



**FAKIR MOHAN UNIVERSITY
VYASA VIHAR, BALASORE**

**SYLLABUS FOR UNDERGRADUATE
ABILITY & SKILL ENHANCEMENT COURSES
(AECC & SEC)**

**UNDER CHOICE BASED CREDIT SYSTEM
(Effective from the Academic Session 2019-20)**

AECC - 1 (MIL-ALTERNATIVE ENGLISH)

MID SEM: 20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

Introduction:

The paper is focused upon developing one fundamental skills of Language learning; reading which needs a thorough rethink and revision. In order to build a strong base for acquisition of the communication skills, suitable reading content is selected from diverse areas in prose form. This would boost the learner's competence in expressive and comprehension skills. The well researched language exercises in the form of usage, vocabulary and grammar is the other area that should attract the teacher and learner to work out for giving decent shape to the mastery of English language.

UNIT 1: Short Story

- (i) Jim Corbett-The Fight between Leopards
- (ii) Dash Benhur- The Bicycle
- (iii) Dinanath Pathy- George V High School
- (iv) Alexander Baron- The Man who knew too much
- (v) Will f Jenkins- Uneasy Homecoming

UNIT 2: Prose

- (i) Mahatma Gandhi- The way to Equal Distribution
- (ii) S Radhakrishnan- A Call to Youth
- (iii) C V Raman-Water- The Elixir of Life
- (iv) Harold Nicolson- An Educated Person
- (v) Claire Needell Hollander- No Learning without Feeling

UNIT 3: Comprehension

- (i) Comprehension of a passage and answering the questions

UNIT 4: Vocabulary and Grammar

- (i) Language exercises-test of vocabulary, usage and grammar

Text Books

All Stories and Prose pieces

Reference Books

- *The Widening Arc: A Selection of Prose and Stories*, Ed. A R Parhi, S Deepika, P Jani, Kitab Bhavan, Bh ubaneswar.
- *A Communicative Grammar of English*, Geoffrey Leech.
- *A University Grammar of English*, Randolph Quirk and Sidney Greenbaum
- *Developing Reading Skills*. F. Grellet. Cambridge: Cambridge University Press, 1981.

Scheme of examination

Midterm: 20 marks (to be conducted by the respective college)

Final examination: 80 marks

(A) 5 short questions of 4 marks each to be set from unit 1-2 covering all prescribed stories and prose pieces [10x4=40]

(B) An unknown passage to be set with 5 questions carrying 4 marks each [5x4=20]

(C) 10 bit questions carrying 2 marks each from grammar/vocabulary and usage [10x2=20]

AECC - 1 (MIL COMMUNICATION - ODIA)

MID SEM: 20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

ପାଠ୍ୟକ୍ରମର ଭୂମିକା:

ଏହି ପାଠ୍ୟଖଣ୍ଡଟି ପଢ଼ନ ଓ ଆତ୍ମାଭିଜ୍ଞ (CBCS / ସିବିସିଏସ୍) ପାଠ୍ୟ ପ୍ରଣାଳୀ ଅନୁସାରେ ପ୍ରସ୍ତୁତ ହୋଇଛି । ବିଭିନ୍ନ ସ୍ତରରେ ଆବଶ୍ୟକ ଅନୁସାରେ ସମସାମୟିକ ପରିସ୍ଥିତିକୁ ନେଇ ଭାବବିନିମୟ ଓ ପାରସ୍ପରିକ ଯୋଗାଯୋଗ ସ୍ଥାପନ କିପରି ଓଡ଼ିଆ ଭାଷାରେ ସହଜରେ, ସରଳରେ ହୋଇପାରିବ – ଏ ଦିଗ ପ୍ରତି ଏଥିରେ ଧ୍ୟାନ ଦିଆଯାଇଛି । ଓଡ଼ିଆ ଭାଷା ଓ ସାହିତ୍ୟର ପ୍ରାୟୋଗିକ ଜ୍ଞାନର ବିକାଶ ନିମିତ୍ତ +୩ ସରାୟ ବିଦ୍ୟାର୍ଥୀଙ୍କୁ ଏହି ପାଠ୍ୟକ୍ରମର ଖଣ୍ଡଟି ସାହାଯ୍ୟ କରିବ । ସେଥିପାଇଁ ପ୍ରଚଳିତ ଭାଷାର ବୈୟାକରଣିକ, ବ୍ୟାବହାରିକ ଓ ପ୍ରାୟୋଗିକ ଦିଗ ପ୍ରତି ଏଥିରେ ଧ୍ୟାନ ଦିଆଯାଇଛି । ଏଥିରେ ସଂଯୋଗ ପ୍ରକ୍ରିୟାର ଅନୁବିଧି, ଯୋଗାଯୋଗର ତଥ୍ୟ ଓ ତତ୍ତ୍ୱ ପ୍ରତି ଗୁରୁତ୍ୱ ଦିଆଯାଇଛି । ସରକାରୀ କାର୍ଯ୍ୟାଳୟରେ ଓଡ଼ିଆ ଭାଷାର ବ୍ୟବହାରରେ ଏହା ଦକ୍ଷତା ବୃଦ୍ଧି କରିବ । ଓଡ଼ିଆ ଭାଷାର ପ୍ରୟୋଗରେ ସେମାନେ ଶୁଦ୍ଧ ଓ ପରିଚ୍ଛନ୍ନ ଭାବରେ ଯେକୌଣସି ପ୍ରକାର ଜ୍ଞାନର ସୂଚନା ତଥ୍ୟ ଓ ସିଦ୍ଧାନ୍ତକୁ ମୌଖିକ ଓ ଲିଖିତ ସ୍ତରରେ ସହଜରେ ପ୍ରକାଶ କରିପାରିବେ ଏବଂ ସେମାନଙ୍କ ମାତୃଭାଷା ପ୍ରୟୋଗର ବିକାଶ ଘଟିପାରିବ ।

