்வி - தொழில் சார்ந்த அறை கூவல்களும் சமரச இணக்கமும் - பொருளியல் சிந்தனைகள் - மக்கள் தொடர்புச் சாதனங்கள் - இளமை உணர்ச்சி வேக நடத்தையின் நவீன அறைகூவல்கள் - இல்லறமும் நல்லுணர்வும் - ஒப்பீடும் போட்டி இடுதலும் - நேர்மறை, எதிர்மறை எண்ணங்கள் - அகந்தை - சினம் - சுயநலம் - அறைகூவல்கள்

#### அலகு 4

**உடல், உள்ள நலமும் நோய் தீர்க்கும் செயல்பாடுகளும்**

உணவுப் பழக்கமும் உணவு முறைகளும் - பொருந்தும் உணவுகள் - பொருந்தா உணவுகள் - மனக் கட்டுப்பாடு - மனத்திண்மை - எளிய உடற்பயிற்சி - தியானம் - மனம், ஆன்மா சார்ந்த விளைவுகள் - யோகா - நோக்கங்கள் - வகைகள் - முறைகள் - ஆசனங்கள் - ஆசைகளை ஒழுங்குபடுத்துதல் - கவலை நீக்குதல் - சினம் தணிதல் - நெடுநீர், மறதி, சோம்பல் தவிர்த்தல் - தூக்கம் முறைப்படுத்துதல் - தூக்கம், இழப்புகளை எதிர்கொள்ளல் - புகை, மது முதலானவைகளின் தீங்கு உணர்தல்- வாழ்த்துகளின் பயன்கள்

**குறிப்பு :** இந்த அலகு உடற்பயிற்சி - தியானம் - யோகா செய்முறைப் பயற்சிகளுடன் கூடியது.

#### அலகு 5 மனித உரிமை, மனித உரிமை கருத்துக்கள்

தேசிய மற்றும் பன்னாட்டுக் கண்ணோட்டங்கள் - மனித உரிமையின் பரிணாமம் - மனித உரிமையின் பரந்த வகைப்பாடுகள் வாழ்தற்கான உரிமை, சுதந்திரம், கண்ணியத்துடன் வாழ்வதற்கான உரிமைகள் - கலாச்சாரம் மற்றும் கல்விக்கான உரிமைகள் - பொருளாதார உரிமைகள் - அரசியல் உரிமைகள் - சமூக உரிமைகள் - பெண்கள் மற்றும் குழந்தைகளின் மனித உரிமை - சமூகப் பழக்கங்களும் அரசியலமைப்புப் பாதுகாப்புகளும்.

Code:15T202a	LC-II- செய்யுள் (பக்தி,இடைக்கால இலக்கியம்)தமிழ்ச் செம்மொழி வரலாறு, மொழிபெயர்ப்பியல், தமிழ் இலக்கிய வரலாறு	Sem:II
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#### அலகு - 1

தேவாரம் - திருஞானசம்பந்தர் திருவையாறு திருமுறைப் பதிகம் -3 “புலனைந்தும் பொறிகலங்கி” எனத் தொடங்கும் பதிகம், திருமந்திரம் -

10 பாடல்கள் ஒன்றவன்... (பாடல் எண் - 1), தீயினும்... (பாடல் எண் - 8), பிறப்பிலி... (பாடல் எண் - 25), வானினு... (பாடல் எண் - 30), அப்பனை... (பாடல் எண் - 36), கல்லா அரசனும்... (பாடல் எண் - 238), வேட நெறி... (பாடல் எண் - 240), வேந்தன் உலகை... (பாடல் எண் - 245), அமுதாறும்....( பாடல் எண் - 248), தன்னையறியாது ....(பாடல் எண் - 255). நாலாயிரத் திவ்வியப் பிரபந்தம் - குலசேகர ஆழ்வார் பெருமாள் திருமொழி - “ஊனேறு செல்வத் துடற்பிறவி” எனத்தொடங்கும் பாடல் முதல் 11 பாடல்கள் (677-687), திருவிளையாடல் புராணம் - திருநாட்டுச் சிறப்பு 20 பாடல்கள், திருஅருட்பா - பிள்ளைச் சிறு விண்ணப்பம் 3394 முதல் 3409 வரை 16 பாடல்கள்.

### அலகு - 2

கலிங்கத்துப் பரணி - காடு பாடியது, தமிழ் விடு தூது - 179 ஆவது கண்ணி முதல் 198 ஆவது கண்ணி முடிய 20 கண்ணிகள், குற்றாலக் குறவஞ்சி - எங்கள் மலையே 5 பாடல்கள், முக்கூடற்பள்ளு 07 பாடல்கள் - நாட்டுவளம் -கோட்டு வளங்...(பாடல் எண் - 16)இ மேடை யேறித்தன்... (பாடல் எண் - 17)இ கறைபட் டுள்ளது... (பாடல் எண் - 21), மீதுயர்ந் திடுங்.... (பாடல் எண் - 25), நகர்வளம் - கொண்டல் கோபுரம்... (பாடல் எண் - 19) கோதி மாமணி...(பாடல் எண் - 23) கார் பூத்த வண்ணனார்... (பாடல் எண் - 28)

### அலகு - 3 தமிழ்ச் செம்மொழி வரலாறு

செம்மொழி விளக்கம் - செம்மொழி வரலாறு - உலகச் செம்மொழிகள் - இந்தியச் செம்மொழிகள் - செம்மொழிக்கான தகுதிகள் அல்லது செம்மொழிப் பண்புகள் - தமிழ்ச் செம்மொழி நூல்கள்.

பாடநூல் - தமிழ்ச் செம்மொழி வரலாறு - முனைவர் மு.சாதிக்பாட்சா, இராஜா பப்ளிகேசன், திருச்சி-23.

### அலகு - 4 மொழிபெயர்ப்பியல்

ஒரு மடல்(கடிதம்) அல்லது ஒரு பத்தி ஆங்கிலத்திலிருந்து தமிழில் மொழிபெயர்த்தல்.

பாடநூல் - மொழிபெயர்ப்பியலும் மொழிபெயர்ப்புகளும் - மகிழினி பதிப்பகம், சென்னை- 106.

### அலகு - 5 தமிழ் இலக்கிய வரலாறு

சமயமும் தமிழும், சிற்றிலக்கியங்கள், பக்தி இலக்கியங்கள், முத்தொள்ளாயிரம், சித்தர்கள், உரையாசிரியர்கள், இலக்கண நூல்கள், நிகண்டுகள்.

<b>Code:15H202</b>	<b>ELC-II–English for Proficiency</b>	<b>Sem:II</b>
<b>Code:15H202</b>	<b>ELC-II–English for Proficiency</b>	<b>Sem:II</b>

**OBJECTIVES:**

*To expose students to the wisdom and experience written in the form of prose, biographies and short stories*

*To familiarize students with various forms and functions of the English language*

**UNIT I**

1. **The Beauty Industry** – *Aldous Huxley*
2. **A Talk on Advertisement** – *Herman Wouk*
3. **On Seeing Films** – *Anonymous*

**UNIT II**

1. **Charlie Chaplin**– *From his Biography*
2. **Subash Chandra Bose** – *M.L Ahuja*
3. **Isaac Newton** – *Colin Swatridge*

**UNIT III**

1. **The Need for Excellence** – *N.R.Narayana Murthy*
2. **Travel by Train** – *J.B.Priestly*
3. **Tight Corners** – *E.V.Lucas*

**UNIT IV**

1. **Letter to Bapu from Generation Next** – *Chetan Bhagat*
2. **Human Rights and Legal Responsibilities** – *Nani A.Palkhivala*
3. **Cellphone Epidemic** – *Claudia I.Haas*

**UNIT V**

1. **Three Days to see** – *Helen Keller*
2. **The Four Brothers** – *Walter De La Mare*
3. **A Different Kind of Learning** – *Jade Snow Wong*

CODE:15A205	<b>CC-III- PROGRAMMING IN C AND DATA STRUCTURES</b>	SEM:II
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**OBJECTIVES:**

*To understand the basic concepts of C Programming*

*To give insight for the Arrays and functions*

*To imbibe the concepts of Pointers and file handling*

*To give brief overview of standard library*

*To brief the concept of Data Structure*

**UNIT-I:**

**Overview of C :** Constants, Variables and Data types - Preprocessor - Operators - Expressions - Managing I/O operations - **Decision making:** branching - **looping.**

**UNIT-II:**

Arrays - **User defined Functions:** Definition - Return values and their types - Function calls - Function declaration - Category of functions - Nesting of functions - Recursion- **Structures:** Defining a structure - Declaring structure variables - Accessing structure through members - Initialization - Copying and comparing structure variables - Arrays of structures - Unions

**UNIT-III:**

**Pointers:** Understanding pointers - Accessing address of a variable - Declaring pointer variables - Initialization of pointer variables - Accessing a variable through its pointers - Chain of pointers - Pointer expressions - Pointer increment and scalar factor - Pointers and arrays. **File Management in C:** Defining a file - Opening and closing a file - I/O operations on files - Error handling.

**UNIT-IV:**

Programming Methodologies - **Memory Management** - Stack: Introduction to stack - primitive operations on stack.

## **UNIT-V:**

Queue: Introduction and primitive operations on queue- circular queue - **Linked list**:Introduction to linked list - primitive operations on linked list.

