

**SHRI S'AD VIDYA MANDAL INSTITUTE OF  
TECHNOLOGY,  
BHARUCH**

**Syllabus for Backlog students  
Academic Year 2018-19**

**Syllabus of Backlog Exam**

**Subject Name : Environmental Studies ( ES )**

**Subject Code : 2110007**

<b>Chapter</b>	<b>Topics</b>
<b>Unit - 1</b>	<b>Environment and Natural systems</b>
<b>1</b>	<b>Introduction to environment and environmental studies</b> Definition and components of environment, relationship between the different components of environments of environment, Man and environment relationship, Impact of technology on environment, Environment degradation, multidisciplinary nature of the environment studies, its scope and importance in the present day education system.
<b>2</b>	<b>Ecology and ecosystem</b> Introduction, Ecology – Objectives and classification, Concept of an ecosystem – structure and functions of ecosystem, components of ecosystem – Producers, Consumers, Decomposers, Bio-geo-chemical cycles- Hydrological cycle, carbon cycle, Energy flow in ecosystem, food chain, food webs, ecological pyramid, Majors ecosystem, forest ecosystem, grassland ecosystem, desert ecosystem, aquatic ecosystem, esuarine ecosystem.
<b>3</b>	<b>Natural Resources</b> <b>a.</b> Renewable and nonrenewable resources, exploitation and conservation, role of individual in conservation of natural resources. <b>b.</b> Water resources <b>c.</b> Land resources <b>d.</b> Forest resources <b>e.</b> Food resources
<b>Unit - 2</b>	<b>Human Population and Environmental Pollution</b>

<b>4</b>	<p><b>Human population and environment</b>  Population growth, world and Indian scenario, Population and environmental degradation, Malthusian theory, Optimum theory, Population explosion- Causes, Effects and control.  <b>Urbanization</b> : Urban population growth and environmental problems</p>
	<p><b><u>List of Reference books</u></b></p> <ol style="list-style-type: none"> <li>1 Environmental studies by R. Rajagopalan, Oxford university press.</li> <li>2. Environmental studies by Benny joseph.</li> <li>3. Environmental studies by Dr. Suresh K. Dhameja.</li> <li>4. Basic of Environmental Studies by J. P. Sharma</li> <li>5 Basic of Environmental Studies by Dr. Rahul Kansal &amp; Mrs (Dr.) Shikha Kansal</li> </ol>

### Department of Engineerig Mathematics

Syllabus:Backlog Examination (Even sem 2018-19)

BE – I (2<sup>nd</sup>sem) (All Branches)

**Name of Faculty** : Dr. Rajesh Jadav, Nensi Gandhi,Gayatri Prajapati

**Subject Code** : 2110015

**Subject Name** :Vector Calculus and Linear Algebra

Sr. No.	Unit	Topic
1	UNIT 1	<b>Systems of Linear Equations and Matrices:</b> Systems of Linear Equations ,Matrices and Elementary Row perations,The Inverse of a Square Matrix ,Matrix Equations, Applications of Systems of Linear Equations
2	UNIT 2	<b>Determinates</b>
3	UNIT 3	<b>Eigenvalues and Eigenvectors:</b> Eigen values and Eigen vectors ,Diagonalization

**Reference Books:**

1. Introduction to Linear Algebra with Application, Jim Defranza, Daniel Gagliardi, Tata

McGraw-Hill

2. Elementary Linear Algebra, Applications version, Anton and Rorres, Wiley India Edition.
3. Advanced Engineering Mathematics, Erwin Kreysig, Wiley Publication.
4. Elementary Linear Algebra, Ron Larson, Cengage Learning
5. Calculus, Volumes 2, T. M. Apostol, Wiley Eastern.
6. Linear Algebra and its Applications, David C. Lay, Pearson Education

SVM Institute of Technology, Bharuch

Department of Engineerig Mathematics

Syllabus:Backlog Examination (Even sem 2018-19)

BE – I (1<sup>st</sup> sem) (All Branches)

**Name of Faculty :** Dr. Rajesh Jadav, Nensi Gandhi, Gayatri Prajapati

**Subject Code :** 2110014

**Subject Name :** Calculus

<b>Sr. No.</b>	<b>Unit</b>	<b>Topic</b>
1	Unit 1	<b>Partial Derivatives:</b> Function of 2-variables, graphs, level curves ,Limit, continuity of function of several variables ,Partial derivatives and Clairauts' theorem ,Tangent plane, Normal line ,Linear approximation, Total differential ,Chain rule, implicit differentiation ,Euler's theorem for homogeneous function ,Maximum and minimum values by second derivative test ,Lagrange multipliers ,Taylor's formula for two variables