ସବିଶେଷ ପାଠ୍ୟ

ଯୋଗାଯୋଗମୂଳକ ମାତୃଭାଷା – ଓଡ଼ିଆ (AECC)

୧ମ ଏକକ : ଯୋଗାଯୋଗର ପରିଭାଷା, ଅନୁବିଧି, ପରିସର ଓ ପ୍ରକାରଭେଦ

୨ୟ ଏକକ : ସାକ୍ଷାତକାର, ଭାଷଣ କଳା

୩ୟ ଏକକ : ସମ୍ବାଦର ପରିଭାଷା, ପରିସର ଓ ସମ୍ବାଦ ପ୍ରସ୍ତୁତି

୪ର୍ଥ ଏକକ : ଓଡ଼ିଆ ଭାଷାର ବର୍ଣ୍ଣମାଳା, ବର୍ଣ୍ଣାଶୁଦ୍ଧିର ନିରାକରଣ । (ବନାନ ତୁଟି – ସାଦୃଶ୍ୟଜନିତ ଅଶୁଦ୍ଧି, ଲିଙ୍ଗିଗତ ଅଶୁଦ୍ଧି, ସନ୍ଧିଗତ ଅଶୁଦ୍ଧି, ସମାସଗତ ଅଶୁଦ୍ଧି, ବଚନ ଓ ବିଭକ୍ତିଗତ ଅଶୁଦ୍ଧି, ବାକ୍ୟ ବିଧିଜନିତ ଅଶୁଦ୍ଧି, ସମାର୍ଥବୋଧକ ଶବ୍ଦାଶୁଦ୍ଧି, ପ୍ରତ୍ୟୟ ଜନିତ ଅଶୁଦ୍ଧି, ଶବ୍ଦ ସଂଯୋଗାତ୍ମକ ଓ ସ୍ୱରସଙ୍ଗତି ଜନିତ ଅଶୁଦ୍ଧି)

ମୂଲ୍ୟ ବିଭାଜନ ପଦ୍ଧତି : (ସବୁଥିରୁ ବିକଳ୍ପ ପଢ଼ିବ)

- କ) ନିର୍ଦ୍ଧାରିତ ପାଠ୍ୟର ସବୁ ଏକକ (ୟୁନିଟ୍) ରୁ ବିକଳ୍ପସହ ଦୁଇଟି ଲେଖାଏଁ ମୋଟ ୮ଟି ୧୫ନମ୍ବର ବିଶିଷ୍ଟ ଦୀର୍ଘପ୍ରଶ୍ନ ପଢ଼ିବ । ବିଦ୍ୟାର୍ଥୀଙ୍କୁ ୪ଟି ପ୍ରଶ୍ନର ଉତ୍ତର ଦେବାକୁ ହେବ । (୧୫ x ୪ = ୬୦)
- ଖ) ନିର୍ଦ୍ଧାରିତ ପାଠ୍ୟର ସବୁ ଏକକରୁ ୧୨ଟି ଅତିସଂକ୍ଷିପ୍ତ ପ୍ରଶ୍ନ ପଢ଼ିବ । ସେଥିରୁ ୧୦ଟି ପ୍ରଶ୍ନର ଉତ୍ତର ଦେବାକୁ ହେବ । (୧୦ x ୨ = ୨୦)
- ଗ) ମହାବିଦ୍ୟାଳୟସ୍ତରୀୟ ଅକ୍ଟ ପରୀକ୍ଷା (୨୦)
- ମୋଟ ମୂଲ୍ୟାଙ୍କ - ୧୦୦

