



JNAN VIKAS MANDAL'S  
 Amratlal Raichand Mehta Degree College of Arts  
 Diwali Maa Degree College of Science  
 Mohanlal Raichand Mehta College of Commerce  
 Padmashree (Dr.) R.T. Doshi Degree College of Computer Science  
 Plot no.9, Sector -19, Airoli Navi Mumbai

**SCIENCE DEPARTMENT**  
**BRIDGE COURSE CONTENT- 2022-23**  
**LEVEL-III (For T.Y.B.Sc. Physics) 13<sup>th</sup> -19<sup>th</sup> June 2022**

<b>MODULE-1</b>		<b>6Hrs.</b>
1.1.	General Introduction to Number System	S.S
1.2.	Introduction to Code conversion	S.S
1.3.	Introduction to Scalars and vectors	S.S
1.4	The Divergence and Curl	S.S
1.5	General Introduction to <b>Transducers</b>	S.S
<b>MODULE-2</b>		<b>6Hrs.</b>
2.1.	Brief introduction to <b>Probability</b>	S.S
2.2	Introduction to binomial distribution	S.S
2.3	The exponential and trigonometric functions	S.S
2.4	The probability of a distribution	S.S
2.5	Black-body radiation	S.S
<b>MODULE-3</b>		<b>6Hrs.</b>
3.1.	Introduction to <b>Electrostatics</b>	S.S
3.2.	Introduction to <b>Magnetostatics</b>	S.S
3.3	Brushing up the Calculus: Integration	1.5hr NB
3.4	Derivative	1.5hr NB
<b>MODULE-4 -N.B</b>		<b>6Hrs.</b>
4.1	Introduction to quantum mechanics	2HR NB
4.2	Operators	2HR NB
4.3	Atomic models	2HR NB
<b>MODULE-5 -N.B</b>		<b>6Hrs.</b>
5.1	Semiconductor	1HR NB
5.2	Types of semiconductor	1HR NB
5.3	PN junction	2HR NB
5.4	Electrical properties of solids	2HR NB





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### SCIENCE DEPARTMENT

### BRIDGE COURSE CONTENT- 2022-23

LEVEL-III (For T.Y.B.Sc. Chemistry) 13- -18 June 2022

MODULE-1		7Hrs.
1.1.	Molecular Spectroscopy: Terms involved, Beer-Lamberts law, spectrum of radiations. Types of spectra: rotational, vibrational, rotational-vibrational	H.N.
1.2.	Chemical Thermodynamics: Basic concepts and terms involved. Chemical Kinetics: Terms, rate of reaction, rate constant, order of the reaction	H.N.
1.3.	Nuclear Chemistry: Types of radiation, radioactive elements, law of disintegration	H.N.
1.4	Surfactant chemistry: absorption & adsorption differences, types of adsorption Colloidal state: Particle size, true solution, suspensions, colloidal with examples	H.N.
1.5	Concept of concentration	H.N.
1.6	Surface Chemistry	H.N.





1.7	Assignment	H.N
	<b>MODULE-2</b>	<b>8Hrs</b>
2.1	<b>Molecular Orbital Theory of homo nuclear diatomic molecules 3L</b>	S.R.
2.2	Hybridisation 1L	S.R.
2.3	Calculation of oxidation state 1L	S.R.
2.4	Basic terminologies used in drug chemistry 1 L	S.R.
2.5	Assignment Inorganic Chemistry	S.R.
2.6	Assignment Dyes	S.R.
	<b>MODULE-3</b>	<b>8Hrs.</b>
3.1.	Concepts of writing organic reaction mechanism, use of curved arrows	S.K
3.2.	Reaction Mechanism: Types of reactions, Electronic effects, Directing effects, types of reagents	S.K
3.3	Basic terminologies in stereochemistry	S.K
3.4	IUPAC Nomenclature for organic compounds	S.K
3.5	Concept of Green Chemistry	S.K
3.6	Historical development in dyes	S.K
3.7	Assignment Organic Chemistry	S.K
3.8	Assignment Dyes	S.K



	<b>MODULE-4</b>	<b>7Hrs.</b>
4.1	Sampling: Purpose, difficulties encountered	S.P
4.2	Methods of sampling: solids, liquids and gases	S.P
4.3	Solvent Extraction: Principle, batch and continuous extraction	S.P
4.4	Separation methods: chromatography	S.P
4.5	Chemical Calculation: molality, normality	S.P.
4.6	Chemical Calculation: molarity, Percent composition	S.P.
4.7	Assignment Analytical Chemistry	S.P





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**SCIENCE DEPARTMENT**

**BRIDGE COURSE CONTENT- 2022-23**

**LEVEL-II (For S.Y.B.Sc.) 13- ~~16~~ June 2022**

	<b>MODULE-1</b>	<b>7Hrs.</b>
1.1	Laser (2L)	S.S.
1.2	Crystal Physics	S.S.
1.3	Basics of number system	S.S.
1.4	Code conversion	S.S.
	<b>MODULE-2</b>	<b>7Hrs.</b>
2.1	Basics of SHM (2L)	N.B.
2.2	Basics of Thermodynamics	N.B.
2.3	Calculus and Co-ordinate system	N.B.
	<b>MODULE-3</b>	<b>6Hrs.</b>
3.1	Chemical Thermodynamics: Terms involved, types of system, types of processes, Laws of thermodynamics	H.N.





3.2	Chemical Kinetics: Terms involved, conditions of ideality involving different laws	H.N.
3.3	Electrochemistry: Electrolysis, types of electrolytes, types of cells	H.N.
3.4	Concept of Concentration	H.N.
3.5	Resonance in Aromatic compounds 2L	S. R.
	<b>MODULE-4</b>	<b>7Hrs.</b>
4.1	Trends in periodic properties 1L	S.R.
4.2	IUPAC (Carbonyl) , Types of Organic reactions 3L	S. R.
4.3	Introduction to Analytical Chemistry and Classification of Methods of Analysis	S.P.
4.4	titrimetric methods	S.P
4.5	Optical Methods of Analysis	S.P
	<b>MODULE-5</b>	<b>6Hrs.</b>
5.1.	Parasitology	P.K.
5.2.	Genetics	K.P.
5.3	Nutrition	P.K.
5.4	Apiculture	K.P.



5.5	Respiration in animal	P.K.
5.6	Genetic material	K.P.
	<b>MODULE-6</b>	6Hrs.
6.1.	Locomotion in animals	P.K
6.2	Chromosome	K.P
6.3.	Ethology	P.K
6.4.	Circulatory System	K.P
6.5.	Sericulture	P.K
6.6	Excretion	K.P
	<b>MODULE-7</b>	12L
7.1	Norm, distance, inner product of vectors(2L)	P.J
7.2	Partial derivatives concept (2L)	P.J
7.3	Equation of tangent and normal to curve (2L)	P.J
7.4	Linear transformation	P.J
7.5	Matrix inverse. Determinant	P.J
7.6	Volume of parallelepiped and tetrahedron	P.J
	<b>MODULE-8</b>	3L



8.1	Finding successive terms in recurring relation	P.J
8.2	Power set, Cartesian product	P.J
8.3	Computation of Euler's function on Natural Number	P.J







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NAAC Re-Accredited CGPA-3.33 'A'-Grade

### Bridge Course Syllabus for Academic Year 2022-23

Class : M.Sc.I.T.-Part 2

Duration : 30 hrs

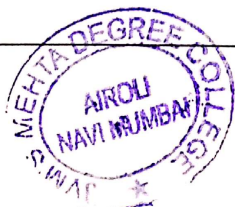
#### Objective:

- To help students better understand the expectations of their new academic level.
- To make them understand the base required for learning new subjects in current academic year.

#### Outcome:

- Able to list down ingredients of Machine Learning.
- Understood the scope of automation.
- Applications of AI in various fields.
- Understand the steps involve in project development

Sr No	Topics	Duration
1	<b>Module 1:</b> What Is Machine Learning? Machine Learning Application, Learning Associations, Classification, Regression, Unsupervised Learning, Reinforcement Learning	07 hrs
2	<b>Module 2:</b> Introduction to RPA, Application and need of RPA technology, DevOps Fundamentals, The Demand for DevOps, DevOps for Networking, DevOps Network	07 hrs
3	<b>Module: Applications of Artificial Intelligence</b> Introduction to AI, Applications of AI- Personalized Online Shopping, Social Media, Customer Service, Banks, Smart Homes, Virtual Assistance, Health Care, Education, Automotive Industry	08 hrs



4	<b>Module 4: An Overview of Project Planning:</b> Introduction to Step Wise Project Planning, Step 0: Select Project, Step 1: Identify Project Scope and Objectives, Step 2: Identify Project Infrastructure, Step 3: Analyse Project Characteristics, Step 4: Identify Project Products and Activities, Step 5: Estimate Effort for Each Activity, Step 6: Identify Activity Risks, Step 7: Allocate Resources, Step 8: Review/Publicize Plan, Steps 9 and 10: Execute Plan/Lower Levels of Planning Introduction of Project Documentation Background , Objectives , Purpose, Scope, and Applicability , Purpose, Scope , Applicability, Achievements, Organisation of Report	08 hrs
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Module 1 & 2: Asst. Prof. Mustufa Nullwala