**Reference Books:**

1. Calculus with Early Transcendental Functions, James Stewart, Cengage Learning

2. Thomas' Calculus, Maurice D. Weir, Joel Hass, Frank R. Giordano, Pearson

Education

3. Calculus – Single and Multivariable, Hughes – Hallett et al., John-Wiley and Sons.

4. Calculus, Robert T. Smith & Ronald B. Minton, McGraw-Hill

5. Calculus, Volumes 1 and 2, T. M. Apostol, Wiley Eastern.

## **BE 1<sup>st</sup> Year (Semester I)**

**Academic Year 2018-19**

### **Syllabus**

**Subject: Computer Programming and Utilization**

**Subject Code: 2110003**

**Date:**

**17/07/2018**

<b>Unit 1</b>	<b>Introduction to computer and programming:</b> Introduction ,Basic block diagram and functions of various Components of computer, Concepts of Hardware and software, Types of software, Compiler and interpreter, Concepts of Machine level, Assembly level and high level programming, Flow charts and Algorithms.
<b>Unit2</b>	<b>Fundamentals of 'C'</b> Features of C language, structure of C Program, comments, header files, data types, constants and variables, operators, expressions, evaluation of expressions, type conversion, precedence and associativity, I/O functions.
<b>Unit 3</b>	<b>Control structure in 'C'</b> Simple statements, Decision making statements, Nesting of control structures, switch statement, break and continue , goto statement, Looping Statements(continue, goto, break).

**Reference Book: Programming in ANSI C by Balaguruswamy.**

**Prof. Vishal M. Patel**

**CPU Subject Coordinator**

Department of Electrical Engineering

Syllabus: Mid Semester examination (Odd Sem 2018-19)

BE – I (1<sup>st</sup> Sem)

**Name of Faculty:** N. Kalpana Kumari

**Subject Code:** 2110005

**Subject Name:** Elements of Electrical Engineering

Sr. No.	Topics
1	<b>Elementary Concepts:</b> Introduction of Electrical Current, Voltage, Power and Energy; Sources of Electrical Energy – Independent and Dependent Source, Source conversion; Ideal electrical circuit elements - Resistor, Inductor and Capacitor; Fundamental laws of electric circuits - Ohm's Law and Kirchhoff's Laws; Analysis of series, parallel and series-parallel circuits; Star – Delta conversion; Node and Mesh analysis.
2	<b>Single Phase A.C. Circuits:</b> Generation of sinusoidal voltage, Definition of average value, root mean square value, form factor and peak factor; Phasor representation of alternating quantities; Analysis with phasor diagrams of R, L, C, R-L, R-C and R-L-C circuits; Concepts of Real power, Reactive power, Apparent power and Power factor, Series, Parallel and Series - Parallel circuits; Power in AC circuit, Power factor improvement; Resonance in series and parallel

	circuits, Q-factor, Bandwidth and Selectivity.
3	<b>Electrostatics:</b> Electric charge and Laws of electrostatics; Definitions - Electric field, lines of force, electric field intensity, electric flux and flux density; Electrostatic induction; Gauss's law and its application; Dielectric strength; Capacitor; Capacitor in series and parallel, Energy stored in a capacitor.

Text Book:

1. B.L. Theraja (2012), Electrical Technology, Vol – 1, S. Chand.
2. D.P. Kothari and I.J. Nagrath (2013), Theory and Problems in Basic Electrical Engineering, Prentice Hall, India.

## Department of EC

### Syllabus: Backlog examination (2018-19)

### BE – I (2<sup>nd</sup> SEM) (CO, IT, EL)

**Name of Faculty:** Prof.N.N.Parmar

**Subject Code:** 2110016

**Subject Name:** Basic Electronics

Sr. No.	Unit	Topics
1	Unit 1	Circuit Concepts : Electrical Quantities ,Lumped Circuit Elements , Kirchhoff's Laws, Meters and Measurements
2	Unit 2	Circuit Analysis Techniques: <ul style="list-style-type: none"> <li>• Thevenin and Norton Equivalent Circuits</li> <li>• Node-Voltage and Mesh-Current Analysis</li> <li>• Superposition and Linearity</li> </ul>

		• Wye-Delta Transformation
3	Unit 3	Digital Building Blocks : Digital System Building Blocks, Digital System Components.