AECC - 1 (MIL - HINDI)

MID SEM: 20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

UNIT - I

कविता

- (i) कबीर - साखी : 1 से 10
- (ii) तुलसी - विनयपत्रिका - पद 1 और 2
- (iii) प्रसाद - मधुमय देश
- (iv) निराला - भिक्षुक
- (v) अज्ञेय - हिरोशिमा

UNIT - II

गद्य

- (i) रामचन्द्र शुक्ल - उत्साह
- (ii) हजारी प्रसाद द्विवेदी - कुटज
- (iii) हरिशंकर परसाई - सदाचार का तावीज

UNIT - III

शब्द ज्ञान

- (i) शब्द शुद्धि
- (ii) वाक्य शुद्धि
- (iii) पर्यायवाची शब्द
- (iv) विलोम शब्द

UNIT - IV

सामान्य ज्ञान

- (i) निबंध लेखन (Eassy Writing)

पाठ्य पुस्तक :

- 1) हिन्दी प्रसून - सं. डॉ. अंजुमन आरा, प्लानेट वी, कटक
- 2) आधुनिक हिन्दी व्याकरण और रचना - वासुदेवनन्दन प्रसाद, भारती भवन, दिल्ली

AECC - 1 (MIL - SANSKRIT)

MID SEM: 20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

Unit- I & II: SANSKRIT PROSE

1. Aparīksitakārikam
2. Pitr Lbhaktih
3. Jimu' tavahanakatha'

Unit- III & IV: SANSKRIT POETRY

1. Maha' bha' rata 'Santi Parva (Ch. 70 on Qualities of Ruler)
2. Maha' bha' rata 'Santi Parva (Ch. 107 on Democracy)
3. Maha' bha' rata 'Santi Parva, (Ch. 120 on Duties of Ruler)

Core Readings:

1. *Samskrta-pravesa*, Utkal University, Vanivihar, Bhubaneswar
2. *Mahabharata Santi Parva*, Gita Press, Gorakhpur

Suggested Reading:

1. *Mahabharata Santi Parva*, Rastriya Sanskrit Sansthan, New Delhi

AECC - 1 (MIL - URDU)

MID SEM: 20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

UNIT-I Pross

1. Mujhe mere Doston se Bachao – Sajad Haider
2. Cinema ka Ishq – Prem Chand
3. Haj –e – Akber _ Prem Chand
4. Akhri Qadam – Zakir Husain

UNIT-II Poetry

1. Admi Nama - Nazir Akbeer Abadi
2. Nava Shewala –Iqbal

3. Haj –e – Akber _ Prem Chand
4. Akhri Qadam – Zakir Husain

UNIT-II Poetry

1. Admi Nama - Nazir Akbeer Abadi
2. Naya Shewala –Iqbal
3. Kashmir – Durga Sahaya Suroor
4. Nasha-te-Ummid – Hali

UNIT-III Grammer

Ism, Sifat, Fail, Wahid-o-Jama, Mutazad Alfaz, Mutashabeh Alfaz, Tazkir-o-Tanees.

UNIT-IV Rhetoric

Tashbeeh, Isteara, Kenaya, Majaz-e-Mursal, Tazadlham, Maratun Nazir.

- Suggested Readings:-
1. Urdu Zaban-o-qawaid – Part-1
Shafi Ahmed Siddiqi
 2. Ilmul Balaght – Abdul Majid.

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AECC - 2 (ENVIRONMENTAL SCIENCE)

MID SEM: 20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

Unit – I

The Environment: The Atmosphere, Hydrosphere, Lithosphere, Biosphere, Ecology, Ecosystem, Biogeochemical Cycle (Carbon Cycle, Nitrogen Cycle), Environment Pollution: Air Pollution, Water Pollution, Soil Pollution, Radiation Pollution.

Unit – II

Population Ecology: Individuals, Species, Pollution, Community, Control Methods of Population, Urbanization and its effects on Society, Communicable Diseases and its Transmission, Non-Communicable Diseases.

Unit- III

Environmental Movements in India: Grass root Environmental movements in India, Role of women, Environmental Movements in Odisha, State Pollution Control Board, Central Pollution Control Board.