Module 3: Asst. Prof. Janhavi Kshirsagar

Module 4: Asst. Prof. Archana Sanap



Dr. Sunitha Joshi

In-Charge M.Sc.IT



Asst. Prof. Janhavi Kshirsagar

Co-ordinator CS-IT



Dr. Leena Sarkar

Principal



**PRINCIPAL**  
**JYOTI MEHTA MANDAL'S**  
**M.R. MEHTA COLLEGE OF COMMERCE**  
**D.M. COLLEGE OF SCIENCE**  
**A.R. MEHTA COLLEGE OF ENGINEERING**  
**Dr. R.T. DOSHI COLLEGE OF ENGINEERING**  
 Plot No. 9, Sector 15, Navi Mumbai

# SYLLABUS

T.Y.B.Com

SUBJECT	TOPICS
Financial Accounting	<ul style="list-style-type: none"> <li>• Company final accounts</li> <li>• Import and Export rates]</li> </ul> Issue of shares
Cost Accounting	<ul style="list-style-type: none"> <li>• Emerging trends in cost accounting</li> <li>• Methods of costing</li> <li>• Techniques of costing</li> <li>• Introduction of process industry and construction industry costing</li> </ul>
Taxation	<ul style="list-style-type: none"> <li>• Introduction of GST</li> <li>• Terms used in indirect taxation</li> <li>•</li> </ul>
Commerce	<ul style="list-style-type: none"> <li>• HRM</li> <li>• HRP</li> <li>• HRD</li> <li>• Emerging trends in HRM</li> </ul>
B. Economics VI	<ul style="list-style-type: none"> <li>• Introduction to international economics</li> <li>• Basic concepts</li> </ul>
Export marketing	<ul style="list-style-type: none"> <li>• Product planning and Decision</li> <li>• FOB</li> <li>• Document of export</li> </ul>
Computer system & application	<ul style="list-style-type: none"> <li>• Introduction to E-commerce ,Definition of E-commerce</li> <li>• Features of E-commerce</li> <li>• Types of E-commerce (B2C, B2B, C2C, P2P)</li> <li>•</li> </ul>





# SYLLABUS OF BRIDGE COURSE

T4Bcom

SUBJECT	TOPICS
Financial Accounting	<ul style="list-style-type: none"><li>• Meaning of company</li><li>• Features of company</li><li>• Classification of shares</li><li>• Final accounts of business organization</li></ul>
Cost Accounting	<ul style="list-style-type: none"><li>• Meaning of Cost</li><li>• Classification of Cost</li><li>• Different types of industries applying cost accounting</li><li>• Cost accounting in daily life of layman</li></ul>
Taxation	<ul style="list-style-type: none"><li>• Basic Concepts of direct taxation</li><li>• Types of Taxes</li></ul>
Commerce	<ul style="list-style-type: none"><li>• Introduction to Marketing Management</li><li>• Consumer buying behavior</li><li>• Marketing Mix</li></ul>
B.Economics V	<ul style="list-style-type: none"><li>• Indian economy</li><li>• Financial system</li><li>•</li></ul>
Export marketing	<ul style="list-style-type: none"><li>• Introduction to Export Marketing</li><li>• Trade Barriers</li><li>• Export finance</li></ul>
Computer system & application	<ul style="list-style-type: none"><li>• Computer basic concepts</li><li>1. Introduction to Computer, Component of computer system</li><li>• Understanding computer system</li><li>1. Hardware, Software, types of software, Concept of input, processing and output</li></ul>



## SYBcom Sem IV

SUBJECT	TOPICS
Commerce	<ul style="list-style-type: none"> <li>• Meaning of production</li> <li>• Types of production</li> <li>• Concept of quality</li> </ul> <p>Introduction of secondary and primary market</p>
Accountancy	<ul style="list-style-type: none"> <li>• Forms of business organization</li> <li>• Final accounts of business organization</li> </ul>
B. Economics IV	<ul style="list-style-type: none"> <li>• Introduction to public economics</li> <li>• Functions of Government</li> </ul>
Advertising	<ul style="list-style-type: none"> <li>• Advertising Models</li> <li>• Buying motive elements</li> <li>• USP</li> <li>• </li> </ul>
Auditing	<ul style="list-style-type: none"> <li>• Introduction of auditing</li> <li>• Importance of auditing</li> </ul>
Foundation Course	<ul style="list-style-type: none"> <li>• A brief about the underprivileged sections of India likes SC, ST, Women, Children, Girl Child, Mentally and physically Disabled , Old People</li> <li>• A brief about sensitive consideration of environment through the philosophies on ecology such as anthropocentrism , biocentrism, ecocentrism and ecofeminism</li> </ul>



	<ul style="list-style-type: none"><li>• Practical aspect of science through various technologies</li><li>• A complete briefing about soft skills in competitive exams and information about national level and important admission oriented competitive exams of India</li></ul>
Business Law	<ul style="list-style-type: none"><li>• Concept of Limited Liability Partnership</li><li>• Consumer Redressal agencies</li><li>• Intellectual Property Rights</li></ul>





# SyB Com Bridge Course Sem III

SUBJECT	TOPICS
Foundation Course	Foundation Course- a subject of general knowledge Background of science and technology Human Rights Soft skills Ecological and environmental concern
Commerce	<ul style="list-style-type: none"><li>● Meaning of Business organisation,</li><li>● Development of Business organisation,</li><li>● Meaning of management</li><li>● evolution of management</li></ul>
Accountancy	<ul style="list-style-type: none"><li>● Journal entries</li><li>● Posting to ledger accounts</li><li>● Forms of business organisation and it's accounting systems</li></ul>
B.Economics III	<ul style="list-style-type: none"><li>● Introduction of macroeconomics</li></ul>



	<ul style="list-style-type: none"> <li>● Role of state</li> <li>● Economic problems and issues</li> </ul>
Advertising	<ul style="list-style-type: none"> <li>● Introduction of IMC</li> <li>● Elements IMC</li> <li>● Ethics in Advertising</li> </ul>
Management Accounting	<ul style="list-style-type: none"> <li>● Meaning of management accounting</li> <li>● Importance of management accounting</li> <li>● Difference between management accounting and financial accounting</li> </ul>
Business Law	<ul style="list-style-type: none"> <li>● Contract and Agreement</li> <li>● Law of Indemnity and Guarantee</li> <li>● Negotiable Instruments</li> </ul>



## Bridge course Syllabus

F.Y.B.COM

SUBJECT	SYLLABUS
Commerce	<ul style="list-style-type: none"><li>• Introduction to Services</li></ul> Service Marketing Mix
Accountancy	<ul style="list-style-type: none"><li>• Adjusting and Closing Journal entries</li><li>• Capital and Revenue Items</li><li>• Basic of Final Accounts</li></ul>
B. Economics II	<ul style="list-style-type: none"><li>• Market structure</li></ul>
Maths & Stats	<ul style="list-style-type: none"><li>• To calculate correlation</li><li>• Estimation</li></ul>
Environmental studies	<ul style="list-style-type: none"><li>• Sustainable Development</li><li>• Biodiversity Conservation</li></ul>
Business Communication	<ul style="list-style-type: none"><li>• Practical Aspects of Theoretical Concept of communication briefed</li><li>• Overall Communication Skills in Job interview, Group discussion, meetings and significance of communication in corporate PR department</li></ul>
Foundation course	<ul style="list-style-type: none"><li>• Economic changes introduced in India 1991</li><li>• Constitution of India and structure of Indian Governance</li><li>• Psychological Aspect influencing A the social aspect such as stress, aggression and conflict.</li></ul>



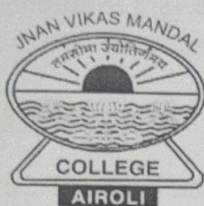
# Bridge course Syllabus

## F.Y.B.COM

CLASS	SUBJECT	SYLLABUS
F.Y.B.COM	Commerce	<ul style="list-style-type: none"><li>● Business and its environment</li><li>● Project planning</li><li>● Entrepreneurs and Entrepreneurship</li></ul>
	Accountancy	<ul style="list-style-type: none"><li>● Types of Accounts</li><li>● Rules of Different accounts</li><li>● Accounting Standards</li><li>● Journal entries</li><li>● Basic of Final accounts</li></ul>
	B.Economics I	<ul style="list-style-type: none"><li>● Introduction of economics</li><li>● Introduction of Diagram</li><li>● market equilibrium and mechanism</li></ul>
	Maths & Stats	<ul style="list-style-type: none"><li>● Use of calculator</li><li>● Basic Mathematics</li><li>● Measures of central tendency</li></ul>
	Environmental studies	<ul style="list-style-type: none"><li>● Environmental Concerns</li><li>● Global Warming</li><li>● Climate Change Mitigation</li></ul>
	Business Communication	<ul style="list-style-type: none"><li>● Importance of communication in daily life</li><li>● Importance of communication in professional life</li><li>● Business Communication- a Skill based Course</li></ul>







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**BMS Department**

**Bridge Course in Management (2022-2023)**

**Course Overview:**

Good management is equal parts knowing and doing. No matter what industry you work in or where you are in your career, a basic understanding of financial, marketing and decision-making principles and other management fundamentals will help you achieve your professional goals - be it getting promoted in your current job, getting ready for a MBA program, or starting your own company.