**Text Book:**

1. Introduction to Electrical Engineering, M S Sarma, Oxford University Press

## Department of Physics

Syllabus: Backlog examination (2018-19)

BE – I (1&2<sup>nd</sup> SEM) (civil, Mech, CO, IT, EL)

**Name of Faculty:** Dr. Nirali gondaliya

**Subject Code:** 2110011

**Subject Name:** Physics

Sr.No	Unit	Topics
<b>1</b>	<b>Unit 2</b>	<b>1.MAGNETIC MATERIALS:</b> Definitions : Magnetic moment, Magnetic dipole, Magnetic Filed strength, Magnetic flux density, Intensity of magnetization, Magnetic dipole moment, Magnetic Field intensity, Magnetic permeability, magnetic susceptibility, Bohr magnetron, Classification of Magnetic Materials on the basis of magnetic moment , Soft and Hard Magnetic Materials , Anti-ferromagnetic materials , Ferrites
<b>2</b>	<b>Unit 6</b>	<b>2.NANOPHYSICS:</b> Nanoscale, Surface to volume ratio, Surface effects on Nanomaterials , Quantum size effects , Electron confinement , Nanomaterials and Nanotechnology, Unusal properties of Nanomaterials, Disadvantages of Nanomaterials, Synthesis of Nanomaterials, Carbon Nanotubes: Introduction, Structure, Synthesis, Properties and applications, Applications of Nanomaterials

**Reference Books:**

1. Engineering Physics by V Rajendran, Tata McGraw Hill Education
2. Engineering Physics John Wiley Publication
3. Engineering Physics by Naidu, Pearson Education India
4. Non-Conventional Energy Resources”, Mechanical Engineering Series, Khan B. H., Tata McGraw Hill Publishing Company Ltd., New Delhi, 2006
5. Engineering Physics by H Aruldhas, PHI India

6. Engineering Physics by B K Pandey , S. Chaturvedi, Cengage Learning
7. Resnick, Halliday and Krane, Physics part I and II, 5th Edition John Wiely (2002)
8. Physics for scientists and engineers with modern physics by Jewett & Serwey, Cengage publications

## Department of English

Syllabus: Backlog examination (2018-19)

BE – I (1 SEM) (All branch)

**Name of Faculty:** Prof. Shirin Mahudawala

**Subject Code:** 2110002

**Subject Name:** CS

Sr.No	Unit	Topics
1	Unit	<p><b>Who is a Contributor</b> Student develops an appreciation of who the Contributors are and how they fundamentally differ from Noncontributors in their overall approach to work, to other human beings, to society as a whole.</p> <p><b>The Contributor's identity</b> Student develops his/ her own answer to the question "who am I?" The student</p> <p><b>The Contributor's vision of success</b> The student explores the meaning of success in his life. Through this exploration, the student is expected to recognize that Contributors have a wider definition of success than Noncontributors. While Non-contributors define success in terms of material success, achievement, external impact, vetc., Contributors are able to widen this definition of success to include personal fulfillment, development of self-esteem, ongoing development of personal capabilities etc.</p> <p><b>The Contributor's vision of career</b> The student learns to distinguish between an "acquisitive career" and a "contributive career". An acquisitive career is one in which the careerseeker is focused on acquiring higher position, higher salary, more benefits etc. This preoccupation with selfish interests often damages the individual's career, as well as, damages the organization and society. A contributive career is one where the career-seeker is focused on contributing, with rewards being a byproduct of the contributions made.</p> <p><b>The scope of contribution</b> The student learns to perceive that in all type of work, every type of role, there is a possibility of contributing at multiple levels – contributing to self, contributing to organization, and contributing to society. The student also appreciates the difference between "acquisition for</p>