Unit –IV

Natural Resources: Conservation of Natural Resources, Management and Conservation of Wildlife, Soil Erosion and Conservation, Environmental Laws: Water Act, 1974, Air Act, 1981, The Wildlife (Protection) Act, 1972, Environment Protection, 1986, Natural Disasters and their Management.

Books Recommended

1. Dash MC and Mishra PC, Man and Environment, McMillan, London.
2. Mishra PC and Das MC, Environment and Society, McMillan, London.
3. Odeem EP, Fundamentals of Ecology, Natraj Publication.
4. Mishra DD, Fundamental Concept in Environmental Studies, S.Chand, New Delhi.
5. Asthana DK and Asthana Meera, A Testbook of Environmental Studies, S. Chand, New Delhi.
6. Bharucah Erach, Textbook for Environmental Studies, Universities Press India Pvt. Ltd., Hyderabad.

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SKILL ENHANCEMENT COURSES

(SEC 1 & 2 for Honours, SEC 1, 2, 3 & 4 for Pass students)

MID SEM: 20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

These courses may be chosen from the following courses and a College has to choose the courses as per the availability of faculty/suitability of the college, to provide skill-based knowledge. The main purpose of these courses is to provide students life-skills so as to increase their employability. A Student opting for Honours would have to take two SEC and a student offering Pass papers would take four papers of SEC. List of SEC Courses offered by Fakir Mohan University:

1. Communicative English and Grammar
2. Quantitative and Logical Thinking
3. Bio-fertilizer
4. Mushroom Cultivation
5. Renewable Energy and Energy harvesting
6. Fuel Chemistry
7. Python Programming
8. Office Management
9. Computer Graphics
- 10.E-Commerce
- 11.Data Analysis and Computer Application
- 12.Applied Reasoning
- 13.Legislature Practice and procedures
- 14.Personality and Life Skill Development
- 15.Home based Catering

1. COMMUNICATIVE ENGLISH AND GRAMMAR

MID SEM: 20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

UNIT-I- BUSINESS COMMUNICATION AND GRAMMAR

1. Why English Communication is Essential and How to Improve the Skill?
2. Introduction to Voice and Accent
- Why do we have such different accents?
- Accent Training-Consequences
- Voice and accent in the Enterprise Industry
- Globally Comprehensible Accent
- Introduction to Phonetics
- International Phonetic Alphabet
3. Consonant Sounds.....
4. Vowels
5. Diphthongs
6. A Few Phonic Rules.....
7. Word Stress: Syllables
8. Intonation
- Intonation and Stress.....
9. Pacing and Chunking
- Common Patterns of Pacing
- Importance of Chunking
10. Fluency.....
11. Indianisms.....
- Errors relating to Grammar
- Vocabulary

UNIT-II: GRAMMAR

1. English: Spoken Versus Written Communication
2. Nouns
- 2.1 Kinds of Nouns
- 2.2 Activity 3: Noun Ping-pong
- 2.3 Nouns-Number
- 2.4 Noun-Gender

2.5	Countable and Uncountable Nouns.....	
3.	Pronouns.....	
3.1	Reflexive Pronouns	
3.2	Relative Pronouns	
3.3	Demonstrative Pronouns	
3.4	Interrogative Pronouns	
3.5	Indefinite pronouns	
3.6	Activity 4: Sentence Auction.....	
4.	Adjectives.....	
4.1	Activity 5 : Picture perfect	
4.2	Positioning of adjectives	
4.3	Comparative Degrees of Adjectives.....	
4.4	Order of Adjectives.....	
5.	Adverbs	
5.1	Kinds of Adverb	
5.2	Degree of Comparison	
5.3	Word Order with Adverbs	
5.4	Activity 6: Relay Race	
6.	Prepositions	
6.2	Activity 7: Treasure Hunt.....	
6.3	Activity 8: Route Map.....	
6.4	Prepositions with Adjectives, Nouns and Verbs	
7.	Conjunctions.....	
7.1	Coordinating conjunctions.....	
7.2	Subordinating Conjunctions	
7.3	Correlative Conjunctions.....	
7.4	Connecting Adverbs.....	
7.5	Activity 9: The Socks Story.....	
8.	Verbs	
8.1	Verb Classification.....	
8.2	List of irregular verbs.....	
8.3	Activity 10: Word Search.....	