**Objectives of the Course:**

- To build a strong foundation of the management in the minds of the students.
- To form a base of accountancy and gradually teach the students analysis and use of financial statements.
- This course addresses the management challenge of designing and implementing the best combination of marketing actions to carry out a firm's strategy in its target markets.
- This course examines managerial decision making as it relates to both the internal organization of a firm's activities and the firm's relationship with its external environment.
- This course aims to help the students develop and sharpen knowledge and skills that are essential to designing and managing organizations to elicit the best out of their human resources.

**Course Outcome:**

The expected outcome of the course is to fill the Gap between the previous and current academic year level of knowledge of the students regarding all current aspects of management, marketing, accountancy, I.T which will help them to enter the job market with more confidence and attitude. The result of the course will be calculated on the basis of a test (MCQ type) taken by the faculties at the end of the course. Students scoring more than 40% in the test will be awarded with the certificate.

**Course Duration:**

30 lectures of one hour each.

**Pedagogy:**





The subject is based on the classroom teaching and assignments. Active participation by the student is important as they are going to be involved in practical learning as case study, team projects and quiz are main pedagogy instruments.

**Assessment:**

- Ø QUIZ: The most important part of assessment is QUIZ which will be conducted at the end of the certificate course through which students can check their IQ related to the subject.
- Ø Attendance: This will help students to maintain flow in their learning concepts.
- Ø Active Participation: This will improve students' communication and alertness and will learn the practical things related to the topic

**Earn a Certificate:**

When you finish every course and complete the hands-on project, you'll earn a Certificate that you can share with prospective employers and your professional network.





### CORE SYLLABUS

Duration: 04 Hours

Allocation of total hours for each topic

**HUMAN RESOURCE – YOGITA SAWANT (4 Lectures)**

SR. NO.	TOPICS	THEORY HOURS
1	Business environment -meaning features and importance	01
2	Types of Business	01
3	How to start a business	01
4	Assignment/Test based on Topics covered	01

Duration: 04 Hours

Allocation of total hours for each topic

**FINANCE – NAVAJ MULANI (4 Lectures)**

SR. NO.	TOPICS	DURATION
1	Golden Rules of Accounts,  Accounting Terms like debtors, creditors, receivables, payables, capital, preliminary expenses, underwriting etc.  Accounting principles-concepts and conventions & Accounting Standards.	02
2	Link between Journal, Ledger, Trial balance and Final Accounts.	01
3	Assignment/Test based on Topics covered	01





**Duration: 04 Hours**

**Allocation of total hours for each topic**

**MARKETING – ONKAR MONE (4 Lectures)**

SR. NO.	TOPICS	THEORY HOURS
1	Introduction of strategic Management, nature & Importance, Process of Strategic Management	01
2	Different Modes of Advertising	01
3	Introduction to Advertising	01
4	Assignment/Test based on Topics covered	01

**Duration: 04 Hours**

**Allocation of total hours for each topic**

**FINANCE – DIVYA GAUTAM (4 Lectures)**

SR. NO.	TOPICS	DURATION
1	Introduction of cost Accounting	01
2	Elements of Cost	01
3	Classification of overheads	01
4	Introduction to Corporate Finance	01





Duration: 04 Hours

Allocation of total hours for each topic

MARKETING: RIYU HALDANKAR (4 LECTURES)

SR. NO.	TOPICS	DURATION
1	Consumer Behaviour	01
2	Individual Determinants of Consumer Behaviour	01
3	Self-Concept	01
4	Environmental Determinants of Consumer Behaviour	01

Duration: 05 Hours

Allocation of total hours for each topic

I.T. – ARCHANA MADAM (5 Lectures)

SR.NO	TOPIC	DURATION
01	Knowing computer	01
02	Operating computer using GUI based operating system	02
03	Introduction to internet, www and web browsers	02
05	Assignment/Test based on Topics covered	01





Duration: 05 Hours

Allocation of total hours for each topic

COMMUNICATION – ANGEL JAEEL (5 LECTURES)

SR. NO.	TOPICS	THEORY HOURS
1	Communication Skills Overview	01
2	Job Application Letter and Resume	02
3	Interviews	01
4	Report Writing	01







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*Neena*



**CORE SYLLABUS**

**Duration: 06 Hours**

**Allocation of total hours for each topic**

**HUMAN RESOURCE – YOGITA SAWANT (4 Lectures)**

SR. NO.	TOPICS	THEORY HOURS
1	Business environment -meaning features and importance	01
2	Types of Business	02
3	How to start a business	02
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**Duration: 06 Hours**

**Allocation of total hours for each topic**

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**Duration: 06 Hours**

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SR. NO.	TOPICS	THEORY HOURS
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4	Assignment/Test based on Topics covered	01

**Duration: 06 Hours**

**Allocation of total hours for each topic**

**FINANCE – DIVYA GAUTAM (4 Lectures)**

SR. NO.	TOPICS	DURATION
1	Introduction of cost Accounting	01
2	Elements of Cost	02
3	Classification of overheads	02
4	Introduction to Corporate Finance	01



54

Duration: 06 Hours

Allocation of total hours for each topic

MARKETING: RIYU HALDANKAR (4 LECTURES)

SR. NO.	TOPICS	DURATION
1	Consumer Behaviour	01
2	Individual Determinants of Consumer Behaviour	02
3	Self-Concept	02
4	Environmental Determinants of Consumer Behaviour	01



Neena





## JNAN VIKAS MANDAL'S

Mohanlal Raichand Mehta College of Commerce  
Diwali Maa Degree College of Science  
Amritlal Raichand Mehta Degree College of Arts  
Padma Shree(Dr.) R.T. Doshi Degree College of Computer Science  
Plot no.9, Sector -19, Airoli, Navi-Mumbai.

### Bridge Course Syllabus June 2022-2023

Class: TYBBI

Duration:-30 Hours

Sr. No	No. of Hours	Subject	Syllabus
1	7 Hours	<b>BECG- Business Ethics and Corporate Governance</b>	<ul style="list-style-type: none"><li>● Introduction to ethics</li><li>● Meaning of ethics</li><li>● Origin of ethics</li><li>● General foundation of ethics</li><li>● Nature of ethics</li><li>● Morality V/s Ethics</li><li>● Types of ethics</li></ul>
2	7 Hours	<b>IBF- International Banking and Finance</b>	<ul style="list-style-type: none"><li>● Introduction to International finance</li><li>● Scope of International finance</li><li>● Balance of payment</li></ul>
3.	7 Hours	<b>Financial Reporting &amp; Analysis</b>	<ul style="list-style-type: none"><li>● What are Financial Statements?</li><li>● Definition of Financial Statements</li><li>● Five types of Financial Statements</li><li>● Features of Financial Statements</li><li>● Importance of Financial Statements</li><li>● Users of Financial Statements</li><li>● Financial Statements for Banks</li><li>● General Insurance: Types and Formats of Financial Statement</li><li>● Financial Statements of Life Insurance Companies</li></ul>
4	2 Hours	<b>Auditing- I</b>	<ul style="list-style-type: none"><li>● Introduction to Auditing</li><li>● Principles of Auditing</li><li>● Types of Audit</li><li>● Audit Planning</li><li>● Internal Audit</li><li>● Vouching / Verification</li></ul>



5	7 Hours	SM- Strategic Management	<ul style="list-style-type: none"> <li>● Introduction to Strategy and Strategic Management</li> <li>● Definition of Strategic Management</li> <li>● Levels of Strategic Management</li> <li>● Functions of Business Management</li> <li>● Types of Strategies</li> <li>● Types of Business Environment</li> <li>● SWOT Analysis</li> <li>● Strategic Business Unit</li> </ul>
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**Mr. Kishor Chauhan**  
 Co-ordinator (BBI & BAF)

  
**Dr. (Mrs.) Leena Sarkar**  
 Principal



**PRINCIPAL**  
 JNAN VIKAS MANDAL'S  
 M.R. MEHTA COLLEGE OF COMMERCE  
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Plot no.9, Sector -19, Airoli, Navi-Mumbai.

### Bridge Course Syllabus June 2022-2023


Class: SYBBI


Duration:-30 Hours

Sr. No	No. of Hours	Subject	Syllabus
1	5 Hours	FMK- Financial markets	<ul style="list-style-type: none"><li>● Introduction to financial system</li><li>● Role and Importance of Financial system in economic development</li><li>● Functions of Financial system</li><li>● Structure of financial system</li><li>● Role of government in Development of Indian Financial system</li></ul>
2	5 Hours	FC- An overview of Banking Company	<ul style="list-style-type: none"><li>● Introduction to Banking</li><li>● History of Indian Banking</li><li>● Definitions of banking</li><li>● Features of Banking</li><li>● General functions of banking</li><li>● Banking system and structure</li><li>● Types of banks</li></ul>
3	5 Hours	Direct Taxation -II	<ul style="list-style-type: none"><li>● What is tax Meaning of TAX</li><li>● Why are taxes levied</li><li>● Types of Direct Taxes</li><li>● Advantages of Direct Taxes</li><li>● Disadvantages of Direct Taxes</li><li>● Goods and Service Tax (GST)</li><li>● Direct tax vs. Indirect tax</li></ul>
4	5 Hours	OB- Organizational Behavior	<ul style="list-style-type: none"><li>● Introduction to OB</li><li>● Meaning of personality, learning</li><li>● Workplace ethics</li><li>● Decision making</li><li>● Negotiation</li><li>● Organizational Dynamics</li></ul>