### **Books for Study:**

1. E. Balagurusamy, "**Programming in ANSI C**" -- Tata McGraw Hill Publication - Fourth Edition. (For Unit I,II,III and IV ) ISBN: 10 0-07-064822
2. Ellis Horowitz, Sartaj Sahani, "**Fundamentals of Data Structures**",Golgotia Publishers.(For Unit V) ISBN 10:0716782170 ISBN 13: 9780716782179

### **Books for Reference:**

1. Byron S. Gottfried, "**Programming with C**", Schaum's Outline Series - Tata McGraw- Hill Publication.
2. Mullish Cooper, "**The Spirit of C**", Schaum's Outline Series - Tata McGraw- Hill Publication. ISBN: 0314285008.
3. Yeswant Kanetkar, "**Let us C**", BPB Publications, ISBN 10: 8176566217.

CODE:15A206L	<b>CC-IIb- SOFTWARE LAB-II</b> <b>C AND DATA STRUCTURES</b>	SEM:II
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**OBJECTIVES:**

*To have a practical experience in 'C' programming.*

*To learn the concepts of Data Structures*

**Preliminaries**

1. Simple C programs
2. Programs using conditional operators
3. Program using while and do-while
4. Program using If statement
5. Program using for statement

**Cycle I:**

1. Functions
2. Storage Classes
3. Structure
4. Union

**Cycle II:**

1. Pointers
2. File Management

**Cycle III:**

1. Stack
2. Queue
3. Linked list

<b>CODE:15A207A</b>	<b>AC- III- ALGEBRA AND CALCULUS</b>	<b>SEM:II</b>
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**OBJECTIVES:**

*On successful completion of this course the students will gain the knowledge about differentiation, integration, differential equations, Laplace transforms and matrices*

**UNIT-I:**

Types of Matrices – Characteristic Equation – Eigen Values – Eigen Vectors – Cayley Hamilton’s Theorem (without proof)

**UNIT –II:**

Successive differentiation-Leibnitz’s theorem and its applications

**UNIT –III:**

Evaluation of Integrals of types

1.  $\int \frac{dx}{ax^2 + bx + c}$
2.  $\int \frac{dx}{\sqrt{ax^2 + bx + c}}$
3.  $\int \frac{(px + q)dx}{ax^2 + bx + c}$
4.  $\int \frac{(px + q)dx}{\sqrt{ax^2 + bx + c}}$

Integration by parts – Definite integrals and its properties

**UNIT –IV:**

To solve the second order differential equations when the RHS is of the type  $e^{kx}, \sin kx, \cos kx, x^k, e^{ax} X$

**UNIT –V:**

Definition of Laplace transform - Laplace transforms of  $e^{at}, \cos at, \cosh at, t^n$  - first shifting theorem – Laplace transforms of  $f'(t), f''(t)$  -Inverse Transforms relating to the above standard forms.

**Books for study:**



1. A.Abdul Rasheed, *Allied Mathematics*, Mc Graw Hill Education Pvt Ltd, 2006

*Unit 1: Ch 3(3.1,3.3,3.4), Unit 2: Ch 6(6.4), Unit 3: Ch 7(7.3-7.3.1,7.3.2, 7.4, 7.6)*

*Unit 4: Ch 10( 10.4), Unit 5: Ch 12(12.1, 12.2), ISBN-13, 9788182091443. ISBN-10, 8182091446*

### **Books for References**

1. M.K.Venkartraman , *Engineering Mathematics*, National Press Club ,1998. ISBN: 978-81-7758-123-2.

2. P.Kandasamy, K.Thilagavathy, K.Gunavathy, *“Engineering Mathematics”*, ISBN : 8121911303, 9788121911306.

<b>CODE:15XA21</b>	<b>SKBC-I-IMAGE EDITING AND MANIPULATION</b>	<b>SEM:II</b>
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### **OBJECTIVES:**

*To learn picture manipulation techniques, color management and picture types.*

*Various image editing tools are used for image manipulation.*

### **UNIT-I :**

Working with interface - Windows and Menus - Docks and Dialogs - Images and Canvases - Digital images - Raster graphics Vs Vector Graphics - **Resolution and Image size** - Color Depth - Color Spaces and Color Modes - Compressions.

### **UNIT-II:**

**Working with files** - Opening files - Working in the image window - Copying and Pasting - Saving files **TOOLS:-** View Menu- Selection Tools - Image Tools - Paint Tools - Color Tools - Creating Path- Managing Path - Using Paths.

### **UNIT - III:**

**Working with Layers and Masks:** Managing Layers - Manipulating Layers - Blending Modes- Using Layer Masks - Understanding Channels -

Using Channels - Transforming Images - Sizing - Cropping - Flipping - Liquid Rescale - Transformation tools.

#### UNIT - IV:

Adjusting Colors: Using Color Menu - Using Automated Adjustments - Remapping colors - Analyzing your colors- Working with Text - Adding and Editing Texts.

#### UNIT - V:

Filters: Blur- Enhance - Distortion - Light and Shadow - Noise - Render fillers.

#### Book for Study:

Material provided by the Department

#### Books for Reference:

1. Jason Van Gumster, Robert Shimonski, "GIMP Bible", Willey Publishing. Inc., ISBN-13 978-0470523971, ISBN-10: 470523972.

2. Karin Kylander & Olof S. Kylander, "GIMP User's Manual".

<b>Code:15EVS</b>	<b>EVS -Environmental Science</b>	<b>Sem:II</b>
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#### **Objectives**

*To create awareness among the students about our environment, its values, and the need for protecting it for the well being of mankind in the months and years to come.*

#### **UNIT - I**

**Multidisciplinary nature of Environmental Science :** Definition – Scope and importance. Natural resources: Land resources: Lands as resources and their uses – land degradation, soil erosion. Forest resources: Importance of forest resources - Major and minor forest produces – Need for afforestation – Water resources: Availability of surface and ground water – Importance of water conservation – Food resources: World food problems and possible solutions. Effect of modern agriculture.

#### **UNIT - II**

**Mineral resources:** Their availability and uses – environmental effects of extracting. Energy resources: Growing energy needs –

renewable and non-renewable energy sources – Use of alternate energy sources – Case studies – Equitable use of resources for sustainable life styles.

### **UNIT-III:**

**Ecosystem:** Concept – Structure and function of Grass land, Pond and Forest ecosystem – Food chains, food webs and Ecological pyramids. Biodiversity: Definition – Genetic, Species and Ecosystem diversity – Biogeographical classification of India – Values of Biodiversity – Biodiversity at global, national and local levels – India as a mega-diversity nation – Hotspots of Diversity – Threats to Biodiversity – Endangered and Endemic species of India – *In situ* and *Ex situ* conservation of biodiversity.

### **UNIT-IV:**

**Environmental pollution:** Definition, Causes, effects and control measures of Air, Water, Soil, Marine, Noise, Thermal and Nuclear pollution – Solid Waste Management: Causes, effects and management of urban and industrial wastes

### **UNIT-V:**

**Social issues and environment:** Effects of deforestation, Construction of Dams, Mineral mining on environment – Natural disasters and their management: Floods, Earthquake, Cyclone and Landslides – Conflicts over water – Advantages of rainwater harvesting and watershed management – Climate change, global warming, acid rain, ozone depletion. Environmental ethics – Case studies- Population explosion- Effects of population explosion on environment – Various acts and legislations, environment and human health, human rights, HIV/AIDS, women and child welfare. Role of individual in preservation of environment.

### **List of Reference Books**

- ✓ Anon. 2000. *Environmental Studies (U.G.C Syllabus)*, Periyar E.V.R College, Tiruchirapalli.
- ✓ Asthana, D.K., Meera, A. 2006. *A Text Book of Environmental Studies for under graduate students*. S.Chand & Company Ltd., New Delhi.

- ✓ Benny Joseph. 2005. *Environmental Studies*. Tata McGraw-Hill Publishing Company Ltd., New Delhi.
- ✓ Kumaraswamy, K., Alagappa Moses, A. and Vasanthi, M. 2004. *Environmental Studies (A Text Book for all under graduate students)*. Bharathidasan University, Tiruchirapalli.

<b>CODE:15T303</b>	<b>LC-III- செய்யுள்</b> (காப்பியங்கள்),புதினம்,தமிழ் இலக்கிய வரலாறு	<b>SEM:III</b>
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**அலகு - 1**

1. சிலப்பதிகாரம் - கனாத்திறன் உரைத்த காதை (80 வரிகள்)
2. மணிமேகலை - ஆபத்திரன் திறன் அறிவித்த காதை (115 வரிகள்)

**அலகு - 2**

1. கம்பராமாயணம் - இரணியன் வதைப் படலம் (56 பாடல்கள்)
2. பெரியபுராணம் - இளையான் குடி மாறனார் புராணம் (27 பாடல்கள்)
3. சீறாப் புராணம் - பாந்தள் வசனித்தப் படலம் - (18 பாடல்கள்)

**அலகு - 3**

1. இராவண காவியம் - தமிழகக் காண்டம் - (தலைமக்கள் படலம்-28 பாடல்கள்)
2. இயேசு காவியம் - (உவமை வழிச் செய்தி முழுவதும்)

**அலகு - 4 புதினம்**

**பாடநூல்**

சக்கை, கலைச் செல்வி, என்.சி.பி.எச். வெளியீடு, சென்னை - 600 098.

**அலகு - 5 தமிழ் இலக்கிய வரலாறு**

காப்பியங்கள் - ஐம்பெருங்காப்பியங்கள், ஐஞ்சிறு காப்பியங்கள், பிறகாப்பியங்கள் நாவல் - தோற்றம், வளர்ச்சி,-அயல் நாடுகளில் தமிழ்.