9.	Subject and verb agreement.....	
9.1	Activity 11: Tossed Word Salad.....	
9.2	Activity 12: The Sentence Pageant	
10.	Determiners and Modifiers	
10.1	Kinds of determiners	
10.2	The Definite and the Indefinite Article	
10.3	Definite Article: The	
	Activity 13: Proof Reading	
11.	Tenses.....	
11.1	Reference Table	
11.2	Present Tense	
11.3	Activity 14: Instruction Manual.....	
11.4	Activity 15: Commentary	
11.5	Past Tense.....	
11.6	Activity 16:The Chain List	
11.7	Activity 17: Transcription.....	
11.8	Future Tense	
11.9	Activity 18: This Week for You	
11.10	Activity 19: Verb Grand Prix.....	
12.	Punctuation	
	Forms of Punctuation.....	
UNIT-III: READING COMPREHENSION.....		
	Reading – A 7 Step Process	
	Techniques to enhance students’ reading skills.....	
	Types of reading skills.....	
	Skimming	
	Scanning.....	
	Extensive reading	
	Intensive reading	
	Three levels of Reading	
	Improving your reading speed.....	
	Reading Comprehension Practice Exercises	

Reference Books:

- *Ways of Reading: Advanced reading Skills for Students of English Literature.* Martin Montgomery et al. London: Routledge, 2007.
- *Applying Communication Theory for Professional Life: A Practical Introduction.* Dainton and Zellely, <http://tsime.uz.ac.zw/claroline/backends/download.php?url=L0ludHJvX3RvX2NvbW11bmljYXRpb25fVGh1b3J5LnBkZg%3D%3D&cidReset=true&cidReq=MBA563>
- *Literature and the art of Communication,* Cambridge University Press.
- *Vistas and Visions.* Orient Black Swan (writing and grammar exercises at the end of lessons are recommended)
- *'Writing skills', Remappings :An Anthology for Degree Classes* Orient Black Swan.
- *Indian English through Newspapers* (Chapter 4,5 and 6), Concept, New Delhi,2008.
- *Contemporary Communicative English,* S Chand

Note: Students/faculty members are advised to download the study material for "SEC - English Communication and Grammar" from the University websit for reference purpose.

2. QUANTITATIVE AND LOGICAL THINKING

MID SEM: 20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

I. QUANTITATIVE APTITUDE & DATA INTERPRETATION.....

Unit – 1: 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 -2: Basic concepts, Different formulae of Percentage, Profit and Loss, Discount, Simple interest, Ratio and Proportion, Mixture

Unit- 3: Time and Work, Pipes and Cisterns, Basic concepts of Time, Distance and Speed ; relationship among them.....

Unit – 4: Concept of Angles, Different Polygons like triangles, rectangle, square, right angled triangle, Pythagorean Theorem, Perimeter and Area of Triangles, Rectangles, Circles

Unit – 5: Raw and Grouped Data, Bar Graphs, Pie charts, Mean, Median and Mode, Events and Sample Space, Probability

II. LOGICAL REASONING

Unit - 1 : Analogy basing on kinds of relationships, Simple Analogy; Pattern and Series of Numbers, Letters, Figures. Coding-Decoding of Numbers, Letters, Symbols (Figures), Blood relations.....

UNIT – 2 : Logical Statements – Two premise argument, More than two premise argument using connectives.....

UNIT -3: Venn Diagrams, Mirror Images, Problems on Cubes and Dices

Note: Students/faculty members are advised to download the study material for “SEC - Quantitative and Logical Thinking” from the University websit for reference purpose.

3. BIO-FERTILIZER

MID SEM: 20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

Unit-I

General account about the microbes used as biofertilizer – Rhizobium – isolation, identification, mass multiplication, carrier based inoculants, Actinorrhizal symbiosis. Azospirillum: isolation and mass multiplication, Azotobacter: classification, characteristics – crop response to Azotobacter inoculums, maintenance and mass multiplication.

Unit-II

Cyanobacteria (blue green algae), *Azolla* and *Anabaena azollae* association, nitrogen fixation, factors affecting growth, blue green algae and *Azolla* in rice cultivation.

Unit-III

Mycorrhizal association, types of mycorrhizal association, taxonomy, occurrence and distribution, phosphorus nutrition, growth and yield – colonization of VAM – isolation and inoculum production of VAM, and its influence on growth and yield of crop plants.

Unit-IV

Organic farming – Green manuring and organic fertilizers, Recycling of biodegradable municipal, agricultural and Industrial wastes – biocompost making methods, types and method of vermicomposting – field Application.