	<p>self” and “contribution to self” – the former being material acquisition and the latter being conscious development of oneself through the medium of one’s career.</p> <p><b>Embarking on the journey to contributor ship</b></p> <p>The student recognizes the fundamental “building blocks” for becoming a Contributor – the first building block being a shift from a “victim” to being a “creator of one’s destiny”; the second building block being acceptance of the ideal of contributor ship; the third building block being the willingness to take full responsibility for one’s own development; the fourth building block being the capacity to reflect on one’s development and make appropriate modifications.</p> <p><b>Design Solutions</b></p> <p>When faced with a challenge, the Contributor’s first response is: “Can we find a solution?” This is unlike a Non-contributor who may respond to the challenge by trying a little and giving up, blaming others, or finding excuses to cover up the issue. Whereas, the Contributor finds a solution. In other words, the Contributor develops the capacity to find solutions through continuous practice and learning from other Contributors. In this topic, students learn the importance of willingness and ability to find solutions</p> <p><b>Focus on value</b></p> <p>What does creating value mean? It means making a positive difference, a tangible impact, a specific contribution to any situation. This positive difference or impact can be in the form of achieving a specific goal, creating a product, creating „human touch” in a particular interaction, or enhancing one’s own capacity, or the capacity of one’s colleagues and team- mates. Contributors are therefore extremely result-focused, but the result is measured in terms of value created. In this topic, students learn to clarify the meaning of the word “value” and how value is created in various situations.</p> <p><b>Engage deeply</b></p> <p>Contributors are instantly distinguished by the way they approach work. They get involved. They are enthusiastic. They go deep into the subject. In short, Contributors love what they do. This is in direct contrast to Non- contributors who want to do only what they love - an approach that seems reasonable until you realize that life and workplaces have so much variety that you may very often be called upon to do tasks that seem unpleasant or boring until you get involved. In this topic, students learn the importance of engaging deeply with whatever work they do – at work, in study, in personal life.</p>
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**Reference Books:**

1. On Contributors, Srinivas V.; Illumine Ideas, 2011

2. Enlightened Citizenship and Democracy; Swami Ranganathananda, Bharatiya Vidya Bhavan, 1989

3. Personality Development, Swami Vivekananda; Advaita Ashrama

1 To have or to be, Erich Fromm; Continuum International Publishing Group, 2005

2. The art of being, Erich Fromm; Continuum International Publishing Group, 1992

3. Raja Yoga, Swami Vivekananda; Advaita Ashrama

1.Eternal Values for a Changing Society – Vol IV (Ch 25, 35), Swami Ranganathananda; Bharatiya Vidya Bhavan, 1993

2. Karma Yoga, Swami Vivekananda; Advaita Ashrama Six Pillars of Self Esteem , Nathaniel Branden; Bantam, 1995

2. Mindset: The New Psychology of Success, Carol S. Dweck; Random House Publishing Group, 2007 Awakening India, Swami Vivekananda; Ramakrishna Mission, New Delhi, 2011

2. Eternal Values for a Changing Society – Vol IV Vivekananda: His Call to the Nation, Swami Vivekananda; Advaita Ashrama

2. Eternal Values for a Changing Society – Vol IV (Ch 33), Vol III (Ch 19, 21, 30) Swami Ranganathananda; Bharatiya Vidya Bhavan, 1993

3. Lectures from Colombo to Almora, Swami Vivekananda; Advaita Ashrama Why not?: how to use everyday ingenuity to solve problems big and small, Barry Nalebuff, Ian Ayres; Harvard Business School Press, 2003

2. How to Have a Beautiful Mind, Edward De Bono; Vermilion, 2004 The value mindset: returning to the first principles of capitalist enterprise (Ch 8 & 9); Erik Stern, Mike Hutchinson; John Wiley and Sons, 2004

2. Managing for Results, Peter F. Drucker; HarperCollins, 2009 The Power of Full Engagement: Managing Energy, Not Time, is the Key to High Performance and Personal Renewal, Jim Loehr, Tony Schwartz; Simon and Schuster, 2003

<b>Sr.No</b>	<b>Unit</b>	<b>Topics</b>
<b>1</b>		Basics of Communication Definition and Process of Communication Kinesics Paralinguistics Proxemics Chronemics Presentation Strategies

		Defining the Purpose of Presentation How to Make an Effective Presentation: i) Analyzing audience and locale ii) Organizing content and preparing an outline Listening Ability Hearing and Listening Types of Listening Barriers to Effective Listening Traits of a Good Listener Reading Fluency Introduction Reading Strategies Techniques of reading Developing Reading Comprehension
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**Reference Books:**

1. Vibrant English Hyderabad: Orient BlackSwan, 2013
2. Lesikar R V, Flatley M E, Rentz K and Pandey Business Communication: Making Connections in a Digital World 2009: New Delhi, Tata Mcgrow Hill
3. Kumar S and Lata P Communication Skills 2011: New Delhi Oxford University Press
4. Leech, Geoffrey and Jan Svartvik. A Communicative Grammar of English. New Delhi: Pearson, 2009.