<b>CODE:15H303</b>	<b>ELC-III-ENGLISH FOR EMPLOYABILITY</b>	<b>SEM:III</b>
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**OBJECTIVES:**

*To expose students to the language items tested in the competitive examinations in order to strengthen their employability traits*

*To familiarize students with different forms of multiple choice and descriptive type questions*

**UNIT I**

Spellings

Vocabulary – Synonyms and Antonyms

**UNIT II**

Spotting Errors

Errors and How to Avoid Them

**UNIT III**

Reading Comprehension

Jumbled Sentences

**UNIT IV**

Words often confused

Idioms and Phrases & Phrasal Verbs

Dialogue Writing

**UNIT V**

Public Speaking

Interview skills and Group Discussion

Letter Writing & CV Writing

Report Writing

Paragraph and Essay Writing

<b>CODE:15A308</b>	<b>CC-IV-DATA BASE SYSTEM</b>	<b>SEM:III</b>
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**OBJECTIVES:**

*To understand various data models.*

*To develop and refine the conceptual data models, entities, attributes.*

*To apply normalization techniques.*

*To learn database system architecture*

**UNIT-I:**

**An Overview of Database Management :** Introduction - Definition Of Database System - Data Independence - Relational Systems Database System Architecture : The Three Levels of the Architecture- Database Administrator-Client Server Architecture- Distributed Processing.

**UNIT-II:**

**Basic File System:** Introduction - Factors affecting physical Organization of data - Secondary storage devices - Basic Terminology - Disk organization - File organization - Heap, Sequential Indexed sequential - Hashed file organization - key - address - Transformations.

**UNIT-III:**

**Relational Data Model:** Basic Definition and terminology - Relational Algebra - SEQUEL or SQL - QUEL - QBE. **The Relational Calculus:** The tuple Calculus.

**UNIT-IV:**

**Relational Database Design:** Functional Dependencies - Introduction-Basic Definitions - Normalization - First, Second, Third Normal Forms-BOYCE / CODD Normal Form.

**UNIT-V:**

**Network and Hierarchical Data Base System:** Network Data Model - Introduction - CODASYL model - Commands for data

manipulation - Hierarchical Data base system - IMS Physical Database - TMS External model - The PCB mask - Security - Access control cryptosystem.

**Book for Study:**

1. C.J.Date , "*An Introduction to Database Systems*", Pearson Education, Seventh Edition 2000. (Unit I - Chapters 1,2. Unit IV - Chapters 10,11). ISBN 81-7808- 231-4

2. Arun K.Majumdar & Pritmoy Bhattacharyya, "*Data Base Management System*", Tata McGraw Hill, New Delhi, 1999. (Unit II, Unit III, Unit V) ISBN 0-07-462239-0

**Books for Reference:**

1. Bepin. C.Desai, " *An Introduction to Data Base System*", Galogotia Publications Private limited.

2. Ivan Bayross, " *SQL and PL/SQL*", BPB Publications, New Delhi, 2003. ISBN 81 - 7656 - 072 - 3.

CODE:15A309L	CC-Va–SOFTWARE LAB-III[RDBMS]	SEM:III
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**OBJECTIVES:**

To provide in depth programming knowledge in RDBMS.

**Cycle I**

1. DDL Commands
2. DML Commands
3. DCL Commands
4. TCL Commands

**Cycle II**

1. Queries using operators  
Logical operators  
SET operators

## 2. Nested queries using SQL

Sub query

Join

3. Built in functions of SQL

4. Creating views and querying in views

## 5. Sequence

6. SQL Reports

### Cycle III

1. Cursors

- Implicit
- Explicit

2. Triggers

3. Functions

4 Procedures

<b>CODE:15A310A</b>	<b>AC –IV – PRINCIPLES OF ACCOUNTANCY</b>	<b>SEM:III</b>
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### **OBJECTIVES:**

*To introduce the basic accounting concepts*

#### **UNIT-I:**

Introduction-Accounting Concepts and conventions-Journal-Leadger-Trail Balance.

#### **UNIT-II:**

Subsidiary books- purchase-Purchase return-Sales, Sales return-Cash Book.

#### **UNIT-III:**

Final Accounts of a solve trader-Adjustments-Outstanding, prepaid expenses and income-Provision on Debtors and Creditors-Interest on Capital and Drawings- Depreciation.

#### **UNIT-IV:**

Depreciation-Meaning-Methods-Straight line method-Diminishing balance method- Annuity method-Sinking fund method.

#### **UNIT-V:**



Branch Accounts-Departmental Accounts

**Books for Study:**

1. M.C.Shukla, T.s Grewal S.C.Gupta , "Advanced Accountancy(vol-1)" , .Chand&Co.LTD, New Delhi.

**Books for Reference:**

S.P.Jain and B.L Narang , *Advanced Accountancy* , Kalyani Publishing, New

<b>Code:15A311L</b>	<b>AC-Va-ACCOUNTING PACKAGE LAB</b>	<b>Sem:III</b>
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Delhi.

2. R.L.Gupta and M.Radhaswamy,*Advanced Accountancy*, S.Chand Publication, New Delhi.

3. M.A.Arulanandham and K.S.Raman, *Advanced Accountancy*,Himalaya Publication, Mumbai.

**OBJECTIVES:**

*To have practical experience in handling accounting packages.*

**UNIT-I:**

Fundamentals of Computerized Accounting - Computerized Accounting vs manual accounting - Architecture and Customization of tally - features of tally- configuration of tally.

**UNIT-II:**

Tally Screen and Menus - Creation, Select, Shout, Alter and Delete a company Groups, Ledger creation, Display, Alter and Delete.

**UNIT-III:**

Voucher entry - Different Types of Vouchers - Deleting and editing the vouchers - Trial Balance - Final Accounts with adjustments - Service tax.

**UNIT-IV:**

Introduction to Inventories, Creation, Display, Alter and Delete the Stock Groups, Stock category, Stock Items, Godown, **Units** of measurement - Different types of vouchers using inventory - FIFO, LIFO method - Average cost - Standard cost - Purchase Orders - sales order - Stock vouchers - VAT calculation (Value Added Tax).

**UNIT-V:**

Introduction to Cost, Creation, Edit, Alter and Deletion of Cost Center and Cost categories. Usage of cost category and cost center in voucher entry - Category summary.

<b>CODE:15XA32L</b>	<b>SKBC- II – IMAGE EDITING LAB</b>	<b>SEM:III</b>
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**Book for Study:**

1. A.K Nadhani, K.K. Nadhani, *"Implementing tally 7.2"* - BPB Publication - New Delhi-1.

**Books for Reference:**

1. S.V. Srinivasa vallabhan, *"Computer application in business"*, - Sultan hand & sons- New Delhi. C.Nellai kannan, Tally, Nels Publications.

**OBJECTIVES:**

*To learn practically the various techniques involved in animation and image editing.*

1. Two Images Layer Masking
2. Compose old Images to New Images
3. Convert New Images into old Images
4. Wind Effect on an Image
5. Create own Background Using Various Tools
6. Color Management
7. Pattern Filling
8. Image Slicing with path Tool and Marquee Tool
9. Creating a Blazing Flame Text
10. A simple Animation

<b>CODE:15GS</b>	<b>Gender Studies</b>	<b>SEM:III</b>
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## ***FOUNDATION COURSE IN GENDER STUDIES***

### **Objectives**

*To make boys and girls aware of each others strengths and weakness.*

*To develop sensitivity towards both genders in order to lead an ethically enriched life.*

*To promote attitudinal change towards a gender balanced ambience and women empowerment.*

### **Unit - I : Concepts of Gender**

Sex – Gender- Biological Determination – Patriarchy -Feminism- Gender Discrimination- Gender Division of Labour – Gender Stereotyping- Gender Sensitivity – Gender Equity – Gender Equality- Gender Mainstreaming – Empowerment.

### **Unit – II: Women’s Studies vs Gender Studies**

UGC’s Guidelines –VII to XI Plans – Gender Studies: Beijing Conference and Convention on the Elimination of All forms of Discrimination against Women (CEDAW) - Exclusiveness and Inclusiveness

### **Unit – III: Areas of Gender Discrimination:**

Family – Sex ratio – Literacy - Health – Governance- Religion- Work Vs Employment –Market-Media –Politics –Law – Domestic Violence-Sexual Harassment – State Policies and Planning.

### **Unit – IV: Women Development and Gender Development**

Initiatives- International Women's Decade – International Women's Year –National Policy for Empowerment Year 2001 – Mainstreaming Global Policies.

### **Unit – V: Women's Movement and Safeguarding Mechanism in India**

National Commission for Women (NCW) – All Women Police Station- Family Court- Domestic Violence Act – Prevention of Sexual Harassment at Work Place- Supreme Court Guidelines – Maternity Benefit Act –Pre-natal Diagnostic Act - Hindu Succession Act 2005- Eve Teasing Prevention Act – Self Help Group -73<sup>rd</sup> and 74<sup>th</sup>

<b>CODE: 15T404</b>	<b>LC-IV- செய்யுள் (பழந்தமிழ் இலக்கியம்), நாடகம், தமிழ் இலக்கிய வரலாறு, கட்டுரை வரைவியல்</b>	<b>SEM:IV</b>
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Amendment Act for PRIS.

