

SKILL ENHANCEMENT COURSE(SEC)

SEMESTER-II



(Effective from Session 2025-26)

(Batch: 2025-2028)



SAMBALPUR UNIVERSITY

JYOTI-VIHAR, BURLA, SAMBALPUR, ODISHA-768019

SKILL ENHANCEMENT COURSE(SEC)

SEMESTER-II

PERSONALITY DEVELOPMENT

Credits: 3 Lecture: 45 Hour

Full mark: 100

Subject Teacher: The classes will be assigned to the teacher/faculty competent to teach the course by the Principal.

Description of the Course:

This course aims at enhancing personal and professional skills, focusing on areas like communication, self-awareness, leadership, and interpersonal skills, ultimately fostering self-confidence and positive self-image after overcoming shortcomings and limitations contributing to the overall well-being and success.

Course Objectives:

1. To familiarize students with the concept of personality development and its significance in personal and professional life.
2. To enable students to identify and maximize their potentials for a holistic development.
3. To enable the students to apply the personality development insights for professional and personal growth.

Course Outcomes:

On completion of the course, the student will be able to

CO 1 : Manage interpersonal relationships to promote personal and professional growth.

CO 2: develop and improve communication skills.

CO 3: build a wholesome personality to achieve all round development.

Syllabus:

Unit I: Introduction to Personality Development

- A. Personality - Meaning, definition, significance and traits of personality; Impact of heredity and environment, Impact of Literature on building Personality
- B. Development of Personality — Self-awareness, SWOT analysis, Interpersonal relationships (Freedom, Responsibility and Commitment), Social skills, Etiquettes and manners, effective use of social media and e-gadgets, mental health (overall wellbeing)

Unit II: Personality Development and Professional Growth

- A. Attitude — Concept, Significance, factors affecting attitudes, positive and negative attitude

- B. Leadership and motivation - Concept, Significance, Internal and external motives, the importance of self-motivation, team management, goal setting (SMART Goals)

Unit III: Skills of Personality Development

A. I. Soft Skills — Introduction, Meaning, Time management, stress management, critical thinking, decision making and problem solving, ethical behavior.

II. Communication Skills Introduction, Meaning, Purpose of communication, Process of communication, Key elements of communication, Characteristics of effective communication, Verbal communication and Non-verbal communication, body language, Barriers to communication, overcoming barriers, Communication with Family, Friends and colleagues (Improving one's sense of humor, loving, supporting and caring for others, accepting and tolerating differences)

B. Practical Skills for Personality Development

Listening and Speaking (Phonetics)

Application for jobs, E-mail, Resume (CV) writing

Note making

Seminar Presentation

Group Discussion

Knowledge of Basic grammar

SUGGESTED READINGS

1. You Can Win - Shiv Khera
2. Understanding Psychology: By Robert S Feldman. (Tata McGraw Hill Publishing)
3. Personality Development and Career management: By R.M.Onkar (S Chand Publications)
4. Social Psychology: By Robert S Feldman, (Tata McGraw Hill Publishing)
5. Essentials of Business Communication - Rajendra Pal and J. S. Korlhalli - Sultan Chand and Sons, New Delhi.
6. Business Communication (Principles, Methods and Techniques) Nirmal Singh - Deep and Deep Publications Pvt. Ltd., New Delhi
7. Effective Business Communication — H.Murphy.
8. The Monk Who sold his Ferrari - Robin Sharma
9. [bups://mindfulrootscounseling.com/impact-of-books-for-personal-growth/](https://mindfulrootscounseling.com/impact-of-books-for-personal-growth/)

ELECTION STUDIES AND PUBLIC OPINION

Credits: 3

Lecture: 45 Hour

Full mark: 100

Subject Teacher: The classes will be assigned to the teacher/faculty competent to teach the course by the Principal.

Course Objectives:

- To identify the scope of Election Studies as a sub-discipline of Political Science.
- To understand the concept of public opinion and the channels through which they are formulated.

Course Outcomes:

- To Identify the importance of election studies.
- To Evaluate the forums through which public opinion is formulated.

UNIT I: Meaning, significance and Characteristics of Public Opinion: Role in Democracy

Conditions necessary for formation of public opinion. Agencies of Public Opinion: Political Parties, Associations, Media, Public Platforms and Civil Society.

UNIT II: Meaning of Electoral Studies, Representation of People's Act 1951, constituency and the dynamics of political parties in electoral politics.

UNIT III: Composition and Powers of Election Commission in India, State Election Commission, Media and election Model Code of Conduct.

UNIT IV: Opinion Polls- exit polls. their impact on electoral result and analysis of electoral data and understand the electoral behavior.