5	5 Hours	MA- Management Accounting	<ul style="list-style-type: none"> <li>● Introduction to Management Accounting , Financial Accounting , Cost Accounting</li> <li>● Importance of Management Accounting</li> <li>● Role of Management Accounting</li> <li>● Objectives of Management Accounting</li> <li>● Tools used in MA</li> </ul>
6	3 Hours	Law	Introduction to IPR Features of IPR Advantages of IPR Types of IPR Registration of Trademarks
7	2 Hours	Soft Skills	Time Management Contemporary Resume

  
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**Bridge Course Syllabus June 2022-2023**

Class: TYBAF

Duration:-30 Hours

Sr. No	No. of Hours	Subject	Syllabus
1.	7 Hours	Financial Accounting -VI	<ul style="list-style-type: none"><li>• What are Financial Statements?</li><li>• Definition of Financial Statements</li><li>• Five types of Financial Statements</li><li>• Features of Financial Statements</li><li>• Importance of Financial Statements</li><li>• Users of Financial Statements</li><li>• Financial Statements for Banks</li><li>• General Insurance: Types and Formats of Financial Statement</li><li>• Financial Statements of Life Insurance Companies</li></ul>
2.	7 Hours	Financial Accounting -V	<ul style="list-style-type: none"><li>• Share Capital of a Company</li><li>• Categories of Share Capital</li><li>• Types of Shares</li><li>• Procedure of issue of shares</li><li>• Issue of shares for consideration other than cash</li><li>• Issue of Shares for cash in general, shares are issued for cash.</li><li>• Full, under and over subscription</li><li>• Issue of shares at premium</li><li>• Issue of shares at discount</li></ul>
4	2 Hours	Management -II	<ul style="list-style-type: none"><li>• Introduction to Management</li><li>• Marketing Management</li><li>• Marketing Mix</li><li>• Branding</li><li>• Total Quality Management</li><li>• Human Resource Planning</li><li>• Performance Appraisal</li><li>• Demat Account</li><li>• Venture capital</li><li>• Capital Market</li></ul>





5	7 Hours	Indirect Taxes	<ul style="list-style-type: none"> <li>● Introduction to Direct and Indirect Tax</li> <li>● Features of Indirect tax</li> <li>● Introduction to GST</li> <li>● Nature of Supply</li> <li>● Types of GST</li> <li>● Difference Between Direct and Indirect Tax</li> </ul>
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**Bridge Course Syllabus June 2022-2023**

Class: SYBAF

Duration:-30 Hours

Sr No	No. of Hours	Subject	Syllabus
1	5 Hours	FMO- Financial Market Operation	<ul style="list-style-type: none"><li>• Introduction to financial system</li><li>• Role and Importance of Financial system in economic development</li><li>• Functions of Financial system</li><li>• Structure of financial system</li><li>• Growth and development of Indian Financial system</li></ul>
2	5 Hours	Macro economics	<ul style="list-style-type: none"><li>• Meaning of Macro Economics</li><li>• Scope / subject Matter</li><li>• Importance</li><li>• Circular flow in a closed economic</li><li>• Circular flow in an Open economic</li></ul>
3	5 Hours	Direct Taxation -II	<ul style="list-style-type: none"><li>• What is tax Meaning of TAX</li><li>• Why are taxes levied</li><li>• Types of Direct Taxes</li><li>• Advantages of Direct Taxes</li><li>• Disadvantages of Direct Taxes</li><li>• Goods and Service Tax (GST)</li><li>• Direct tax vs. Indirect tax</li></ul>
4	5 Hours	Auditing	<ul style="list-style-type: none"><li>• Introduction to Auditing</li><li>• Definition of Auditing</li><li>• Vouching and Verification</li><li>• Internal Control</li><li>• Internal Audit</li><li>• Appointment of Auditors Investigation</li><li>• Internal Check</li></ul>
5	5 Hours	Law	Introduction to IPR Features of IPR Advantages of IPR Types of IPR Registration of Trademarks
6	5 Hours	Soft Skills	Time Management Contemporary Resume

**Mr. Kishor Chauhan**  
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**JNAN VIKAS MANDAL'S (Linguistic Minority)**  
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 DiwaliMaa College of Science  
 Amritlal Raichand Mehta College of Arts  
 Dr. R.T. Doshi College of Computer Science  
 Plot no.9, Sector -19, Airoli Navi Mumbai

Program	BAMMC
Year	2022-23
Class	TYBAMMC
Course	Bridge Course
Total Marks	100
Number of Lectures	40
<b>Objectives of the Course</b>	

1. The Course consists of knowledge about Media Industries and their relationship with Culture and Human Nature.
2. To understand the society and culture.
3. To understand the media ethics and laws.
4. To understand basics of Mass Media Studies to pursue career in future.
5. To understand the role of communication in Copywriting.
6. To understand the importance and impact of research in mass media.
7. To understand the sociological and demographical impact of media in society.
8. To understand the growing importance of Marketing in contemporary era.
9. To know the recent developments of marketing.

<b>Syllabus</b>		
Module	Topic	Lectures
1	<b>Media Ethics and Advertising.</b>	<b>10</b>
1.1	An introduction to Media ethics	2
1.2	Use of Colours and Human Emotion in Advertising.	03
1.3	International (Cross) Cultural dimensions of Advertising.	03
1.4	Advertising Laws & Ethics, work culture of Advertising Agency.	02
2	<b>COPY WRITING</b>	<b>10</b>
2.1	An introduction to Copywriting	02
2.2	Importance of copywriting in advertising Role of demography in copywriting	04
2.3	Media messages and its impact on human psychology	04
3	<b>Introduction to Marketing</b>	<b>10</b>
3.1	Core Marketing Concepts	02
3.2	Market Segmentation : Geographic, Demographic, Sociographic, Psychographic, Behavioral	04
3.3	New Trends in Marketing : E-Marketing, Internet Marketing, Marketing Using Social Network	04
<b>Total Lectures</b>		<b>30</b>





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Dr. R.T. Doshi College of Computer Science  
Plot no.9, Sector -19, Airoli Navi Mumbai

<b>Program</b>	<b>BAMMC</b>
<b>Year</b>	<b>2022-23</b>
<b>Class</b>	<b>SYBAMMC</b>
<b>Course</b>	<b>Bridge Course</b>
<b>Total Marks</b>	<b>100</b>
<b>Number of Lectures</b>	<b>40</b>

#### **Objectives of the Course**

1. To render an understanding of the importance of communication in media.
2. To understand visual communication through social media.
3. To understand relationship between human behavior and mass media.
4. To understand concept of Mass Media Studies and its applications in life.
5. To understand the importance of media in politics, economics, social life, global and local culture.
6. To encourage understanding and critical evaluation of new and old media technologies.
7. To understand the contemporary and historical impact of media on individuals and societies.

#### **Course Outcome**

1. The program enables the students to develop critical thinking, writing skills and effective oral communication.
2. Learners will develop an awareness of political, social and corporate issues in a global level.
3. The program will equip students to make careers in different industries related to media.
4. To provide the students basic understanding about the concept of public relations.





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 Plot no.9, Sector -19, Airoli Navi Mumbai

Program	BAMMC
Year	2022-23
Class	SYBAMMC
Course	Bridge Course
Total Marks	100
Number of Lectures	40

#### Objectives of the Course

1. To render an understanding of the importance of communication in media.
2. To understand visual communication through social media.
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4. To provide the students basic understanding about the concept of public relations.

#### Syllabus

Module	Topic	Lectures
<b>1</b>	<b>Role of Visual Communication in Advertising.</b>	<b>06</b>
1.1	An introduction to visual communication theories.	02
1.2	Social responsibilities of Advertising.	02
1.3	The Relationship between the human behavior and Mass Media.	02
<b>2</b>	<b>Media theories, practices and its implications</b>	<b>06</b>
2.1	An introduction to Media theories – its evolution.	01
2.2	Forms of various media communication	01



2.3	Perspectives and practices of different media Mass media content of radio, T.V, film, newspaper, magazines, books, music, digital gaming, internet and social media.	03
3	<b>Overview of Constitution</b>	<b>06</b>
3.1	A brief introduction to Indian Constitution	02
3.2	India's legal system – structure and hierarchy of Indian Judiciary – the various levels of courts for civil and criminal action	02
3.3	Media and Democracy	02
4	<b>Writing for Media</b>	<b>06</b>
4.1	Report Writing	2
4.2	Press Release	1
4.3	Copywriting	1
4.4	Creativity in workplace	2
5	<b>Fundamentals of Computer</b>	<b>06</b>
5.1	<b>Microsoft Word:</b> - Interface, Templates, Text formatting, working with images, create an index, bibliography, create brochures, flyers	01
5.2	<b>Microsoft Excel:</b> - Create a spreadsheet, Format cells, rows, columns, and entire worksheets so they fit and match your data, enter data into a spreadsheet, use formulas and functions for math, accounting, and totalling, create formulas and functions, create charts and diagrams for your data, Create data lists and forms	03
5.3	<b>Microsoft PowerPoint:</b> - Create new presentations from scratch, add text, pictures, sounds, movies, and charts to your presentations, Design slides using themes, colours, and special effects, animate objects on slides, add special effects to slide transitions to spice up your presentations, set up slide shows and rehearse timings for your slides	02
<b>Total Lectures</b>		<b>30</b>





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Plot No.9, Sector -19, Airoli, Navi Mumbai  
NAAC Re-Accredited CGPA-3.33 'A'-Grade

**Syllabus of Bridge Course for TYBsc(IT) sem 6**

Duration: - 40 hours

**OBJECTIVES: -**

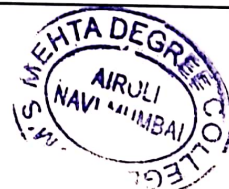
- 1) To bridge the gap between subjects studied at pre-university level and subjects they would be studying at graduation.
- 2) To provide adequate foundation in core subjects, limited to moderate level so that students do not face any difficulty when the classes commence.
- 3) To act as a buffer for the new entrance.
- 4) To demonstrate a breadth and depth of knowledge in the discipline of computer science and information technology.