#### **Book for Study:**

- *N.Manimekalai and S.Suba –Gender Studies- Bharathidasan University- Trichirappalli-620024.*

#### **Reference Books:**

- *V.S. Gurusamy- Empowerment of Women in India – New Century Publications-New Delhi-First Edition-2008.*

#### **அலகு – 1**

##### **குறுந்தொகை – 05 பாடல்கள்**

1. “நள்ளென் றன்றே .....” (பாடல் எண்- 6)
2. “கழனி மாஅத்து விளைந்துகு ....” (பாடல் எண் -8)
3. “கான மஞ்சை ...” (பாடல் எண் - 38)
4. “யாயும் யாயும் .....” (பாடல் எண் - 40)
5. “கடும்புனல் தொடுத்த ...” (பாடல் எண் - 103)

##### **ஐங்குறுநூறு – மருதம் - வேழப் பத்து -10 பாடல்கள்**

##### **அகநானூறு - 05 பாடல்கள்**

1. “அன்னாய வாழிவேண் டன்னை ....” (பாடல் எண் - 68)
2. “சிலம்பிற் போகிய ...” (பாடல் எண் - 302)

3. “பெரும் பெயர் மகிழ்ந பேணா ...” (பாடல் எண் - 306)
4. “நீலத் தன்ன நீர்பொதி ...” (பாடல் எண் - 314)
5. “சாரல் யாஅத்து உயர்சினை ...” (பாடல் எண் - 337)

**புறநானூறு - 05 பாடல்கள்**

1. “நளியிரு முந்நீர் ஏணியாக ...” (பாடல் எண் 35)
2. “பாணன் சூடிய...” (பாடல் எண் 141)
3. “உற்றுழி உதவியும்...” (பாடல் எண் 183)
4. “கேட்டன் மாத்திரை யல்லதி யாவதும்...” (பாடல் எண் 216)
5. “யாதும் ஊரே...” (பாடல் எண் 192)

அலகு - 2

**திருக்குறள் 2 அதிகாரங்கள் -- ஊக்கமுடைமை , அவையடக்கம்**

**இனியவை நாற்பது - 10 பாடல்கள்**

1. கற்றல் சான்றோரைச் சார்தல் - (பாடல் எண் 1)
2. அன்பும் நிலவும - (பாடல் எண் -9)
3. குழந்தை அவையஞ்சாமை-(பாடல் எண்-12)
4. கற்றது உரைத்தல் பழகுதல் (பாடல் எண் -16)
5. துறவிகளின் இயல்பு - (பாடல் எண்-18)
6. புறங்கூறாமை (பாடல் எண் - 19)
7. வழங்கல் நல்லோராய் வாழ்தல் (பாடல் எண் -22)
8. செய்ந்நன்றி அடைக்கலம் வெளவாமை (பாடல் எண் -30)
9. இரவுப்பயணம், நற்பேச்சு வேண்டா நட்பு (பாடல் எண் -34)
10. கல்விக்கு நிகரான இனியது இல்லை (பாடல் எண் - 40)

**நல்வழி - 10 பாடல்கள் (பாடல்)**

1. காலம் அறிந்து செய்க (பாடல் எண் -4)
2. பேராசை கூடாது - (பாடல் எண் - 6)
3. குடிபிறந்தார் வறுமையிலும் உதவுவார் (பாடல் எண் -9)
4. சிவாய நமவென்று - (பாடல் எண் - 15)
5. உயர் நோக்கம் இன்மை - (பாடல் எண் -19)
6. வஞ்சனை யில்லார்க்கு வாழ்வு சிறக்கும் - (பாடல் எண்- 21)
7. மன அமைதி வேண்டும் - (பாடல் எண் -28)
8. பொருள் இருக்கும் போதே அறம் செய்க (பாடல் எண்-32)
9. வன்சொல்லும் இன்சொல்லும் - (பாடல் எண்-33)
10. உண்மை நிலை - (பாடல் எண் 38)

**திரிகடுகம்- 10 பாடல்கள்**

1. “கல்லார்க்கு இன்னாய...”(பாடல் எண் - 3)
2. “தொல்லவையுள் தோன்றுங் ...”(பாடல் எண் - 8)

3. “பெருமை யுடையா...” (பாடல் எண் - 9)
4. “கணக்காயர் இல்லாத...”(பாடல் எண் - 10)
5. “விளியாதான் கூத்தாட்டுக்...”(பாடல் எண் - 11)
6. “ஆசை பிறன்கட்...”(பாடல் எண் - 20)
7. “சிலசொற் பெருந்தோள்...”(பாடல் எண் - 47)
8. “காவோ டறக்குளந்...”(பாடல் எண் - 70)
9. “கயவரைக் கையிகந்து ...” (பாடல் எண் - 77)
- 10.“பத்திமை சான்ற...”(பாடல் எண் - 100)

### அலகு - 3 நாடகம்

பாடநூல் - பிசிராந்தையார் - பாரதிதாசன், தமிழ் நாதன் பதிப்பகம், சென்னை - 110

### அலகு - 4 தமிழ் இலக்கிய வரலாறு

சங்க காலம் - சங்க இலக்கியங்கள், சங்க காலம் பொற்காலம், சங்க மருவிய காலம் - கீழ்க்கணக்கு நூல்கள் தொல்காப்பியம், அகத்தியம், பிற்காலப் புலவர்கள், நாடகம் தோற்றம் வளர்ச்சி.

### அலகு - 5 கட்டுரை வரைவியல் - பொதுக்கட்டுரை

பாடநூல் - பொதுக்கட்டுரைகள், மகிழினி பதிப்பகம், சென்னை-106.

### பாடநூல்கள்

செய்யுள் திரட்டு (நான்கு பருவங்கள்), தமிழ்த்துறை வெளியீடு. தமிழ் இலக்கிய வரலாறு, மு.அருணாசலம், இராஜா வரதராஜா, அருண் பதிப்பகம், திருச்சி-1. (2017-2018 கல்வியாண்டுக்கு).

Code:15H404	ELC-IV- English Through Literary Texts	Sem:IV
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### OBJECTIVES:

*To expose students to the creative use of the English language and make them appreciate it*

*To familiarize students with various forms and styles of writing in English*

### **UNIT I --- British Poetry**

1. Incident of the French Camp – *Robert Browning*
2. Ozymandias – *P.B. Shelley*
3. Lotus Eaters – *Alfred Tennyson*

### **UNIT II --- Indian Poetry in English**

1. Where the Mind is Without Fear – *Rabindranath Tagore*
2. Very Indian Poem in Indian English – *Nissim Ezekiel*
3. On Killing a Tree – *Gieve Patel*

### **UNIT III --- American Poetry**

1. Brahma – *Ralph Waldo Emerson*
2. Stopping by Woods on a Snowy Evening – *Robert Frost*
3. Strange Meeting – *Wilfred Owen*

### **UNIT IV --- Poetry from the Third World and Indian Fiction**

- Australia – *A.D. Hope*  
Telephone Conversation – *Wole Soyinka*  
Five Point Someone – *Chetan Bhagat*

### **UNIT V --- One Act Plays**

- The Rising of the Moon by *Lady Gregory* (*One-act play*)  
Little Man by *John Galsworthy* (*One-act play*)  
Seven Slaves – *A. Ball* (*One-act play*)

<b>CODE: 15A412</b>	<b>CC-VI – PROGRAMMING IN JAVA</b>	<b>SEM:IV</b>
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### **OBJECTIVES:**

- To learn Object-Oriented programming concepts and techniques*
- To provide an exposure in basic concepts of JAVA*
- To understand the syntax & methodology of programming in JAVA*
- To study the method of application development using Database connectivity*

### **Unit- I:**

**Fundamentals of JAVA:** Basic concepts of OOP - Benefits and Applications of OOP - Java Evolution - Overview of Java language - classes and Objects - Arrays , Strings and Vectors- Constructors -

**Garbage collection** - The finalize method - Method overloading - this, static and final usage - Nested and Inner classes - **Inheritance** - Method overriding - abstract methods and abstract classes - final methods and final classes

#### **Unit- II:**

Concepts of Java: Interfaces - Packages - Exception Handling: Types of Exception - try and catch - Nested try - throw and throws -

**Multithreading:** Thread Life Cycle - Thread Exceptions - Thread Priority - Synchronization

#### **Unit- III:**

I/O Streams: Stream Classes - Byte Stream - Character Stream - I/O Exceptions-Sequential Files

#### **Unit- IV:**

**AWT Package:** Window Fundamentals \_Working with Frame window -Event handling - Introducing graphics - **AWT controls**- Labels - TextField - TextArea -Button - CheckBox - Choice - List - ScrollBars - Layout Managers.

#### **Unit- V:**

**Applet Programming:** Applet Life Cycle - HTML applet tag - Passing parameters to Applets - Java Database Connectivity: Establishing Connection - Creation of data tables - Entering data into the tables - Table Updating - Use of Prepared Statements - Result Sets - Stored Procedures.

#### **Books for Study:**

1. Patrick Naughton and Herbert Schildt, " **JAVA - The Complete Reference**", Ninth Edition, Tata-McGraw-Hill, New Delhi, 2002. (Unit I-IV) ISBN: 9780071808569

2.C. Muthu, "**Programming with Java**", Vijay Nicole Imprints Pvt. Ltd., Chennai, 2004. (Unit V). ISBN 981-254-265-5

#### **Books for Reference:**

1.P. Radha Krishna, "**Object Oriented Programming through JAVA**", Universities Press, 2007. ISBN/ISSN: 9781420047929 1420047922

2.E. Balagurusamy, "**Programming with Java A Primer 3e**", Tata McGraw Hill Publishing Company Ltd . ISBN 0-07-061713-9.