Text Books:

1. Mahendra Rai, (2006). Hand book of Microbial Bio-fertilizers. CRC Press.

Reference Books:

1. Dubey, R.C., 2005 A Text book of Biotechnology S. Chand & Co, New Delhi.
2. Kumaresan, V. 2005, Biotechnology, Saras Publications, New Delhi.
3. John Jothi Prakash, E. 2004. Outlines of Plant Biotechnology. Emkay Publication, New Delhi.
4. Sathe, T.V. 2004 Vermiculture and Organic Farming. Daya publishers.
5. Subha Rao, N.S. 2000, Soil Microbiology, Oxford & IBH Publishers, New -Delhi.
6. Vayas, S.C, Vayas, S. and Modi, H.A. 1998 Bio-fertilizers and organic. Farming Akta Prakashan, Nadiad
7. Pravin Chandra Dwivedi. (2008). Biofertilizers. Pointer Publishers.

4. MUSHROOM CULTIVATION

MID SEM: 20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

Unit-I

Introduction, history. Nutritional and medicinal value of edible mushrooms; Poisonous mushrooms. Types of edible mushrooms available in India - *Volvariella volvacea*, *Pleurotus citrinopileatus*, *Agaricus bisporus*. Cultivation Technology : Infrastructure: substrates (locally available) Polythene bag, vessels, Inoculation hook, inoculation loop, low cost stove, sieves, culture rack, mushroom unit (Thatched house) water sprayer, tray, small polythene bag.

Unit-II

Pure culture: Medium, sterilization, preparation of spawn, multiplication. Mushroom bed preparation - paddy straw, sugarcane trash, maize straw, banana leaves. Factors affecting the mushroom bed preparation - Low cost technology, Composting technology in mushroom production.

Unit-III

Storage and nutrition : Short-term storage (Refrigeration - upto 24 hours) Long term Storage (canning, pickles, papads), drying, storage in salt solutions. Nutrition - Proteins - amino acids, mineral elements nutrition - Carbohydrates, Crude fiber content - Vitamins.

Unit-IV

Food Preparation: Types of foods prepared from mushroom. Research Centers - National level and Regional level. Cost benefit ratio - Marketing in India and abroad, Export Value.

Text Books:

1. B. C. Suman and V. P. Sharma. (2007). Mushroom Cultivation in India. Daya Publishing House, New Delhi.

Reference Books:

1. Marimuthu, T. Krishnamoorthy, A.S. Sivaprakasam, K. and Jayarajan. R (1991) Oyster Mushrooms, Department of Plant Pathology, Tamil Nadu Agricultural University, Coimbatore.
2. Swaminathan, M. (1990) Food and Nutrition. Bappco, The Bangalore Printing and Publishing Co. Ltd., No. 88, Mysore Road, Bangalore - 560018.
3. Tewari, Pankaj Kapoor, S.C., (1988). Mushroom cultivation, Mittal Publications, Delhi.
4. Nita Bahl (1984-1988) Hand book of Mushrooms, II Edition, Vol. I & Vol. II.
5. Anon. (2010).The Cultivation of Mushrooms - An Outline of Mushroom Culture, Read Book Design, New Delhi

5. RENEWABLE ENERGY AND ENERGY HARVESTING

MID SEM: 20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

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.

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

Unit-II

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

Ocean Energy: Ocean Energy Potential against Wind and Solar, Wave Characteristics and Statistics, Wave Energy Devices.

Tide characteristics and Statistics, Tide Energy Technologies, Ocean Thermal Energy, Osmotic Power, Ocean Bio-mass.

Geothermal Energy: Geothermal Resources, Geothermal Technologies.

Hydro Energy: Hydropower resources, hydropower technologies, environmental impact of hydro power sources.

Reference Books:

1. Non-conventional energy sources - G.D Rai - Khanna Publishers, New Delhi-2004
2. Solar energy - M P Agarwal - S Chand and Co. Ltd-1983

3. Solar energy - Suhas P Sukhatime Tata McGraw - Hill Publishing Company Ltd-2017
4. Godfrey Boyle and J K Nayak “Renewable Energy, Power for a sustainable future”, 2004, Oxford University Press, in association with The Open University.
5. P Jayakumar, Solar Energy: Resource Assesment Handbook, 2009
6. The Art and Science of Photovoltaic J.Balfour, M. Shaw and S. Jarosek, Photovoltaics, Lawrence J Goodrich (USA)-Jones and Bartlett learning-2013

6. FUEL CHEMISTRY

MID SEM: 20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

Unit- I

Review of energy sources (renewable and non-renewable). Classification of fuels and their calorific value

Unit- II

Coal: Uses of coal (fuel and nonfuel) in various industries, its composition, carbonization of coal. Coal gas, producer gas and water gas—composition and uses. Fractionation of coal tar, uses of coal tar bases chemicals, requisites of a good metallurgical coke, Coal gasification (Hydro gasification and Catalytic gasification), Coal liquefaction and Solvent Refining.