**OUTCOME: -**

Students will be able to

- 1) Equipped with the knowledge and confidence needed to take on bigger challenges.
- 2) Impact basic knowledge in them about advanced subjects that will be taught to them in the upcoming future.
- 3) Understand the essence of knowledge gained beyond the curriculum.

Module	Contents	Number of hours
I	<b>ITIL</b> What Is the ITIL Framework? An Overview of ITIL 4 Framework, The Four Dimensions of ITIL 4. Factors impacted the dimensions, Five Stages of ITIL? Understanding the Service Value Chain, The Benefits of ITIL 4. Why ITIL is required? What is ITIL certification and is it worth it? How can ITIL improve my company's business performance?	8 hours



II	<b>Project Development</b> Software Development Process The entire <u>software development</u> process <u>requirements engineering,</u> <u>software design,</u> <u>coding,software configuration management</u> <u>testing, release management</u>	6 hours
	Case study/Assignment and test	2 hours
III	<b>Introducing Security</b> Understanding Confidentiality Understanding Integrity Understanding Availability Defining Threats and Risk Management Understanding Computer Security Understanding AAA Protecting Client and Server & Networks	6 hours
	Case study/Assignment and test	2 hours
IV	<b>Fundamentals of Business Intelligence</b> 1. Introduction to Business process 2. Life cycle of Business Process Management 3. Importance of Data 4. Knowledge Discovery 5. Introduction to Data Mining	6 hours
	Assignment and test and Video Tutorial	2 hours





V	<b>Fundamentals of PGIS</b> What to expect from a Geographic Information Systems career? <ul style="list-style-type: none"> <li>· Geographic Information Systems Courses</li> <li>· General Geographic Information Systems Program Requirements</li> <li>· Geographic Information Systems Jobs and Salaries</li> </ul> Techniques and Technology <ul style="list-style-type: none"> <li>· Relating Information and different sources</li> <li>· GIS uncertainties</li> <li>· Data representation</li> <li>· Data capture</li> <li>· Projections, coordinate systems, and registration</li> </ul>	6 hours
	Case study/Assignment and test	2 hours

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*Janhavi*

Asst. Prof. Janhavi Kshirsagar  
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*B.R. Deshpande*

Dr. B. R. Deshpande  
Vice-Principal



*Leena*

Dr. (Mrs) Leena Sarkar

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 NAAC Re-Accredited CGPA-3.33 'A'-Grade

Bridge Course for TYBsc(IT) 2022-23 Sem-5

Duration: - 30 hours

**OBJECTIVES: -**

1. To bridge the gap between subjects studied at pre-university level and subjects they would be studying in graduation.
2. To provide adequate foundation in core subjects, limited to moderate level so that students do not face any difficulty when the classes commence.
3. To act as a buffer for the new entrance.
4. To demonstrate a breadth and depth of knowledge in the discipline of computer science and information technology.

**OUTCOME: -**

Students will be able to

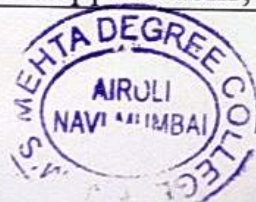
1. Equipped with the knowledge and confidence needed to take on bigger challenges.
2. Impact basic knowledge in them about advanced subjects that will be taught to them in upcoming future.
3. Understand the essence of knowledge gaining beyond curriculum.

Module	Contents	Number of hours
I	<b>Module: Embedded Systems</b> <b>Introduction:</b> Embedded Systems and general-purpose computer systems, history, classifications. <b>Core of Embedded Systems:</b> Microprocessors and microcontrollers, RISC and CISC controllers, Big-endian and Little-endian processors. <b>Characteristics and quality attributes of embedded systems:</b> Characteristics, Operational and nonoperational quality attributes. <b>Embedded Hardware:</b> Memory map, i/o map, interrupt map, processor family, external peripherals, memory – RAM, ROM, types of RAM and ROM, memory testing, CRC, Flash memory.	5 hours
	Case study/Assignment and test	1 hour
II	<b>Module: Computer Network</b> <b>Introduction to data communications and networking:</b>	5 hours





	<p>Fundamental concepts, Data communications, Protocol, standards, standard organizations</p> <p><b>Network Models:</b> The OSI reference model, TCP/IP model</p> <p><b>Media and Transmission modes</b></p> <p><b>Network topologies:</b> Mesh, star, tree, ring, bus, hybrid.</p> <p><b>Introduction to Physical layer:</b> Data and signals, periodic analog signals, digital signals, transmission impairment, data rate limits, performance.</p> <p>Case study/Assignment and test</p>	1 hour
III	<p><b>Module: Web/.NET</b></p> <p><b>Evolution of Web Development:</b></p> <ul style="list-style-type: none"> <li>• The Evolution of Web Development</li> <li>• Introduction to Web Programming</li> <li>• Basic HTML</li> <li>• CSS</li> <li>• Website development overview</li> </ul> <p><b>Introduction to ASP.NET:</b></p> <ul style="list-style-type: none"> <li>• ASP.NET</li> <li>• Server-Side and Client-Side Programming</li> <li>• .Net framework</li> </ul> <p><b>Introduction to C# Language:</b></p> <ul style="list-style-type: none"> <li>• Programming Features Of C#</li> <li>• Constants, Variables, Keywords</li> <li>• C# Datatypes</li> <li>• Operators</li> <li>• Type Casting</li> </ul> <p><b>Introduction to Visual Studio:</b></p> <ul style="list-style-type: none"> <li>• Introduction to IDE</li> <li>• .Net Editions</li> <li>• Use Interface</li> <li>• Toolbox</li> <li>• How to Create and Run Project</li> <li>• Features of VS</li> </ul> <p>Case study/Assignment and test</p>	5 hours
	Case study/Assignment and test	1 hour
IV	<p><b>Module: Advanced DBMS</b></p> <p><b>Advanced DBMS:</b> Comparison between different databases: Significance of Databases, Database System Applications, Advantages</p>	5 hours





	and Disadvantages of different Database Management systems, Comparison between DBMS, RDBMS <b>Normalization:</b> Functional Dependency, Anomalies in a Database, The normalization process: Conversion to first normal form, Conversion to second normal form, Conversion to third normal form, The boyce-code normal form(BCNF), Fourth Normal form and fifth normal form, normalization and database design, Denormalization.	
V	<b>Module: Advanced Java</b> <b>Swing:</b> Need for swing components, Difference between AWT and swing, Components hierarchy, Panes, Swing components: JLabel, JTextField and JPasswordField, JTextAreas, JButton, JCheckBox, JRadioButton, JComboBox and JList <b>JDBC:</b> Introduction, JDBC Architecture, Types of Drivers, Statement, ResultSet, Read Only ResultSet, Updatable ResultSet, Forward Only ResultSet, Scrollable ResultSet, PreparedStatement. Case study/Assignment and test	1 hour 5 hours 1 hour

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Asst. Prof. Janhavi Kshirsagar  
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Dr. B. R. Deshpande  
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*Leena*

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 NAAC Re-Accredited CGPA-3.33 'A'-Grade

Syllabus Bridge Course for SYBse(IT) Sem-4

**OBJECTIVES: -**

Duration: - 30 hours

- 1) To bridge the gap between subjects studied at pre-university level and subjects they would be studying at graduation.
- 2) To provide adequate foundation in core subjects, limited to moderate level so that students do not face any difficulty when the classes commence.
- 3) To act as a buffer for the new entrance.
- 4) To demonstrate a breadth and depth of knowledge in the discipline of computer science and information technology.

**OUTCOME: -**

Students will be able to

- 1) Equipped with the knowledge and confidence needed to take on bigger challenges.
- 2) Impact basic knowledge in them about advanced subjects that will be taught to them in the upcoming future.
- 3) Understand the essence of knowledge gained beyond the curriculum.