<b>CODE: 15A413L</b>	<b>CC-Vb-SOFTWARE LAB-IV[JAVA]</b>	<b>SEM:IV</b>
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**OBJECTIVES:**

*To have a practical experience in Java programming.*

**Preliminaries**

1. Basic concepts
2. Control structures
3. Arrays
4. String Manipulation

**Cycle - I**

1. Classes and objects
2. Constructors
3. Method Overloading
4. Abstract class
5. Inheritance
6. Method overriding
7. 'static', 'This', 'Final' and 'super' keyword

**Cycle -II**

1. Packages

<b>CODE: 15A414L</b>	<b>AC-Vb - PROGRAMMING USING R LAB</b>	<b>SEM:IV</b>
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2. Interfaces
3. Exception handling
4. Thread 5. Streams

**Cycle -III**

1. AWT
2. Applet
3. Database connectivity(queries)

## **OBJECTIVES:**

*To learn the data analysis using 'R' programming*

### **Cycle-I:**

1. Fundamental Programs
2. List and data frames

### **Cycle-II:**

1. Programs using functions

### **Cycle -III:**

- Graphical procedures

<b>15A415</b>	<b>AC –VI- Programming Using 'R'</b>	<b>SEM:IV</b>
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## **OBJECTIVES:**

- *To learn the fundamental concepts of 'R' programming*
- *To design and test simple application.*
- *To study to study graphical representation of data*
- *To understand the package concepts*

### **UNIT-I:**

Introduction : History of R-Benefits of Using R – Working with code Editor: RGui and RStudio – Starting your First R Session – Sourcing a script – Navigating the workspace Vectors: Creating vectors – Discovering the properties of vector – combining vectors – repeating vector – Getting values in and out of vectors – working with logical vectors – Math and Vector functions – working with numbers, infinity and missing values.

### **UNIT- II:**

Using character vector for text data – manipulating text – Factoring in Factors – Working with more dimensions: Adding a second dimension – Using the indices – Naming matrix rows and columns – Calculating with matrices –Adding more dimensions: Creating an array – Combining different types of values in Data Frame –Manipulating

values in a Data Frame –**List: Creating** a list – Extracting elements from lists – Changing elements in lists.

### **UNIT -III:**

Control Structures : Conditional control structures: if statement – if..else statement – switch statement –Loops: for, while and repeat loops – break and next statement. Functions: The Function Keyword arguments- Return Values – Functions as Arguments –Anonymous Functions –Properties of Functions – Argument Order and named Arguments. **Computing basic statistics: mean, median, mode, correlation and covariance.**

### **UNIT -IV:**

Getting data into and out of R: Getting data into R: Entering data in the R text editor – Using clipboard to copy and paste –**Reading data in CSV files and excel files** – Working with other data types –Getting your data out of R –**Working with Files and Folders, Packages:** Finding packages, installing packages, loading packages, updating package and unloading packages.

### **UNIT -V:**

**Introduction to Graphical Analysis** : Box-Whiskers plots –Scatter plots-Pairs plots – Line charts – Pied charts –Cleveland dot charts –Bar charts: single category bar charts and multiple category bar charts. Creating Faceted Graphics with Lattices : Creating lattice plot –changing plot options.

### **Books for Study**

1. Andrie de vries and JosriMeys, “**R programming for Dummies**” Wiley Publications ISBN-978-81-265-5201-6.(Chapters:1,2,3,4,5,7,12,17,20)
2. Dr.Mark Gardener, “Beginning R-The Statistical Programming Language”, Wiley Publications, ISBN: 978-81-265-4120-1.(Chapters:7)
3. Paul Teetor, “**R Cook book**”,O’Relly publications, First edition,2011,ISBN:978-0-596-80915-7(Chapter 2:2.6,2.11)
4. Joseph Adler, “R in Nutshell A Desktop Quick Reference”, ISBN:978-0-596-80170-0(Chapter:9)

<b>CODE: 15SSC</b>	<b>SSC-SOFT SKILLS COURSE</b>	<b>SEM-IV</b>
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## **OBJECTIVES:**

*“Soft skills” or behavioral skills are those that are crucial to an employee’s ability to work “smarter”. A survey of employers has revealed a list of specific “soft skills” that they believe as essential for employees. The skills most frequently mentioned for fresh entrant engineers are English communication, knowing how to learn; competence in reading, writing, effective listening and oral communication skills; grammar and vocabulary; and initiative; interpersonal skills; the ability to work in teams, Knowledge of industry.*

### **UNIT I:**

Importance of Spoken English: Indian and Global Context; Native and NonNative Accents of English and Issue of Intelligibility

- Aspects of English Pronunciation: Individual sounds: Vowels and Consonants

### **UNIT II:**

Features of Connected Speech: Word Stress, Rhythm and Intonation

- Fluency in Spoken English: Rate of Speaking, Volume of Voice, Pitch, Articulation, Clarity of Expression, Lack of Hesitation, Confidence
- Speaking Politely in English: Use of Can, Could, May, Might, Will, Would, Expressing Requests, Gratitude, Compliments, Agreement, Disagreement

### **UNIT III:**

Definition and Functions of Communication, Types of Communication:

Interpersonal (Dyadic), Group Communication, Mass Communication

- Maxims of Good Conversation

### **UNIT IV:**

- Characteristics of Competent Speaker
- Styles of Speaking
- Interview and Group Discussion

### **UNIT V:**

Speaking with Confidence: Speech Anxiety, Ways to Overcome Speech Anxiety, Building Credibility as a Speaker: Competence,

Character, CharismaSituational Conversations: Meeting People, Greetings, Introducing Yourself, Introducing People, Saying Thanks.

**OBJECTIVES:**

*To understand the basic concepts of computer Network*

*To learn Signals and conversions*

*To study the concepts of Protocols and switching*

*To understand the Internet communication technology and its protocols*

**UNIT-I:**

**Basic Concepts:** Line configuration - Topology - Transmission modes

<b>CODE: 15A516</b>	<b>CC-VII – DATA AND COMMUNICATION NETWORK</b>	<b>SEM:V</b>
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- Categories of networks. The OSI model - Functions of the layers - TCP/IP protocol suite .

**UNIT-II:**

**Signals:** Analog and digital data - analog and digital signals - periodic and aperiodic signals - analog signals - decomposition of a digital signal. **Encoding and Modulating:** Digital to digital conversion - analog to digital conversion - digital to analog conversion - analog-to-analog conversion

**UNIT-III:**

**Data Link Protocols:** Asynchronous protocols - synchronous protocols - character oriented protocols - bit oriented protocols **FDDI Switching:** Circuit switching - packet switching - message switching - point-to-point protocol.

**UNIT-IV:**

**Networking and internetworking devices:** Repeaters - bridges - routers - gateways - other devices - routing algorithms - distance vector routing - link state routing.

**UNIT-V:**

**Overview of TCP/IP** - network layer - addressing - subnetting - transport layer - client server model - Domain Name System(DNS) -

telnet - File Transfer Protocol (FTP) - Trivial File Transfer Protocol (TFTP) - Simple Mail Transfer Protocol(SMTP) - Simple Network Management Protocol (SNMP) - **Hypertext Transfer Protocol** (HTTP) - **World Wide Web** (WWW).

**Books for Study:**

1. Behrouz A Forouzan, "**Data Communication and Networking**", 4th edition, Ta-Ta McGrawHill. ISBN: 0072967757

**Books for Reference:**

1. Andrews S. Tannenbaum, "**Computer Networks**", , Prentice Hall of India, NewDelhi, July 1998 - 4th Edition. ) ISBN 81-203-2175-8.

<b>CODE:15A517</b>	<b>CC-VIII-OPERATING SYSTEM</b>	<b>SEM:V</b>
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**OBJECTIVES:**

*To understand the basic concepts of Operating systems*

*To learn the concepts of management of Operating systems*

*To apply this concepts in Linux Environment*

**UNIT- I:**

Introduction: Computers and Software - Operating System Strategies - **Operating System Organization:** Factors in OS Design - Basic Functions - Basic Implementation Considerations.

**UNIT- II:**

Device Management: Device Management Approaches - Buffering - Device Drivers - Some **Device Management Scenarios.**

**UNIT- III:**

**Process Management:** The System View of Processes and Resources - Initiating the Operating System - Process Address Spaces - The Process Abstractions - The Resource Abstraction - Process Hierarchies - **Scheduling:** Scheduling Mechanism - Strategy Selection - Nonpreemptive Strategies - Preemptive Strategies - Basic Synchronization Principles: Interacting Processes - Coordinating Processes - Semaphores - **Deadlock :** Background - A System Deadlock Model - Prevention - Avoidance - Detection and Recovery.

**UNIT- IV:**

**Memory Management:** The Basics - Memory Allocation - Dynamic Address Relocation - Memory Manager Strategies - **Virtual Memory:** Address Translation - Paging - Static Paging Algorithms - Dynamic Paging Algorithms - Segmentation.