Unit -III

Petroleum and Petrochemical Industry: Composition of crude petroleum, Refining and different types of petroleum products and their applications.

Fractional Distillation (Principle and process), Cracking (Thermal and catalytic cracking), Reforming Petroleum and non-petroleum fuels (LPG, CNG, LNG, bio-gas, fuels derived from biomass), fuel from waste, synthetic fuels (gaseous and liquids), clean fuels. Petrochemicals: Vinyl acetate, Propylene oxide, Isoprene, Butadiene, Toluene and its derivatives Xylene.

Unit- IV

Lubricants: Classification of lubricants, lubricating oils (conducting and non-conducting) Solid and semisolid lubricants, synthetic lubricants.

Properties of lubricants (viscosity index, cloud point, pore point) and their determination.

Reference Books:

1. E. Stocchi: *Industrial Chemistry*, Vol -I, Ellis Horwood Ltd. UK.
2. P.C. Jain, M. Jain: *Engineering Chemistry*, Dhanpat Rai & Sons, Delhi.
3. B.K. Sharma: *Industrial Chemistry*, Goel Publishing House, Meerut.

7. PYTHON PROGRAMMING

MID SEM:20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

Unit-1

Planning the Computer Program: Concept of problem solving, Problem definition, Program design, Debugging, Types of errors in programming, Documentation.

Unit-2

Techniques of Problem Solving: Flowcharting, decision table, algorithms, Structured programming concepts, Programming methodologies viz. top-down and bottom-up programming.

Unit-3

Overview of Programming: Structure of a Python Program, Elements of Python

Introduction to Python: Python Interpreter, Using Python as calculator, Python shell, Indentation. Atoms, Identifiers and keywords, Literals, Strings, Operators (Arithmetic operator, Relational operator, Logical or Boolean operator, Assignment, Operator, Ternary operator, Bit wise operator, Increment or Decrement operator)

Unit-4

Creating Python Programs: Input and Output Statements, Control statements (Branching, Looping, Conditional Statement, Exit function, Difference between break, continue and pass.), Defining Functions, default arguments.

Text Books

1. T. Budd, Exploring Python, TMH, 1st Ed, 2011

Reference Books

1. Allen Downey, Jeffrey Elkner, Chris Meyers , How to think like a computer scientist : learning with Python , Freely available online.2012 **Online References:**

1. Python Tutorial/Documentation www.python.org 2015 2.

<http://docs.python.org/3/tutorial/index.html>

3. <http://interactivepython.org/courselib/static/pythonds>

4. <http://www.ibiblio.org/g2swap/byteofpython/read/>

8. OFFICE MANAGEMENT

MID SEM: 20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

Unit- I: Office

What is a Business Enterprise? What is an Office? Who are Office Staff? What are the most Common Forms of Business Organization? What are the Advantages of Office Work? What are the Categories of Office Career and Job Classifications under Each Category? What are the Specific Skill Requirements for Office Jobs?

Duties and Responsibilities of Office Staff

Unit-II: Records Management

Objectives of Record Keeping; What is Filing? What are the Different Kinds of Filing System? Steps in Filing; Indexing; Selecting the Appropriate Filing System; How to handle Incoming & Outgoing Mails

Unit –III: Document/Report Writing

Key points to write a document: The 5w-h plan for writing; Steps in writing workplace documents; Important things to remember when editing seven layout mistakes to avoid; Quick tips for report Writing; Basics of Meetings

Unit-IV: Supervisory Skills

What are the Skills of the Supervisor and How to Acquire Them? Functions of Supervisor

Communication

Meaning; Process; Communicating Tools; Types, Barriers

Leadership & Motivation

Meaning and Concept; Importance of Leadership; Qualities of a Leader; Relationship & Differences Leadership and Motivation; Organizational Leadership; Leadership Ethics - Traits of an Ethical Leader; Leadership Styles - Important Leadership Styles- Situational Leadership – Emotional Intelligence of Leader; Which Leadership Style to Follow? Influence of Situational Leadership Styles on Subordinate Development; References:–

1. Office Management
By Ankita Bhatia
Dr. R. K. Chopra
2. Office Management
By Dr. P. Rizwan Ahmed
3. Office Management
By R S N Pillai

9. COMPUTER GRAPHICS

MID SEM: 20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

Unit-1

Computer Graphics: A Survey of Computer graphics, Overview of Graphics System: Video Display Devices, Raster-Scan Systems, Input Devices, Hard-Copy Devices, Graphics Software.

Unit-2

Graphics Output Primitives: Point and Lines, Algorithms for line, circle & ellipse generation, Filled-Area Primitives. Attributes of Graphics Primitives: Point, line, curve attributes, fill area attributes, Fill methods for areas with irregular boundaries.