BOOKS RECOMMENDED:

1. I. G. Gallup. (1948) A guide to public opinion polls Princeton, Princeton University Press, 1948.
2. G. Kalton. (1983) Introduction to Survey Sampling Beverly Hills- Sage Publication.
3. Lokniti Team. (2004) 'National Election Study 2004'. Economic and Political Weekly, Vol. XXXIX (51).
4. 'Asking About Numbers: Why and How'. Political Analysis (2013)
5. S. Kumar and P. Rai, (2013) 'Chapter I's in Measuring Voting Behaviour in India, New Delhi: Sage.
6. Rowntree (2000) Statistics Without Tears: an Introduction for Non Mathematicians, Harmondsworth : Penguin.

QUANTITATIVE AND LOGICAL THINKING

Credits: 3

Lecture: 45 Hour

Full mark: 100

Subject Teacher: The classes will be assigned to the teacher/faculty competent to teach the course by the Principal.

Course Objectives

1. To select and apply appropriate methods to solve real world problems;
2. To interpret quantitative model and understand a variety of methods of communicating them;
3. To improve decision making skills, problem solving skills and setting goals.

Course Outcomes

After completion of the course, learners will be able to

CO1: To apply appropriate methods to solve real world problems,

CO2: To understand various methods to solve the difficulties and communicating thereafter, **CO3:** To draw conclusion and / or make decisions based on analysis and critique of quantitative information using proportional reasoning.

Unit -I:

Whole numbers, Integers, Rational and irrational numbers, Fractions, Square roots and Cube roots, Surds and Indices, Problems on Numbers, Divisibility; Steps of Long Division Method for Finding Square Roots.

Unit -II:

Basic concepts, Different formulae of Percentage, Profit and Loss, Discount, Simple interest, Ratio and Proportion, Mixture, Time and Work, Pipes and Cisterns, Basic concepts of Time, Distance and Speed; relationship among them

Unit -III:

Concept of Angles, Different Polygons like triangles, rectangle, square, right-angled triangle, Pythagorean Theorem, Perimeter and Area of Triangles, Rectangles, Circles.

Unit-IV:

Analogy basing on kinds of relationships, Simple Analogy; Pattern and Series of Numbers, Letters, Figures. Coding-Decoding of Numbers, Letters, Symbols (Figures), Blood Relations. Logical Statements – Two premise argument, more than two premise argument using connectives; Venn Diagrams, Mirror Images, Problems on Cubes and Dices.

Suggested Readings

- *Skill Enhancement Compulsory Course-II – Quantitative and Logical Thinking (Special Course) – Odisha*
- *State Higher Education Council, Bhubaneswar (The recommended Books are to be decided by the Board of Studies)*

ANALYTICAL THINKING AND LOGICAL REASONING

Credits: 3

Lecture: 45 Hour

Full mark: 100

Subject Teacher: The classes will be assigned to the teacher/faculty competent to teach the course by the Principal.

I. QUANTITATIVE APTITUDE & DATA INTERPRETATION

- a) Whole numbers, Integers, Rational and irrational numbers, Fractions, Square roots and
Cube roots, Surds and Indices, Problems on Numbers, Divisibility Steps
of Long Division Method for Finding Square Roots:
- b) Basic concepts, Different formulae of Percentage, Profit and Loss, Discount,
Simple interest, Ratio and Proportion, Mixture
- c) Time and Work, Pipes and Cisterns, Basic concepts of Time, Distance and Speed;
relationship among them
- d) Concept of Angles, Different Polygons like triangles, rectangle, square, right
angled triangle, Pythagorean Theorem, Perimeter and Area of Triangles,
Rectangles, Circles e) Raw and Grouped Data, Bar Graphs, Pie charts, Mean,
Median and Mode, Events and
Sample Space, Probability

II. LOGICAL REASONING

- a) Analogy basing on kinds of relationships, Simple Analogy; Pattern and Series of
Numbers, Letters, Figures. Coding-Decoding of Numbers, Letters, Symbols
(Figures), Blood relations
- b) Logical Statements — Two premise argument, More than two premise
argument using connectives
- c) Venn Diagrams, Mirror Images, Problems on Cubes and Dices act-í_)

RENEWABLE ENERGY AND ENERGY HARVESTING

Credits: 3

Lecture: 45 Hour

Full mark: 100

Subject Teacher: The classes will be assigned to the teacher/faculty competent to teach the course by the Principal.

Course Outcome

CO- I: Basic understanding of alternative sources of energy.