Module	Contents	Number of hours
I	<p>Module: Fundamentals of Embedded Systems</p> <p>Components of Embedded Systems</p> <ul style="list-style-type: none"> <li>• Power supply. For the embedded system the power supply is the key component to provide the power to the embedded system circuit. ...</li> <li>• Processor. ...</li> <li>• Memory. ...</li> <li>• Timers counters. ...</li> <li>• Communication ports. ...</li> <li>• Output and Input. ...</li> </ul> <p>Circuits used in application.</p> <p>What are Fundamentals of Embedded Systems?</p> <p>The embedded systems basics include the components of embedded system hardware, embedded system types and several characteristics. An embedded system has three main components: Embedded system hardware, Embedded system software and Operating system.</p> <p>What is the embedded system by Tutorials point?</p>	5 hours





	We can broadly define an embedded system as a microcontroller-based, software-driven, reliable, real-time control system, designed to perform a specific task. It can be thought of as a computer hardware system having software embedded in it.	
	Case study/Assignment and test	1 hour
II	<p>Module: Computer Oriented Statistical Techniques</p> <ol style="list-style-type: none"> <li>1. Notation</li> <li>2. Summation Notation, Averages</li> <li>3. Measures of Central Tendency</li> <li>4. The Arithmetic Mean</li> <li>5. Notation</li> <li>6. Summation Notation, Averages</li> <li>7. Measures of Central Tendency</li> <li>8. The Arithmetic Mean</li> <li>9. Notation</li> <li>10. Summation Notation, Averages</li> <li>11. Measures of Central Tendency</li> <li>12. The Arithmetic Mean</li> </ol> <ol style="list-style-type: none"> <li>1. The Arithmetic Mean Computed from Grouped Data</li> <li>2. The Median</li> <li>3. The Mode</li> <li>4. The Empirical Relation Between the Mean, Median, and Mode Mean.</li> </ol> <ol style="list-style-type: none"> <li>1. Quartiles</li> <li>2. Deciles</li> <li>3. Percentiles</li> </ol>	5 hours
	Case study/Assignment and test	1 hour
III	<p>Module: Fundamentals of Graphics</p> <p>What is CG?</p> <p>Its introduction, definitions.</p> <p>Different areas of CG.</p> <p>Various applications of CG.</p> <p>Examples of graphics devices.</p> <p>Input devices.</p> <p>Output devices.</p>	5 hours
	Case study/Assignment and test	1 hour





IV	Module: Introduction to Java Basics of Java Introduction to Java Similarities and differences between Java and C++ Setting up the environment in Java Java Basic syntax Differences between JDK, JVM and JRE	5 hours
	Case study/Assignment and test	1 hour
V	Module: Project Implementation Introduction of Project Management Project Planning Process and Project metrics Estimation of software Project	5 hours
	Case study/Assignment and test	1 hour

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Incharge- IT DEPT

*Janhavi*

Asst. Prof. Janhavi Kshirsagar  
Coordinator CS-IT DEPT

*B.R. Deshpande*

Dr. B. R. Deshpande  
Vice-Principal



*Leena*

Dr. (Mrs) Leena Sarkar

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### Bridge Course for SYBsc(IT) 2022-23 Sem-3

Duration: - 30 hours

#### OBJECTIVES: -

1. To bridge the gap between subjects studied at pre-university level and subjects they would be studying in graduation.
2. To provide adequate foundation in core subjects, limited to moderate level so that students do not face any difficulty when the classes commence.
3. To act as a buffer for the new entrance.
4. To demonstrate a breadth and depth of knowledge in the discipline of computer science and information technology.

#### OUTCOME: -

Students will be able to

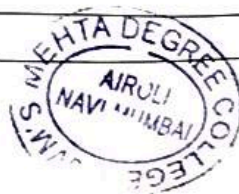
1. Equipped with the knowledge and confidence needed to take on bigger challenges.
2. Impact basic knowledge in them about advanced subjects that will be taught to them in upcoming future.
3. Understand the essence of knowledge gaining beyond curriculum.

Module	Contents	Number of hours
I	<b>Module: OOPs/Python</b> <b>Object Oriented Methodology:</b> Introduction, Advantages and Disadvantages of Procedure Oriented Languages, what is Object Oriented? What is Object Oriented Development? Principles of OOPS: OOPS Paradigm, Basic Concepts of OOPS- Objects, Classes, Data Abstraction and Data Encapsulation, Inheritance, Polymorphism, Dynamic Binding, Message Passing  <b>Python:</b> How to create a class, Instantiating objects, Adding attributes to a class, Defining methods within a	5 hours





	class, Passing arguments to methods Case study/Assignment and test	1 hour
II	<p><b>Module: COD/Microprocessor</b>  <b>Microprocessor, microcomputers, and Assembly Language:</b> Microprocessor, Microprocessor Instruction Set and Computer Languages, From Large Computers to Single-Chip Microcontrollers, Applications.  <b>Microprocessor Architecture and Microcomputer System:</b> Microprocessor Architecture and its operation's, Memory, I/O Devices, Microcomputer System, Logic Devices and Interfacing, Microprocessor-Based System Application.  <b>8085 Microprocessor Architecture and Memory Interface:</b> Introduction, 8085 Microprocessor unit, Addressing Modes in 8085</p>	5 hours
	Case study/Assignment and test	1 hour
III	<p><b>Module: Digital Electronics</b>  <b>Number system</b> – Analog, Digital, binary, octal, hexadecimal and its conversion.  <b>Binary Arithmetic:</b> Binary addition, Binary subtraction.  <b>Negative number representation:</b>  Subtraction using 1's complement and 2's complement.</p>	5 hours
	Case study/Assignment and test	1 hour
IV	<p><b>Module: Imperative Programming/Data structure</b>  <b>Introduction:</b> Types of Programming languages, History, features and application. Simple program logic, program development cycle, flowchart symbols, desirable program characteristics.  <b>Fundamentals:</b> Structure of a program. Compilation and Execution of a Program, Character Set, identifiers and keywords, data types, constants, variables and arrays, declarations, expressions, statements, Variable definition, symbolic constants.  <b>Operators and Expressions:</b> Arithmetic operators, unary operators, relational and logical operators, assignment operators, the conditional operator, bitwise operators, special operator.  (With examples)</p>	5 hours
	Case study/Assignment and test	1 hour
V	<b>Module: Communication Skill</b>	5 hours





Need and Importance	
Interview	
Resume	
Job Application Letter	
Emotional Intelligence	
Report Writing	
Email Writing, Notice and Agenda	
Case study/Assignment and test	
	1 hour

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Asst. Prof. Archana Sanap  
Incharge- IT DEPT

*JK*

Asst. Prof. Janhavi Kshirsagar  
Coordinator CS-IT DEPT

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## SYLLABUS OF BRIDGE COURSE OF FYBSC.I.T SEM-II

Duration: - 40 hours

### Objectives-

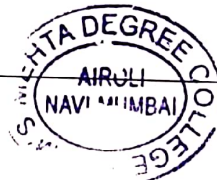
Bridge course helps the students to open up, think creatively and become responsible and independent students. The objective of the bridge course is to demystify what is expected of students in Pre University-level classes and to provide adequate foundation in the core IT subjects, limited to moderate level so that students do not face any difficulty when the classes commence. Bridge Course will help the students to have a smooth transition to the regular course.

### Outcome-

On successful completion of this course, students will be able to:

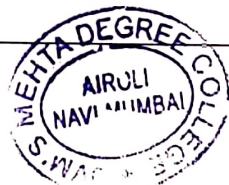
1. recognize key terms and ideas in academic contexts within in the student's field of interest
2. skim and scan reading with increasingly accurate understanding for prediction
3. deliver a presentation on academic topics

Module	Contents	Number of hours
I	<b>Sub:Introduction to HTML</b> Introduction, Web browsers. HTML History. HTML Editors- Learn HTML Using Notepad or TextEdit. HTML Basic Examples. HTML Elements. HTML Attributes. HTML Styles. HTML Formattings.	8 hours





	<hr/> Assignment <hr/> Test	
II	<b>Sub: Introduction to C++ Programming</b> Introduction features & key-points Applications of C++ <u>Some interesting facts about C++</u> C++ Programming Basic Advantages and Disadvantages of Procedure Oriented Languages, what is Object Oriented? What is Object Oriented Development? Object Oriented Themes Benefits and Application of OOPS. <hr/> Assignment <hr/> Test	8 hours
III	<b>Sub: Green Technology</b> Introduction What is Green Tech? Understanding Green Tech History of Green Tech Types of Green Tech Adoption of Green Tech examples of green technology Renewable Energy vs. Nonrenewable Energy The Power of Positive Green Thinking <hr/> Assignment. <hr/> Test.	8 hours
IV	<b>Sub: Introduction to microprocessor</b> History of Computers, Evolution of Computers, Brief history of Internet, Basics of Microprocessor, Components of MPU, Memory components ,Control Unit, RISC, CISC <hr/> Assignment	8 hours



	Test	
V	<b>Sub: Foundation of Numerical Methods</b> Basics of Number Forward Difference Table Backward Difference Table Difference Table Probability introduction Expected value using probability mass function <hr/> Assignment <hr/> Test	8 hours

*Archana*

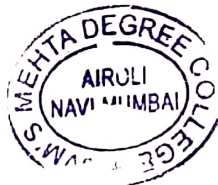
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**Course Syllabus**  
**Bridge Course for TYBsc(CS)**

**Duration: - 30 hours**

**OBJECTIVES: -**

- 1) To bridge the gap between subjects studied at pre-university level and subjects they would be studying at graduation.
- 2) To provide adequate foundation in core subjects, limited to moderate level so that students do not face any difficulty when the classes commence.
- 3) To act as a buffer for the new entrance.
- 4) To demonstrate a breadth and depth of knowledge in the discipline of computer science and information technology.

