Vidya Pratishthan's
Kamalnayan Bajaj
Institute of
Engineering and Technology,
Baramati.

Faculty of Science and Technology

Board of Studies
Electrical Engineering

Syllabus
Open Electives

(Pattern: 2023)
(w.e.f. AY: 2024-25)

Syllabus: Open Elective courses
Pattern (2023) w.e.f. AY:2024-2025

Course Code	NEP Category	Courses Name	Teaching Scheme			Examination Scheme and Marks							Credits			
			TH	PR	TUT	Activity	ISE	ESE	TW	PR	OR	Total	TH	PR	TUT	Total
OE2303	OE	Organizational Behavior	2	-	-			50				50	2	-	-	2
OE23011	OE	Biotechnology	2	-	-			50				50	2	-	-	2

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Department of Electrical Engineering

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VPKBIET BARAMATI
Affiliated to
S.P.P.U. Pune
PUNE (MS.)

OE2303 : Organizational Behavior		
Teaching Scheme:	**Credits:02**	**Examination Scheme:**
TH: 02 Hrs/Week		**End-Semester Exam: 50 Marks**

Prerequisites: Organizational Behavior is understanding of human behavior, cognitive processes and social psychology from a foundational organizational course.

Objectives:

1. To describe the major theories, concepts, models and frameworks in the field of Organizational Behavior.
2. To explain determinants of organizational Behavior at Individual, Group and organizational Level.
3. To give knowledge about approaches to line-up individual, groups & managerial behavior in order to achieve organizational goals.

Course Outcomes:

The students will be able to learn:

CO1: Examine organizational behavior and its impact on organizational effectiveness.

CO2: To learn the importance of group dynamics and team building in achieving organizational goals.

CO3: Understand the inputs required for personality and attitudinal development, and their impact on behavior in organizational settings.

CO4: To acquire the knowledge about basic elements of organizational behavior and their interrelationships.

Course Contents

Unit-1: Fundamentals of OB	**(07 Hrs.)**
Meaning, Definition, Nature, Scope, Importance, Key Elements of OB, Disciplines that contribute to the OB field, Models of OB, Challenges for OB	
Unit-2: Individual Determinants of organizational Behavior	**(07 Hrs.)**
Individual Behavior- Influencing factors- Personal, Psychological, organizational System & Resources & Environmental Factors. **Personality**- Meaning, Definition, Key Determinants of Personality, Types of Personality, Theories of Personality. **Value & Attitude** - Meaning, Definition and Types. Developing emotional intelligence at work space, barriers to changing attitudes.	

Unit-3: Interpersonal Processes and behavior, team and leadership development.	(07 Hrs.)

Foundations of Group Behavior: The Meaning of Group & Group Behavior & Group Dynamics, Types of Groups, The Five-Stage Model of Group Development.

Managing Teams: Why Work Teams. Work Teams in Organization, Developing Work Teams, Team Effectiveness & Team Building.

Leadership: Concept of Leadership, Styles of Leadership, Concept of Transformational Leadership, Contemporary Issues in Leadership, Contemporary Theories of Leadership. Success Stories of Today's Global and Indian Leaders.

Unit-4: Organizational system and managing change	(07 Hrs.)

Organizational Culture- Meaning, Definition, Levels, Formation & Sustaining Organizational Culture Organizational Change- Meaning, Definition, Types, Forces for Change in Organization, Resistance to Change, Management of change.

Text Books

1. Organizational behavior: Text, Cases, Games K. Aswathappa Himalaya Publishing House
2. Organizational behavior Stephen P. Robbins Timothy A. Judge Neharika Vohra Pearson Education, Inc
3. Organizational Behavior S. S. Khanna S. Chand & Company Ltd.
4. Organizational Behavior: Text & Cases Suja R, Nair Himalaya Publishing House
5. Organizational Behavior Jit S. Chandan Vikas Publishing House Pvt. Ltd

Reference Books:

1. Organizational Behavior by Uma Sekaran
2. Organizational Behavior by Fred Luthans - McGraw Hill
3. Human Relations & Organizational Behavior by R. S. Dwivedi - Oxford McGraw Hill
4. Organizational Behavior by McShane

OE2311: Biotechnology		
Teaching Scheme:	**Credits:02**	**Examination Scheme:**
TH: 02 Hrs/Week		**End-Semester Exam: 50 Marks**

Prerequisites: 10th Science

Objectives:

1. To cater to basic understanding of Biotechnology Principles.
2. To foster an understanding of the interdisciplinary nature of biotechnology, integrating concepts from biology, and engineering.
3. To encourage students to engage in research activities, promoting innovation and the application of biotechnology using engineering concepts.

Course Outcomes:

The students will be able to learn:

CO 1: Basics, scope and interdisciplinary nature of Biotechnology.

CO 2: General concept of Cell and Molecular Biology.

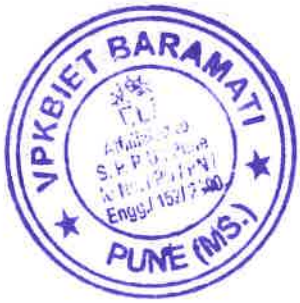
CO 3: DNA structure and composition and its isolation.

CO 4: Basic concept of R-DNA technology.

CO 5: How Biology can be engineered using different techniques.

Course Contents

Unit I: Fundamentals of Biotechnology	**(07 Hrs.)**
Definition, scope and importance of biotechnology, Historical development and major milestones in biotechnology: Past and Present Interdisciplinary nature of biotechnology (biology, chemistry, engineering, etc.) and Importance & Significance of Biotechnology	
Unit II: Cell and Molecular Biology	**(07 Hrs.)**



Prokaryotic and eukaryotic cell structure and organelles (Nucleus, mitochondria, Golgi apparatus, Endoplasmic reticulum),

Nucleic acids- structure, properties and function, Nucleoside and nucleotide, Types of DNA and RNA, Replication of DNA, Central dogma: (Transcription, Translation),

Isolation of Prokaryotic and Eukaryotic DNA, Gel Electrophoresis

PCR: Introduction, Steps involved in PCR, Applications

Unit III: Recombinant DNA Technology	**(08 Hrs.)**

Molecular tools used in Recombinant DNA Technology: DNA modifying enzymes – Restriction enzymes, Ligases, Polymerases, Alkaline Phosphatases, Nucleases (Mode of Actions & applications),

Vectors used in Recombinant DNA Technology: Properties of cloning vectors, Cloning vectors (plasmids, bacteriophages, cosmids, YACs),

Construction of Genomic and cDNA Library: Genomic and cDNA library, Applications of libraries.

Unit IV: Applications of Biotechnology	**(08 Hrs.)**

Agriculture (PTC, GM crops, biopesticides, biofertilizers), Medicine (recombinant drugs, monoclonal antibodies, gene therapy), Environment (bioremediation, biomass conversion, biofuels); Nanobiotechnology (definition, Applications of nano-materials in drug delivery, importance of nanomedicine, Biochips)

Reference:

1. Biotechnology by U Satyanarayan
2. Molecular Cell Biology. 7th Edition, (2012) Lodish H., Berk A, Kaiser C., KReiger M., Bretscher A., Ploegh H., Angelika Amon A., Matthew P. Scott M.P., W.H. Freeman and Co., USA
3. The Cell: A Molecular Approach, 6th edition (2013), Geoffrey M. Cooper, Robert E. Hausman, Sinauer Associates, Inc. USA
4. Gene Cloning and DNA Analysis –An Introduction. T.A. Brown. Eighth Edition (2020). Wiley Blackwell.