**UNIT- V:**

**File Management:** Files - Low-Level File Implementation - Supporting other Storage Abstractions - **Memory Mapped Files** - Directories - **Directory Implementation.**

**Books for study:**

1. Gary Nutt, "**Operating Systems - A Modern Perspective**", Pearson Education, 3<sup>rd</sup> Edition July 13,2003.ISBN-13: 978-0201773446 ISBN-10: 0201773449.
2. Stuart E.Madnick and John J.Donavan, "**Operating Systems**",-, Tata McGraw Hill Book Company Ltd, 3rd Edition. ISBN 0-07-039455-5

**Books for Reference:**

1. Milan Milenkovic, "**Operating Systems (concepts and Design)**", Tata McGraw Hill Publishing Company Limited, New Delhi,1999, ISBN 0-07-463272-8

<b>CODE:15A518</b>	<b>CC-IX-DISTRIBUTED PROGRAMMING USING .NET</b>	<b>SEM:V</b>
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**OBJECTIVES:**

- To an introduce the .NET architecture and its applications.
- To learn features of C# , ASP.NET and ADO.NET programming.
- To develop an applications in the .NET platform.

**UNIT-I:**

**The .NET Architecture:** The vision and goals of .NET- The building blocks of .NET- An Overview of .NET Framework: The .NET Evolution- Design goals of the .NET framework - **The .NET framework architecture-** An Overview of .NET application.

**UNIT-II:**

**Basic Features of VB.Net:** Fundamentals - Data types - Variables - Constants- Statements- **Control Structures. -Date & Time -Strings**

**UNIT-III:**

**Advanced Features of VB.Net: Arrays-Collections-Functions-SubClasses and Objects.**

**UNIT-IV:**

**ASP.NET:** Overview of ASP.NET framework - Overview of CLR - Class Library - Overview of Asp.NET controls - Understanding of HTML Controls - Study of Standard Controls - Validation Controls - Rich Controls - Adding Controls to forms - Master page - Navigation Controls - Themes - Handling events using various Tools - Simple web services Programs

**UNIT-V:**

**ADO.NET Fundamentals:** Component Object Model - SQL Server - SQL Connected Mode - Disconnected Mode - Data Set - Data Reader - Identity - Data Access Control - Grid View Control - Other Controls.

**Books for Study:**

1. Stephen C. Perry, Atul Khate, Joseph Mayo, " *Essentials of .Net and Related Technologies: With a focus on C#, XML, Asp.NET and ADO.NET*" ,First Edition, Pearson Education., 2009.
2. Kevin Hoffman & Jeff Gabriel, "*Professional .NET Framework*" Shorff Publishers and Distributors Pvt. Ltd.
3. Dave Mercer, "*ASP.NET - A Beginners Guide*", Tata McGraw Hill Publications Pvt. Ltd.

<b>CODE:15A519L</b>	<b>CC-X-SOFTWARE LAB - V</b> <b>[.NET AND SYSTEM ADMINISTRATION]</b>	<b>SEM:V</b>
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**OBJECTIVES:**

*To develop an application using C#, ADO.net and ASP.net  
To learn the functions of Operating system in practical aspect.*

**VB.Net**

1. Create an application to accept a character from console and check the case of the character.
2. Write a VB .NET program to accept a string and convert the case of the characters.



3. Write a program to implement the calculator with memory and recall operations.
4. Develop a menu based VB .NET application to implement a text editor with cut, copy, paste, save and close operations.
5. Develop a form in VB .NET to pick a date from calendar control and display the day, month, year in separate textboxes.
6. Develop a VB .NET application using the File and Directory controls to implement a common dialog box.

### **ADO.Net**

1. Develop a Database application to store the details of students using ADO.NET.
2. Develop a Database application using ADO.NET to insert, modify, update and delete operations.
3. Create an application for Accessing a SQL Database by using ADO.NET by connecting to the SQL Server database and call a stored procedure

### **ASP.Net**

1. Create a simple ASP.NET page to Output Text with a Form, two HTML Text Boxes, an HTML button, and an HTML element. Create an event procedure for the button.
2. Create a web application in ASP.NET using three different controls to the ASP.NET page for reserving rooms in hotel. The Three controls are a button control, a label control and drop-down list control.
3. To Create a web controls to a pane with three different controls to the ASP.NET page for reserving rooms in the hotel

## **System Administration lab**

### **Cycle I**

Linux Installation

Linux Basic Commands

Path Settings

### **Cycle II**

#### **Shell Scripts**

1. Check the contents of the file for equality

- 2.Number of times the user logged in
- 3.Copying a file
- 4.Usage of if , case, for, while & do..while
- 5.Displaying the files with related permissions
- 6.Usage of sort, cut, head, tail & grep
- 7.String Manipulations

### Cycle III

#### Programs for System Administration

1. Usage of date command
2. Usage of du & df commands
3. User account management
4. Shutdown the system
5. Usage of find, cron, at, wall & crontab
6. Troubleshooting Practice

<b>CODE:15A520a</b>	<b>EC-I- BIG DATA ANALYTICS</b>	<b>SEM:V</b>
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#### **OBJECTIVES:**

*To explore the fundamental concepts of big data analytics.*

*To understand the applications using Map Reduce Concepts.*

#### **UNIT – I:**

**Introduction to Big Data:** Classification of Digital Data - Characteristics of Data - Evolution of Big Data - Definition of Big Data - Challenges with Big Data - What is Big Data – Need of Big Data – Consumer or producer of Big data – business Intelligence - Data Warehouse Environment-**Hadoop Environment** - **Big Data Analytics** : Big Data Analytics - Classification of Analytics - Greatest Challenges that Prevent Businesses from Capitalizing on Big Data - Challenges in Big Data – Importance of Big Data Analytics - **Technologies in Big data** - **Data Science** - Basically Available Soft State Eventual Consistency (BASE) -Big data Analytics Tools

#### **UNIT – II :**

**Big data Technology – Hadoop:** Big Data Technology Landscape  
- NoSQL (Not Only SQL) - Hadoop: Introduction to Hadoop -  
Introducing Hadoop - RDBMS versus Hadoop - Distributed Computing  
Challenges - History of Hadoop - Hadoop Overview - Use Case of  
Hadoop - Hadoop Distributors - HDFS (Hadoop Distributed File  
System) - Processing Data with Hadoop - Managing Resources and  
Applications with Hadoop YARN (Yet another Resource Negotiator) -  
Interacting with Hadoop Ecosystem

### UNIT – III:

**MongoDB:** Introduction to MongoDB : MongoDB - Terms Used  
in RDBMS and MongoDB - Data Types in MongoDB - MongoDB  
Query Language -

### UNIT – IV:

**Map Reduce – Hive:** Introduction - Mapper - Reducer -  
Combiner - Partitioner - Searching - Sorting - Compression -  
Introduction to Hive : What is Hive - Hive Architecture - Hive Data  
Types - Hive File Format - Hive Query Language (HQL) - RCFile  
Implementation-SerDe-User-DefinedFunction(UDF)

### UNIT – V:

**Pig and Jasper Report:** What is Big- Anatomy of Big – Pig on  
Hadoop –Pig Latin Overview – Data Types in Pig – Running Pig –  
Execution Modes of Pig – HDFS commands – Relational Operators –  
Eval Function – Complex Data Types – Jasper Report using Jaspersoft:  
Introduction to Jasper Reports – Connecting to MongoDB NoSQL Data  
base .

#### Books for study:

1. Seema Acharya and Subhashini Chellapan, "Big data and Analytics", Wiley Publication, 2016, ISBN:978-81-265-5478-2.

#### Books for Reference:

1. Michael Berthold, David J. Hand, "Intelligent Data Analysis", Springer, 2007.

2. Tom White "Hadoop: The Definitive Guide" Third Edition, O'reilly Media, 2012.

3. Chris Eaton, Dirk DeRoos, Tom Deutsch, George Lapis, Paul Zikopoulos, “*Understanding Big Data: Analytics for Enterprise Class Hadoop and Streaming Data*”, McGrawHill Publishing, 2012

<b>CODE:15A520b</b>	<b>EC-I- CLOUD COMPUTING</b>	<b>SEM:V</b>
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**OBJECTIVES:**

- *To understand the basic concepts of Cloud Computing*
- *To learn the cloud services and developing cloud in different platforms*
- *To study the various applications of cloud*

**UNIT- I:**

**Introduction to Cloud Computing:** Introduction to cloud computing - Characteristics of cloud computing - cloud models - Cloud services examples. Cloud concepts and technologies: Virtualization - load balancing - deployment - Replication - Monitoring - Software Defined Networking - Network Function visualization - MapReduce - Identity and Access Management - Service Level Agreement.

**UNIT- II:**

**Cloud services and platforms :**Computer Services - Storage Services - Database Services - Application Services - Content Delivery Services - Analytic Services - Deployment and Management Services - Identity and Access Management - Open source Private cloud software. Hadoop and map reduce: Apache Hadoop - Hadoop MapReduce Job Execution –Hadoop schedulers - Hadoop Cluster setup.

**UNIT- III:**

**Developing cloud :**Cloud Application Design - Introduction - Design Consideration for cloud Application - Reference Architecture for cloud Applications -CloudApplication Design methodologies - Data Storage Approaches - **Cloud Security** :CSA cloud security Architecture - Authentication -Authorization - Identity and access management–Datasecurity–keymanagement- auditing.

**UNIT -IV:**

**Collaborating on Project Management:** Understanding Project Management - Exploring Project Management Applications - **Collaborating on Word Processing:** How Web-Based Word Processing Works - Exploring Web-Based Word Processors - **Collaborating on Spreadsheets:** How Web-Based Spreadsheets Work - Exploring Web-Based Spreadsheets - **Collaborating on Databases:** Understanding Database Management - Exploring Web-Based Databases - Collaborating on Presentations: Preparing Presentations Online - Evaluating Web-Based Presentation Applications.