**OUTCOME: -**

Students will be able to-

- 1) Equipped with the knowledge and confidence needed to take on bigger challenges.
- 2) Impact basic knowledge in them about advanced subjects that will be taught to them in upcoming future.
- 3) Understand the essence of knowledge gaining beyond curriculum



Module	Contents	Number of hours
1	<p>Module : Basics of Information Retrieval</p> <p>Introduction to Information Retrieval, Data Retrieval vs Information Retrieval, Problems with Information Retrieval, Applications of IR- Integrated Solution, Distributed IR, Semantic Matching, Interface and Browsing, Routing and Filtering, Effective Retrieval, Multimedia, Information Extraction</p>	4 Lectures
	Case Study / Assignment and Test	2 Lectures
2	<p>Module : Basics of Ethical Hacking</p> <p>Crisis in hacking, Computer Crime cases, Why security is required, Why do hackers attack, Types of hackers, Modes of hackers attacks, Types of attacks like Spoofing, Email Spoofing, Web Spoofing, Session Hijacking, Denial of Service (DOS) etc</p>	4 Lectures
	Case Study / Assignment and Test	2 Lectures
3	Module: Introduction to Security	4 Lectures

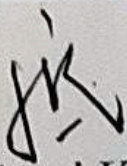





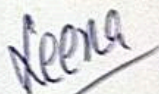
	Security, aspects of security, need of security, basics of security, 5 elements of security, Computer security, security threats, Viruses, Malware, Spyware	
	Case Study / Assignment and Test	2 Lectures
4	<p>Fundamentals of Data Science:</p> <p>Journey from Data to Data Science: DBMS, DW, Data Mining, Business Intelligence, DATA science Basics.</p> <p>How to sound like a Data Scientist ?</p> <p>What is DS?</p> <p>Why DS?</p> <p>Types of</p> <p>DATA :</p> <p>DATA Cleaning , Data Transformation</p>	4 Lectures
	Case Study / Assignment and Test	2 Lectures
5	<p>Introduction to Cloud Computing :</p> <p>Introduction to Cloud Computing, Characteristics and benefits of Cloud</p> <p>Computing, Advantages and Disadvantages of Cloud Computing.</p>	4 Lectures



	<p>Different Cloud Platforms and Their Processing, AWS, Microsoft Azure, Google app Engine, Hadoop, IBM Cloud etc.</p> <p>Reference Model, Types of Clouds, IAAS, PAAS, SAAS, Virtualization</p> <p>Different real time examples.</p>	
	<p>Case Study / Assignment and Test</p>	<p>2 Lectures</p>

  
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 CS-IT Coordinator

  
 Dr. B.R. Deshpande  
 Vice Principal

  
 Dr. (Mrs.) Leena Sarkar  
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**Bridge Course for FY B.TECH**

Duration: 10 Hours

**OBJECTIVES:-**

- 1) To bridge the gap between subjects studied at pre-university level and subjects they would be studying at graduation.
- 2) To provide adequate foundation in core subjects, limited to moderate level so that students do not face any difficulty when the classes commence.
- 3) To act as a buffer for the new entrants.
- 4) To demonstrate a breadth and depth of knowledge in the discipline of computer science and information technology.

**OUTCOME:-**

Students will be able to

- 1) Equipped with the knowledge and confidence needed to take on bigger challenges.
- 2) Impact basic knowledge in them about advanced subjects that will be taught to them in upcoming future.
- 3) Understand the essence of knowledge gaining beyond curriculum.

Module	Contents	Number of hours
1	<b>Module: Java Programming</b> Introduction to Java, History, Features of Java, Java programming format, Java Tokens, Java Statements, Java Data Types. Basic programs based on these topics Introduction, Class, Object, Static Keywords, Constructors, this Key Word, Inheritance, super Key Word, Polymorphism Basic programs based on these topics Interfaces , Introduction to predefined packages (java.lang, java.util, java.io,	5 hours



	<p>java.sql, java.swing), User Defined Packages, Access specifiers , Exception Handling.          Basic programs based on these topics          Swing: Need for swing components, Introduction to Swing components: JLabel, JTextField and JPasswordField, JTextAres, JButton, JCheckBox, JRadioButton, JComboBox and JList          JDBC: Introduction, JDBC Architecture,          Servlets: Introduction, Web application Architecture, Http Protocol &amp; Http Methods, Web Server &amp; Web Container          JSP: Introduction</p>	
	Case study/Assignment and test	1 hour
II	<p><b>Module: Software Engineering and Software Testing</b>  <b>Software Engineering:</b>          The Nature of Software, Software Engineering, The Software Process, Generic Process Model, The Waterfall Model, Incremental Process Models, Evolutionary Process Models, Concurrent Models, Component-Based Development, The Unified Process Phases, Agile Development- Agility, Agile Process, Extreme Programming, SRS, Characteristics of SRS , Object-oriented design using the UML - Class diagram, Object diagram</p> <p><b>Software Testing</b>          Verification and Validation, Introduction to Testing, Testing Principles, Testing Objectives, Test Oracles, Levels of Testing, White-Box Testing/Structural Testing, Functional/Black-Box Testing          Test Plan, Test-Case Design</p>	5 hours
	Case study/Assignment and test	1 hour
III	<p><b>Module: .NET and Web Programming</b>          Overview of .NET Framework, Objectives, Main components of .NET Framework and their overview, Types of Applications .NET</p>	5 hours






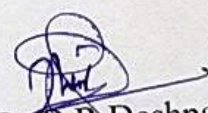
	<p>Framework Architecture- CLR, Features, Managed Execution Process, CTS, CLS Assemblies (Assembly overview, Benefits, Contents, Types), Basics of C#.NET, Data Types and Variables, Statements, Methods: Functions and Subroutines</p> <p>Introduction of HTML, HTML Tags - Formatting text by using tags, using lists and backgrounds, Creating hyperlinks and anchors, tables</p>	
	Case study/Assignment and test	1 hour
IV	<p><b>Module: Android</b></p> <p><b>Introduction to Android:</b> History, Basics of Android UI, Android Versions, Open Handset Alliance, Native Android Applications, Comparison with other Operating System. <b>Android Software Stack:</b> Linux Kernel, Libraries, Android Runtime, Application Framework, Application Layer. <b>Android Architecture</b> Android SDK features, Android Debug Bridge, Gradle. <b>Android App Software Components:</b> Activity, Service, Content Provider, Broadcast Receiver, Intent.</p> <p><b>Android Permissions and Limitations</b></p> <p><b>Activities and Lifecycle, Fragments and Intents - Working with</b></p> <p><b>Activities-</b>creating activity, starting activity, managing life cycle of activity, applying themes and styles, displaying dialog in activity; Using</p> <p><b>Intents-</b>exploring intent objects, filters passing data using objects in intents; <b>Fragments,</b> Intent Object to Invoke Built-in Application,</p> <p><b>Basic Views:</b> TextView, Button, ImageButton, EditText, CheckBox, ToggleButton, RadioButton,</p>	5 hours
	Case study/Assignment and test	1 hour

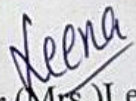




<b>Module: Data Communication and Network</b>	5 hours
Network Basics, Nodes, Links, Layers, Layered Tasks, OSI Model, Layers of OSI Model, TCP/IP Network Model, Packet encapsulation, Packet Forwarding, Routing, Data Communication, Components of Data Communication System, Data flow, Networks, Network criteria, Physical structures, Topology: Star, Bus, Mesh, Hybrid, Ring, LAN, MAN, WAN, Internet, Protocols LAN Topologies: Bus, Star, Ring, Switched, daisy chains, hierarchies. WAN Topologies: Peer-to-Peer WAN, Ring WANs, Star WAN, Full-Mesh WAN, Partial Mesh, Two-tiered, Three tiered, Hybrids	1 hour
Case study/Assignment and test	1 hour

  
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**Bridge Course for SYBsc(CS) Sem IV**

**Duration: - 40 hours**

**OBJECTIVES: -**

- 1) To bridge the gap between subjects studied at pre-university level and subjects they would be studying in graduation.
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**OUTCOME: -**

Students will be able to-

- 1) Equipped with the knowledge and confidence needed to take on bigger challenges.
- 2) Impact basic knowledge in them about advanced subjects that will be taught to them in upcoming future.
- 3) Understand the essence of knowledge gaining beyond curriculum.





