



(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)
S.P.G.Chidambara Nadar - C.Nagammal Campus
S.P.G.C.Nagar, K.Vellakulam - 625 701, (Near Virudhunagar), Madurai District.

B.TECH. ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Regulation - 2020

AUTONOMOUS SYLLABUS

CHOICE BASED CREDIT SYSTEM (CBCS)

CURRICULUM AND SYLLABI

(III & IV)

VISION:

To make the Department of Computer Science and Engineering the unique of its kind in the field of Research and Development activities in this part of world.

MISSION:

To impart highly innovative and technical knowledge to the urban and unreachable rural student folks in Computer Science and Engineering through "Total Quality Education".

PROGRAM EDUCATIONAL OBJECTIVES (PEOs):

PEO 1:

Apply the basic engineering skills and domain knowledge for developing effective computing solutions to address various social issues.

PEO 2:

Able to have successful career in technical / managerial roles in multi-disciplinary environment.

PEO 3:

To confront the evolving technical challenges and problems in the areas of computing.

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SEMESTER III

Sl. No.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	MA1371	Multivariate Calculus and Linear Algebra	BS	3	1	0	4	4
2	AD1371	Data Structures and Algorithms	PC	3	0	0	3	3
3	AD1372	Introduction to Artificial Intelligence	PC	3	0	0	3	3
4	CS1371	Database Management Systems	PC	3	0	0	3	3
5	CS1372	System Programming and Operating Systems	PC	3	0	0	3	3
PRACTICAL								
6	AD1381	Data Structures and Algorithms Laboratory	PC	0	0	4	4	2
7	CS1381	Database Management Systems Laboratory	PC	0	0	4	4	2
8	AD1311	Artificial Intelligence Laboratory	PC	0	0	4	4	2
9	HS1321	Interpersonal Skills - Listening and Speaking	EEC	0	0	2	2	1
TOTAL				15	1	14	30	23

**HS1321 INTERPERSONAL SKILLS – LISTENING AND
SPEAKING**

L	T	P	C
0	0	2	1

OBJECTIVES:

The course will enable learners to:

- Equip students with the English language skills required for the successful undertaking of academic studies with primary emphasis on academic speaking and listening skills.
- Provide guidance and practice in basic general and classroom conversation and to engage in specific academic speaking activities.
- Improve general and academic listening skills
- Make effective presentations.

UNIT I LISTENING AS A KEY SKILL 6

Listening as a key skill- its importance- speaking – give personal information – ask for personal information – express ability – enquire about ability – ask for clarification - Improving pronunciation– pronunciation basics — stressing syllables and speaking clearly – intonation patterns – conversation starters: small talk.

UNIT II LISTEN TO A PROCESS INFORMATION 6

Listen to a process information- give information, as part of a simple explanation — taking lecture notes – preparing to listen to a lecture – articulate a complete idea as opposed to producing fragmented utterances - compare and contrast information and ideas from multiple sources- converse with reasonable accuracy over a wide range of everyday topics.

UNIT III LEXICAL CHUNKING 6

Lexical chunking for accuracy and fluency- factors influence fluency, deliver a five-minute informal talk – greet – respond to greetings – describe health and symptoms – invite and offer –accept – decline – take leave – listen for and follow the gist- listen for detail

NIT IV GROUP DISCUSSION 6

Being an active listener: giving verbal and non-verbal feedback – participating in a group discussion – summarizing academic readings and lectures conversational speech listening to and participating in conversations – persuade- negotiate disagreement in group work.

UNIT V GROUP & PAIR PRESENTATIONS

6

Formal and informal talk – listen to follow and respond to explanations, directions and instructions in academic and business contexts – strategies for presentations and interactive communication – group/pair presentations

TOTAL: 30 PERIODS

COURSE OUTCOMES:

Upon successful completion of course, the students will be able to

- CO1 Develop their communicative competence in English with specific reference to listening
- CO2 Prepare conversation with reasonable accuracy
- CO3 Apply lexical Chunking for accuracy in speaking
- CO4 Demonstrate their ability to communicate effectively in GDs
- CO5 Explain directions and instructions in academic and business contexts

TEXT BOOKS:

1. Brooks, Margret, 2011, *Skills for Success. Listening and Speaking. Level 4*, Oxford University Press, Oxford.
2. Richards, C, Jack & David Bholke, 2010, *Speak Now Level 3*, Oxford University Press, Oxford.

REFERENCE BOOKS:

1. Bhatnagar, Nitin & Mamta Bhatnagar, 2010, *Communicative English for Engineers and Professionals*, Pearson, New Delhi.
2. Hughes, Glyn & Josephine Moate, 2014, *Practical English Classroom*, Oxford University Press, Oxford.
3. Vargo, Mari, 2013, *Speak Now Level 4*, Oxford University Press, Oxford.
4. Richards, C, Jack, 2006, *Person to Person (Starter)*, Oxford University Press, Oxford.
5. Ladousse, Gillian Porter, 2014, *Role Play*. Oxford University Press, Oxford.

WEB RESOURCES:

1. <https://www.cambridge.org/elt/blog/wp-content/uploads/2019/10/Learning-Language-in-Chunks.pdf>
2. <https://english.eagetutor.com/english/628-how-to-greet-your-boss-people-in-office.html>

3. <https://www.groupdiscussionideas.com/group-discussion-topics-with-answers/>
4. <https://www.bbc.co.uk/worldservice/learningenglish/business/talkingbusiness/unit3/presentations/1opening.shtml>

SEMESTER IV

MA1473 PROBABILITY AND STATISTICS

L	T	P	C
3	1	0	4

OBJECTIVES:

This course enables the students to

- Introduce the basics of random variables and some standard distributions that can describe real life phenomenon.
- Establish the basic concepts of two-dimensional random variables.
- Impart the knowledge of testing of hypothesis for small and large samples.
- Describe the basic principles in the design of simple experiments for comparing pairs of treatments.
- Introduce the basic concepts of statistical quality control that plays a vital role in the field of Engineering and Technology.

UNIT I PROBABILITY AND RANDOM VARIABLES 12

Probability – The axioms of probability – Conditional probability – Baye’s theorem – Discrete and continuous random variables – Moments – Moment generating functions – Distributions: Binomial, Poisson, Uniform, Exponential and Normal.

UNIT II TWO-DIMENSIONAL RANDOM VARIABLES 12

Joint distributions – marginal and conditional distributions –covariance – correlation – Karl Pearson’s correlation coefficient – Rank correlation – Spearman’s rank correlation coefficient – Kendall’s rank correlation coefficient - linear regression.

UNIT III TESTING OF HYPOTHESIS 12

Sampling distributions – Statistical Hypothesis – Type I and Type II errors – Tests for single mean and difference of means of large samples (z-test) and Small samples (t-test) – F-test for variance – chi-square test for goodness of fit – independence of attributes – Demo using Excel.