#### **UNIT-V:**

Cloud Computing for the family: Centralizing Email Communications - Collaborating on Schedules, Grocery Lists, To-Do Lists, Household Budgets, Contact Lists, School Projects - Sharing Family Photos - Collaborating on Calendars - **Storing and Sharing Files and other online contents:** Understanding Cloud Storage - Evaluating Online File-Storage and Sharing Services - Exploring Online Bookmarking Services - **Sharing Digital Photographs:** Exploring Online Photo-Editing Applications - Exploring Photo-Sharing Communities - **Controlling it all with web based Desktops:** Understanding Web-Based Desktops - Evaluating Web Based Desktops.

#### **Books for study:**

1. Arshdeep bahga , Vijay madiseti , " *Cloud computing A hands on approach*", Universities Press (India) private limited ,ISBN 978-81-7371-923-3
2. Michael Miller, "*Cloud Computing: Web-Based Applications That Change the Way You Work and Collaborate Online*", Que Publication, First Print, August 2008, ISBN-13: 978-0-7897-3803-5 ISBN-10: 0-7897-3803-1

#### **Books for reference:**

1. George Reese, "*Cloud Application Architectures*", O'Reilly Publication, First Edition, April 2009, ISBN: 13: 978-81-8404-714-1

<b>CODE:15A520C</b>	<b>EC-I- MOBILE COMMERCE</b>	<b>SEM:V</b>
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**OBJECTIVES:**

*To understand the E - commerce strategies and value chains*

*To understand the M-commerce services*

*To know the availability of latest technology and applications of M- commerce in various*

**UNIT - I: Electronic Commerce**

Introduction -The e-commerce environment - The e-commerce marketplace -Focus on portals, Location of trading in the marketplace - Commercial arrangement for transactions - Focus on auctions - **Business models for e-commerce** - Revenue models - Focus on internet start-up companies - the dot-com - **E-commerce versus E-business.**

**UNIT-II :Mobile Commerce**

Introduction - Infrastructure Of M- Commerce - Types Of Mobile Commerce Services - Technologies Of Wireless Business - **Benefits And Limitations**, Support, Mobile Marketing & Advertisement, Non-Internet Applications In M- Commerce - **Wireless/Wired Commerce Comparisons**

**UNIT- III : Mobile Commerce :Technology**

**A Framework For The Study Of Mobile Commerce** - NTT Docomo's I- Mode - Wireless Devices For Mobile Commerce - Towards A Classification Framework For Mobile Location Based Services - **Wireless Personal And Local Area Networks** -The Impact Of Technology Advances On Strategy Formulation In Mobile Communications Networks.

**UNIT- IV: Mobile Commerce:Theory and Applications**

The Ecology Of Mobile Commerce - The Wireless Application Protocol - Mobile Business Services - Mobile Portal - Factors Influencing **The Adoption Of Mobile Gaming Services** - Mobile Data Technologies And Small Business Adoption And Diffusion - M-Commerce In The Automotive Industry - Location Based Services: Criteria For Adoption And Solution Deployment - **The Role Of Mobile Advertising In Building A Brand - M- Commerce Business Models**

## **UNIT- V: Business -To-Business Mobile Commerce**

Enterprise Enablement - Email And Messaging - Field Force Automation (Insurance,Real Estate, Maintenance, Healthcare) - Field Sales Support (Content Access, Inventory) - Asset Tracking And Maintenance/Management - Remote IT Support -Customer Retention (B2C Services, Financial, Special Deals) - Warehouse Au- tomation - Security.

### **Book For Study:**

1. Dave Chaffey, "**E-Business and E-Commerce Management**", Third Edition, 2009, Pearson Education
2. Brian E. Mennecke, Troy J. Strader, "**Mobile Commerce: Technology, Theory and Applications**", Idea Group Inc., IRM press, 2003.
3. P. J. Louis, "**M-Commerce Crash Course**", McGraw- Hill Companies February 2001.

### **Books for Reference:**

1. Paul May, "**Mobile Commerce: Opportunities, Applications, and Technologies of Wireless Business**" Cambridge University Press March 2001
2. Michael P. Papazoglou, Peter M.A. Ribbers, '**e-business organizational and Technical foundation** ',Wiley India 2009
3. Dr.Pandey , Saurabh Shukla **E-commerce and Mobile commerce Technologies** , Sultan chand ,2011

<b>CODE:15A5Na</b>	<b>NMEC- BPO AND HEALTH CARE</b>	<b>SEM:V</b>
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### **OBJECTIVES:**

*To introduce the Business Process Outsourcing and its applications*

### **UNIT- I - Introduction to BPO**

What is BPO - Features of Outsourcing - Effects of BPO in the global trends of outsourcing opportunities - Types of BPO - Voice & Non-Voice Process - Different BPO Domain - Work habits of USA & UK - Indian's Strength towards positive outsourcing from US & UK

### **UNIT -II - USHC Industry**

Introduction to Health Care - Health Care Insurance - Health Care Insurance - Terminologies - Types of Health Insurance - HIPPA - Claim Types - Standard and Non Standard Forms - HCFA - UB - Attachments - Non - Standard claim Process - Dental - Terminology

### UNIT -III Output Format

Introduction to ANSI and NSF - Objectives - Version & Overview of ANSI - Formats of ANSI - Components & Structure of ANSI - ANSI Loop Structure - Sample ANSI Layout - Field Mapping - Validation Process - ANSI Checker - Error Types

### Unit-IV: Quality :

Quality concepts - Quality View Point - Statistical Process Control & QC Techniques - Problem Solving Techniques - Quality Management systems- QMA - Introduction to SIX SIGMA.

### Unit-V:

Introduction to Scripting Languages - Perl Scripting - example.

### Books for Study:

*Material provided by the Department.*

CODE:15A5Nb	NMEC-I- DESKTOP PUBLISHING	SEM:V
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### OBJECTIVES:

*To present a publishing software*

*To understand the tools , functions of the software*

*To learn to design books, banners, pamlets, greeting cards*

### UNIT-I:

Publishing Software — An overview , menu, tools

### UNIT-II:

Drawing lines shapes—inserting pictures, objects - tables and templates

### UNIT-III:

Adding special effects - Exporting drawings - outlining and filling objects - inserting symbols and clip arts



#### UNIT-IV:

Working in Corel Draw presentations - adjusting the position , resizing , positioning , merging , color shades and shadows , working with advanced effects - special interactive effects

#### UNIT-V

Creating Business cards , Phamlets, Banners, news papers , books , shortcut keys

#### Books for Study:

Reading material shall be provided by the department.

CODE:15A621	CC-XI- SOFTWARE ENGINEERING	SEM:V
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#### OBJECTIVES:

*To understand the basic concepts of Software Engineering*

*To learn the phases of Software Development Life Cycle*

#### UNIT-I:

**Introduction to Software Engineering:** Definitions-Size Factors- Quality and .Productivity Factors-Managerial Issues-Planning a Software Product: Defining the Problem-Developing the Solution Strategy-planning the development process-Planning the Organization Structure.

#### UNIT-II:

**Software Analysis:** Software cost factors-Software Cost Estimation Techniques- Staffing level Estimation-Estimating Software

Maintenance Costs-The Software Requirements Specification-Formal Specification Techniques .

**UNIT-III:**

**Software Design:** Fundamental Design Concepts-Modules and Modularization Criteria -Design Notations-Design Techniques - Design Guide lines.

**UNIT-IV:**

**Implementation:** Structured coding techniques-Coding Style- Standards and Guidelines-Documentation Guidelines

**UNIT-V:**

**Testing:** Quality Assurance - Walkthroughs and Inspections-Static Analysis-Symbolic Execution- Unit testing and debugging-System Testing- Formal Verification - **Maintenance:** Enhancing Maintainability during development - Managerial aspects of Software Maintenance- Source Code Metrics.

**Book for Study:**

1. "Richard Fairley", "**Software Engineering Concepts**", Tata McGraw-Hill ,2nd Edition. ISBN 0-07-463121-7

**Book for reference:**

1. Roger S. Pressman, "**Software Engineering - A Practitioner's Approach**", 6th Ed., McGraw Hill International, 2005.
2. Ian Sommerville, "**Software Engineering**", Addison Wesley, Singapore,2002
3. K.K. Agarwal & Yogesh Singh, "**Software Engineering**", New Age International Publishers, Revised Second Edition, 2005.

<b>CODE:15A622</b>	<b>CC-XII- MOBILE APPS DEVELOPMENT</b>	<b>SEM:V</b>
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**OBJECTIVES:**

*To provide thorough introduction to Android.  
To learn the basic concepts of Android Development tools and Life cycle.*

*To impart knowledge about user interfaces*

*To have an exposure about databases and content providers*

*To understand the principles of graphics, messaging, sound , video and publishing the application*

#### **UNIT -I:**

**Android Fundamentals:** Getting Started with Android - Mastering the Android Development Tools - **Building android applications** - Managing Application resources - Configuring the android manifest file - **Designing an application framework**

#### **UNIT - II:**

**Building an Application framework:** Implementing an animated Splash Screen- **Implementing Main Menu Screen** - Developing the help and scores screen - Building forms to collect user input - Using dialogs to collect user input - **Adding Application Logic**

#### **UNIT -III:**

**Enhancing Application with Powerful Android features:** Working with Images and the Camera - Adding Support for Location-Based Services - **Adding Basic Network Support** - Adding Additional Network Features - Adding Social Features - Creating a Home Screen App Widget

#### **UNIT -IV:**

**Adding Polish to Android Application:** **Internationalizing Your Application** - Developing for Different Devices - Diving Deeper into Android - **Testing Android Applications.**

#### **UNIT -V:**

**Publishing the Application:** Getting Ready to Publish - Publishing on the Android Market .

#### **Book for Study:**

1. Lauren Darcey, Shane Conder, "**SAMS Teach Yourself Android Application Development in 24 Hours**", Second Edition. ISBN-13: 978-0-672-33569-3 ISBN-10: 0-672-33569-7

#### **Books for Reference**

- 1 .Pradeep Kothari & Kogent Learning Solutions Inc, " *Android Application Development Black Book*", Dreamtech Press, Edition 2014, ISBN: 978-93-5119- 409-5
2. Reto Meier, "*Professional Android 4 Application Development* ", WROX Publication- Wiley - India, 2012.