Module	Contents	Number of hours
I	<p><b>Module: Software Engineering and Computer Network</b></p> <p><b>Software Engineering:</b>  The Nature of Software, Software Engineering, The Software Process, Generic Process Model, The Waterfall Model, Incremental Process Models, Evolutionary Process Models, Concurrent Models, Component-Based Development, The Unified Process Phases, Agile Development- Agility, Agile Process, Extreme Programming, SRS, Characteristics of SRS</p> <p><b>Computer Network:</b>  Network Basics, Nodes, Links, Layers, Layered Tasks, OSI Model, Layers of OSI Model , Networks, Network criteria, Physical structures, Topology: Star, Bus, Mesh, Hybrid, Ring, LAN, MAN, WAN, Internet, Protocols</p> <p>LAN Topologies: Bus, Star, Ring, Switched, daisy chains, hierarchies.</p> <p>WAN Topologies: Peer-to-Peer WAN, Ring WANs, Star WAN, Full-Mesh WAN, Partial Mesh, Two-tiered, Three tiered, Hybrids</p>	8 hours

**Case study/Assignment and test**

**2 hour**





2	<p><b>PL/SQL:</b> Introduction of PL/SQL, Basic syntax, PL/SQL Variables, How to declare variable in PL/SQL, Local and Global Variable, Variable Attributes, Types of Variable attributes, Procedure : Parts of PL/SQL subprogram, Creating Procedure, Parameters Modes in PL/SQL Procedure</p> <p><b>.NET Framework :</b> Introduction of .NET Framework, Components of .NET Framework - CLR, Framework Class Library, Garbage Collection, Languages, Principles of .NET Framework</p>	
3	<p><b>Module: Basics of Algorithms and Linear Algebra:</b></p> <p><b>Basics of Algorithms:</b> Algorithms, Types of algorithms, examples of types of algorithms, time complexity, space complexity, cases of algorithms, flowchart and its applications.</p> <p><b>Linear Algebra:</b> Matrix, Operations on Matrices, Vector, Operations on Vector</p>	8 hours
	Case study/Assignment and test	2 hours
4	<b>Module 4- Advanced Java and Android</b>	8 hours





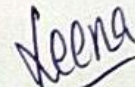
<p><b>Advanced Java</b> : Introduction to predefined packages User Defined Packages, Use of Packages, Interfaces Uses of Interfaces. Introduction to Applet</p>	
<p><b>Introduction of AWT:</b> Features of AWP, Basic Components, Hierarchy, Basic Functioning of components, and Uses.</p>	
<p><b>Introduction to JDBC:</b> Classes used in JDBC, JDBC architecture.</p>	
<p><b>Introduction to Android:</b> Introduction of Android Different Versions of Android. Features of android. Android Architecture. Obtaining the required tools</p>	
<p><b>Case study/Assignment and Test</b></p>	<p>2 hours</p>



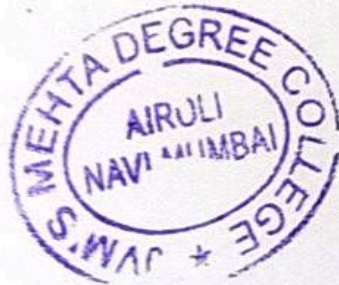
s. Janhavi Kshirsagar  
-IT Coordinator



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Work in Progress, Free Software Foundation  
 Introduction to Object oriented programming  
 Program, A good as well as a bad  
 Exception handling  
**Free Open Source Software:**  
 Introduction to Open Source Free Software,  
 Free Software vs Open Source software,  
 Public Domain Software, FLOSS, how not  
 mean no cost. History, OSI, The Free  
 Software Foundation and the GNU Project  
 Open Source History, Initiatives, Principle  
 and methodologies. Examples: Wikipedia,  
 Android, Linux, Wordpress, GitHub

Case study Assignment and test

1 hour

II

**Module: Database Management System and MySQL.**

6 hours

Introduction to DBMS - Database, DBMS  
 Definition, Overview of DBMS, Advantages  
 of DBMS, Levels of abstraction, Data  
 independence, DBMS Architecture,  
 Entity Relationship Model - Entities,  
 attributes, entity sets, relations, relationship  
 sets. SQL (Structured Query Language), SQL  
 statements

Case study/Assignment and test

1 hour

III

**Module: Operating System and Linux Linux**

6 hours

History of Linux, philosophy, community,  
 terminology, Distributions,  
 Linux Kernel vs. distribution. Linux  
 Architecture, File systems basic, The boot  
 process, init scripts, run  
 levels, shutdown process, File system, File  
 system architecture, file types, File attributes,  
 working  
 with files, Understanding Linux Security,  
 Users of root, sudo command, working with  
 passwords,  
 Packaging methods: rpm/deb, Graphical Vs  
 Command line.





**Operating Systems:**  
 Introduction, OS, Operating Systems  
 Structures, Evolution of Operating Systems  
 Operating System & OS, Operating Systems  
 Operating System, Operating Systems  
 Computing Environment, Operating Systems  
 Services, Types, OS, Types of Systems  
 Interface, System Calls  
 Calls, Operating System Services  
 Deadlocks, Deadlock Prevention, Deadlock  
 Avoidance, Deadlock Detection

Case study Assignment and test

1 hour

IV

**Module: Computer Organization & Design and Digital Electronics**

6 hours

**Computer Organization & Design:**  
 Computer Organization and Architecture,  
 Computer types, Basic Terminologies,  
 Computing Systems, Functional Unit of  
 Computer, Basic Operational Concepts,  
 Registers, Interrupt, Bus structure,  
 Performance, Memory Location and  
 Addresses, Address Space, Big Endian,  
 Memory Operations

**Digital Electronics:**  
 Logic Circuits, Basic Logic Gates, NOT Gate,  
 AND Gate, NOR Gate, NAND Gate, OR  
 Gate, EX-OR Gate, EX-NOR Gate,  
 Applications of Logic Gates, Multiplexer,  
 Demultiplexer, Number System- Binary,  
 Octal, Decimal, hexadecimal, Conversion,  
 Electronic translators

Case study/Assignment and test

1 hour

V

**Module: C programming and Data Structure**


7 hours


Introduction to C, Data types, C Tokens,  
 operators, Types of Operator keyword, types  
 of Statements.  
 Programs based on above topics. Introduction  
 to Control Structure, simple if, i-else, nested if,  
 Loops, Types of loops, Switch-Case, Jump



	Break	Continues	units
Statements Programs based on above topics Introduction to Array, Search Types of Array, Memory allocation of array elements, C++ dimensional array, Two dimensional array, Built in Functions, User defined Functions Programs based on above topics Introduction to Data structure Need of Data Structure Types of Data Structures Operations can be performed on Data Structure Searching and Sorting: Searching-Linear Search, Binary Search, Sorting-Bubble, Selection and Insertion Sort, Linked Structures: Introduction, Singly Linked List-Traversing, Searching, Prepending and Removing Nodes, Stacks: Stack, Operations on Stack Queues: Queue, operations on Queue. Non-Linear Data Structure: Trees and Graphs Case study/Assignment and test			1 hour

  
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 CS-IT Coordinator

  
 Dr. B.R. Deshpande  
 Vice Principal

  
 Dr. (Mrs.) Leena Sarkar  
 Principal

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 A.R. MEHTA COLLEGE OF ARTS  
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 Plot No.9, SEC.- 19, AIROLI,  
 NAVI MUMBAI-400 708





**Duration: 06 Hours**

**Dr.Sunitha Joshi- Cyber Security**

SR. NO.	TOPICS	(6 Lectures)	DURATION
1	Cyber security introduction –Basics		02
2	Security vulnerabilities, threats and Attacks		02
3	Cyber Threats-Cyber-Warfare		01
4	Cyberspace and the Law & Cyber Forensics		01

**Duration: 06 Hours**

**Asst.Prof. Ashish Chavan- Computer Security**

**(6 Lectures)**

SR. NO.	TOPICS	THEORY HOURS
1	Computer Security Overview	02
2	Computer Security Elements	02
3	Computer Security Terminologies	01
4	Computer Security Strategies	01

**Duration: 06 Hours**

**Asst.Prof. Sharayu Kadam- Network Security**

**(06 Lectures)**

SR. NO.	TOPICS	DURATION
1	Computer Security: Introduction, Need for security, Principles of Security, Types of Attacks Cryptography: Plain text and Cipher Text.	02







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## F.Y.B.Sc (C.S) SYLLABUS OF BRIDGE COURSE

Duration: - 30 hours

### Objectives-

1. To understand the need and importance of a database.
2. To introduce various concepts of Object-Oriented Programming and programming to the students.
3. To familiarize the prospective learners with the fundamentals of algorithms.
4. To familiarize students with the basics of Statistics and Calculus.

### Outcome-

Students will be able to

1. Understand the basics of a Database.
2. Understand the concepts of programming before actually starting to write programs.
3. Understand the concepts of the Algorithm.
4. Enable learners to know descriptive statistical concepts






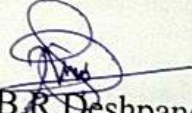
Module	Contents	Number of hours
1	<p><b>Module: Calculus and Statistics</b></p> <p>Calculus:- Derivative: basic formulae and sums; integration: basic formulae, and sums</p> <p>Statistics:- Introduction to Statistics, Hypothesis and its type, population, sample, Types of tests</p>	7 Lectures
2	<p><b>Module: Basics of Algorithm</b></p> <p>Introduction to algorithms - What is an algorithm, analysis of the algorithm, Types of complexity, Running time analysis, How to Compare Algorithms, Rate of Growth, Performance characteristics of algorithms, Estimating running time/number of steps of executions on paper,</p>	7 Lectures
3	<p><b>Module: Basic Programming Concepts for Python and OOPS</b></p> <p>Python : History &amp; Versions, Features of Python, Execution of a Python Program, Python Tokens, Use of input() and print() Function. Data types, Compound Data types ,Flow Control Statements. If,if-else, Nested If, While, For, Range() Function use.</p> <p>OOPS : What is OOPS, Features of OOPS , Advantages and Dis advantages of OOPS, C++ Features , Difference Between CC and Python. Basic C++ Program and Execution.</p>	7 Lectures

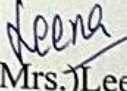




4	<b>Module: Database Management System</b> Introduction of Database, Characteristics of DBMS, Need of Database, Types of Database, advantages of Database Management system, User of Database, Structured Query Language	7 Lectures
	Case Study / Assignment	1 Lecture
	Test	1 Lectures

  
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