CO-2: Conceptual understanding and importance of solar cell, characterization

CO-3: Understanding the energy harvesting and its applications using wind and piezoelectric material
CO-4: Understanding the electromagnetic energy harvesting and its applications

UNIT-I

Fossil fuels and Alternate Sources of energy: Fossil fuels and Nuclear Energy, their limitation, need of renewable energy, non-conventional energy sources. An overview of developments in Offshore Wind Energy, Tidal Energy, Wave energy systems, Ocean Thermal Energy Conversion, solar energy, biomass, biochemical conversion, biogas generation, geothermal energy tidal energy, Hydroelectricity.

UNIT-II

Solar energy: Solar energy, its importance, storage of solar energy, solar pond, non-convective solar pond, applications of solar pond and solar energy, solar water heater, flat plate collector, solar distillation, solar cooker, solar green houses, solar cell, absorption air conditioning. Need and characteristics of photovoltaic (P V) systems, PV models and equivalent circuits, and sun tracking systems.

UNIT-III

Wind Energy harvesting: Fundamentals of Wind energy, Wind Turbines and different electrical machines in wind turbines, Power electronic interfaces, and grid interconnection topologies.

Piezoelectric Energy harvesting: Introduction, Physics and characteristics of piezoelectric effect, materials and mathematical description of piezoelectricity, Piezoelectric parameters and modeling, piezoelectric generators, Piezoelectric energy harvesting applications, Human power.

UNIT-IV

Electromagnetic Energy Harvesting: Linear generators, physics mathematical models, recent applications 42 Carbon captured technologies, cell, batteries, power consumption Environmental issues and Renewable sources of energy, sustainability.

Reference Books:

1. Non-conventional energy sources - G.D Rai - Khanna Publishers, New Delhi
2. Solar energy - M P Agarwal - S Chand and Co. Ltd.
3. Solar energy - Suhas P Sukhative Tata McGraw - Hill Publishing Company Ltd.
4. Godfrey Boyle. "Renewable Energy, Power for a sustainable future", 2004, Oxford University Press, in association with The Open University.
5. Dr. P Jaya kumar, Solar Energy: Resource Assessment Handbook, 2009
6. J. Balfour, M. Shaw and S. Jarosek. Photovoltaics, Lawrence J Goodrich (USA).
7. http://en.wikipedia.org/wiki/Renewable_energy

VERMICOMPOSTING

Credits: 3

Lecture: 45 Hour

Full mark: 100

Subject Teacher: The classes will be assigned to the teacher/faculty competent to teach the course by the Principal.

Unit 1: Introduction to Vermicomposting

History of vermicomposting in India. Definition, Habitat of vermicomposting earthworms, Scientific names and distinctiveness of native and exotic vermicomposting earthworms (Native Indian earthworms: *Perionyx excavatus*, *Perionyx ceylanesis*, European earthworms: *Eisenia fetida*, *Eisenia andrei*, South African earthworm: *Eudriluseugeniae*). Selection criteria for composting worms, rearing methods of composting worms and parameters like temperature, moisture, pH etc, Cocoons and their maintenance.

Unit-2: Principle & Process of vermicomposting:

Components and steps of the vermicomposting Process: Principle of vermicomposting: Aerobic decomposition and role of detritivore fauna and symbiotic microflora and endo-enzymes of earthworm gut with special reference to thermophilic, psychrophilic and mesophilic phases. Methods of vermicomposting: (a) Low-cost floor beds/ Heap method (b) Tank Method for large scale production. Appropriate species of earthworms with suitable population characteristics, Substrate of vermicomposting: Ideal substrates and its characters for vermi-composting, Pre-composting of substrates and its importance, Preparation of vermibeads / vermi reactors with appropriate substrates under Indian condition. Tools and equipments used in vermicomposting.

Unit-3: Management and harvesting of vermicompost

Optimization of vermicomposting process through management of different environmental factors like- Temperature, pH and Moisture content, periodic aeration through turning the substrate etc. Care and Precautions during vermicomposting process and common enemies of earthworms and their management. Identification of compost maturity: Time, Mass reduction, odour, C:N Ratio, Oxidation-reduction potential, BOD etc. Methods of harvesting mature compost and storage with special reference to the shelf life.

Unit-4: Products of vermicomposting and its uses

Physical, chemical and biological properties of vermicompost. Benefits of using vermicompost for production of different cash crops over conventional chemical fertilizers. Limitations of use of vermicompost in organic agriculture. Products of vermicomposting: Earthworm biomass (vermiprotein), Vermiwash and their application in different agricultural sectors for promoting organic agriculture and aquaculture. SEC 101: Biofertilizers