<b>CODE:15A623</b>	<b>CC-XIII-COMPUTER GRAPHICS</b>	<b>SEM:V</b>
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**OBJECTIVES:**

- To introduce to the concepts of computer graphics.*
- To learn the overview of interactive computer graphics, two dimensional system and mapping,*
- To apply the most important drawing algorithm, two-dimensional transformation.*
- To understand clipping, filling and an introduction to 3-D graphics.*

**UNIT- I:**

**Introduction:** Applications of Computer Graphics, Raster Scan System, Random Scan System, Raster Scan Display Processors. Output Primitives: Points and Lines - **Line Drawing Algorithms**, Mid-Point **Circle and Ellipse Algorithms**. Attributes of Output Primitives.

**UNIT-II:**

**Two Dimensional Geometric Transformations:** Translation, Scaling, Rotation, Reflection and Shear Transformations, Matrix Representations and Homogeneous Coordinates, Composite Transformations, Transformations between Coordinate Systems - **Two Dimensional Clipping and Viewing:** The viewing pipeline, Viewing coordinate reference Frame, Window to View-port Coordinate transformation, viewing functions, **Cohen-Sutherland** and Cyrus-beck line **Clipping algorithms**, **Sutherland Hodgeman Polygon clipping algorithm.**

**UNIT-III:**

Graphics Structures - Hierarchical modeling - **Graphical User Interfaces and Interactive Input Methods.**

#### UNIT-IV:

**3-D Object Representation:** Polygon surfaces, Quadric surfaces, Spline representation, Hermite Curve, Bezier Curve and B-Spline Curve, Bezier and B-Spline surfaces - **Three Dimensional Geometric Transformations:** Three Dimensional Viewing pipeline, Clipping, Projections (Parallel and Perspective).

#### UNIT-V:

**Visible Surface Detection Methods:** Classification, back-face Detection, Depth-buffer, scan-line, depth sorting, BSP-tree methods, area sub-division and octree methods - Computer animation.

#### Books for Study:

1. Donald Hearn and M. Pauline Baker, "*Computer Graphics C Version*", Pearson Education, 2003.

#### Books for Reference:

1. Foley, Van Dam, Feiner, Huges, "*Computer Graphics: Principles & Practice*", Pearson Education, second edition 2003.

CODE:15A624L	<b>CC-XIV- SOFTWARE LAB-VI MOBILE APPS DEVELOPMENT AND APPLICATION DEVELOPMENT</b>	SEM:VI
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#### OBJECTIVES:

*To develop the simple applications of Android, C, C++ and Java.*

#### Cycle - I

1. Layouts
2. Views
3. Events

#### Cycle -II

1. Files
2. Preferences
3. Notifications

#### Cycle - III

1. Programs using SQLite
2. Audio and Video Applications

**Application Development:**

*Developing 3 different applications using C,C++ and Java during each cycle.*

Guidelines for Developing Applications shall be given to the students.

**External Examinations:** Mobile Apps Development: 35 Marks

Application Development: 30 Marks

Record: 10 Marks

<b>CODE:15A625a</b>	<b>EC-II- Ruby On Rails</b>	<b>SEM:VI</b>
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**OBJECTIVES:**

*This course aims to provide and insight view of Ruby on rails language and its features.*

**UNIT-I:**

Introduction - Structure and Execution ruby programs - data types and objectives - expressions and operators.

**UNIT-II:**

Statement and control structures - loops - blocks - exception handling - methods - Procs, Lambdas & closures - functional programming

**UNIT-III:**

Classes and modules - defining the class - method - object creation -modules - reflection and meta programming - types - classes and modules -methods - hooks - alias chaining.

**UNIT-IV:**

Ruby - Platform - Strings - Regular expression - collection - files and directories - Input output - networking - threads and concurrency.

## UNIT-V:

Ruby environment invoking ruby interpreter - top-level environment -calling the wires - security - applications of ruby languages.

### Books for Study:

1. David Flanagan & Yukihiro Matsumoto, "The Ruby Programming Language", ,O'Reilly, 2008.ISBN 9780596516178.

CODE:15A625b	EC-II- WEB TECHNOLOGY	SEM:VI
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### OBJECTIVES:

*To improve the necessary knowledge of the tools useful for creating dynamic website*

*To know the tools involving client server technology.*

*To design a simple interactive website.*

### UNIT-I:

**HTML:** Basic HTML, The Document body, Text, Hyperlinks, Adding more formatting, Lists, Tables, Using colors and images, Images, Multimedia objects, Frames, Forms- towards interactivity, Cascading Style Sheets: Introduction, Using styles: Simple examples, Defining your own styles, Properties and values in styles.

### UNIT-II:

**Client Side Scripting :** Javascript - The basics, Variables, String manipulation, Mathematical functions, Statements, Operators, Arrays, Functions- Data and objects in java script, Regular expressions, Exception Handling, Built in objects, Events. Dynamic HTML with Java Script: Data validation, Opening a new window, Messages and Confirmations, The status bar, Writing to a different frame, Rollover buttons, Moving images, Multiple pages in a single download, A text-only menu system, Floating logos.

### UNIT-III:

**Server Side Scripting:** PHP: evolution of PHP - structure and syntax of PHP and integrating the same with HTML - comments - variables - datatypes - operators - control structures - passing information between pages - Strings - Arrays and Functions

#### **UNIT-IV:**

**MySQL Databases:** SQL tutorial(DDL, DML, DCL) - MySQL introduction - datatypes in MySQL - Pattern Matching - GroupBy - IS NULL - DISTINCT Optimization - Max and Min function - Using auto increment

#### **UNIT-V:**

**Integration of Apache, MySQL, PHP to design dynamic web pages:** MySQL functions in PHP - Connecting and disconnecting from MySQL - Using tables - form design - editing the database - Validation - Handling and avoiding errors.

#### **Books for Study:**

1. Timothy Boronczyk, Michael, Elizabeth Naramore, Jason Gerner, Yann Le Scouarnec, Jeremy Stolz, Michael K. Glass "Beginning PHP6, Apache, MySQL® Web Development", Wiley Publishing, 2009 edition. ISBN-13: 978-8126521227.
2. Chris Bates, "Web Programming Building Internet Applications", Second Edition, Wiley (2007)

#### **Books for reference:**

1. Robin Nixon, "Learning PHP, MySQL & JavaScript With jQuery, CSS & HTML5", O'Reilly Media, Fourth edition, December 2014, ISBN: 978-1-491-91866-1.
2. David R. Brooks, "An Introduction to HTML and JavaScript for Scientists and Engineers", Springer-Verlag London Limited 2007, ISBN-13: 978-1-84628-656-8.
3. Michael K Glass, Yann Le Scouarnec, Elizabeth Naramore, Gary Mailer, Jeremy Stolz, Jason Gerner, "Beginning PHP, Apache, MySQL Web Development", Wiley dreamtech press, 2004 edition. ISBN: 9780764557446.



<b>CODE:15A625C</b>	<b>EC-II- XML AND WEB SERVICES</b>	<b>SEM:VI</b>
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**OBJECTIVES:**

*To understand the basic concepts of XML Programming*

**Unit-I:**

**The XML Galaxy:** -Introduction-No-Predefined Tags-Document Structure-Markup Language History. Application of XML: Document Application-Data Application- Companion Standard: XML Namespaces-Style sheet-DOM and SAX- XLink and XPointer.XML Software: XML Browser-XML Editor-XML Parsers-XSL Processor.

**Unit-II:**

**The XML Syntax:** A first Look at the XML Syntax-Advanced Topics-Four Common Errors-Xml Editors- Three Applications of XML

**Unit-III:**

**XML Schemas:** The DTD Syntax-Well-Formed and Valid Documents-Relationship between the DTD and the Document-Entities and Notation-Notations-Designing DTD's- Designing DTD's from an object Model.

**Unit-IV:**

**Namespaces:** The problem Namespaces Solves-URIS-Namespaces and DTD- Application of Namespaces-XSL Transformation-Basic XSLT-Supporting a different Medium-Advanced XSLT.

**Unit-V:**

**XSL Formatting Object and Cascading Style sheet:** The Basics of CSS-Flow Objects and Boxes-CSS Property Values-The Parsers and DOM-The Parser and the Application- Document Object Model-DOM in Application-SAX.

**Book for Study:**

1. Benoit Marchal, "**XML BY EXAMPLE**" , Prentice Hall of India Pvt Ltd, New Delhi. ISBN 978-8120316645.

**Book for Reference:**

1. David Hunter, Jeff Rafter, Joe Fawcett, "*Beginning XML*" 4<sup>th</sup> Edition, Wrox Publications, ISBN: 978-0470114872 .