Unit-3

Geometric Transformations (both 2-D & 3-D): Basic Geometric Transformations, Transformation Matrix, Types of transformation in 2-D and 3-D Graphics: Scaling, Reflection, shear transformation, rotation, translation. 2-D, 3-D transformation using homogeneous coordinates.

Unit-4

Two Dimensional Viewing: Introduction to viewing and clipping, Viewing transformation in 2D, Viewing pipeline, Clipping Window, Clipping Algorithms: Point clipping, Line clipping and Polygon clipping.

Text books

1. Mathematical Elements for Computer Graphics, D. F. Rogers & J. A. Adams, MGH, 2/ed.
2. Donald Hearn & M. Pauline Baker, "Computer Graphics with OpenGL", Pearson Education.

Reference books

1. D. Hearn and M. Baker, "Computer Graphics with Open GL", Pearson, 2/ed.
2. D. F. Rogers, "Procedural Elements for Computer Graphics", MGH

10. E-COMMERCE

MID SEM: 20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

Unit I:

Introduction E-Commerce-meaning, nature, concepts, types; e-commerce business models B2B [concept, major activities, types of B to B market (independent, buyer oriented, supplier oriented, e- market place)], B2C [portals, e-tailer, content provider, transaction broker, real life examples of B2C], C2C, C2B, etc.; forces behind e-commerce, e-Governance [meaning, types, significance, real life examples].

Unit II:

E-CRM and SCM E-CRM-definition, features, goals of E-CRM business framework, phases of E-CRM, types of E-CRM, Functional components of E-CRM, strategies for ECRM solutions; SCM-definition, features, types of supply chain.

Unit III:

Digital Payment Methods of e-payments [Debit Card, Credit Card, Smart Cards, eMoney, NEFT, RTGS], electronic or digital wallet, digital signature (procedures, working and legal provisions), payment gateways [Core Banking Solution or CBS, Mobile Payment, UPI, NCPI, International Payments], Online banking [meaning, concepts, importance, electronic fund transfer, automated clearing house, automated ledger posting], risks involved in e-payments.

Unit IV: ERP & New Trends in E-Commerce

ERP

Definition, features, major characteristics, levels of ERP, benefits of ERP, enterprise potential of ERP, modules of ERP, phases of ERP implementation, limitations of ERP.

New Trends in E-Commerce

Social Commerce-concept, definition, features; Digital Marketing-definition, objectives, methods, limitations; Advertisement in Social Media-objectives, advantages and disadvantages, procedures

Learning Outcomes: This paper would enhance the technical skills of the students to get into the business ventures using electronic means thereby providing the opportunity to gain access to a larger customer base.

Text Books Recommended

1. E Commerce-D Mohapatra, Das and K M Das- Himalaya Publishing House
2. Bhaskar, B., E-Commerce, McGraw Hill

Suggested Readings:

1. E-Commerce ,Kakkar, Sendhu, Kalyani Publishers ,New delhi
2. E-Commerce, S.K. Dey/ M. Behera ,V.K. Global Pub. Pvt. Ltd, New Delhi.
3. Schneider G., E-Business, Cengage
4. E-Commerce and Business Communication: Datta &Somani, Oxford University Press.
5. E-Commerce– A K Jha, Vrinda Publications (P) Ltd
6. Pandey U.S – E.Commerce& Mobile Commerce Technology – S. Chand
7. P. T. Joseph, E-Commerce: An Indian Perspective, PHI Learning
8. Laudon, E-Commerce, Pearson Education India

11. DATA ANALYSIS AND COMPUTER APPLICATION

MID SEM: 20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

Course Description: The purpose of this course is to introduce basic computer skills to students at UG level in non technical subjects. After completion of this course, the students are expected to acquire some basic knowledge about computers and to develop some basic skills in using computers for data storage, compilation, analysis and presentation.

Module I:

Introduction to computer and Basic data types Introduction to computer- Characteristics and Basic Applications of Computer, Components of Computer System, Central Processing Unit (CPU), VDU,

Keyboard and Mouse, Other input/output Devices, Memory, concepts of Hardware and Software, Classifications of computers; Representation of data/Information concepts of data processing, Basic data types, Storage of data/Information as files, operating system and The User Interface (windows, Linux), Windows Setting- Control Panels, Accessories (windows)

Module II:

Basic Word Processing Introduction to Word Processing, Opening Word Processing Package, Opening and closing documents, Using a Document/Help Wizard, Text Creation and Manipulation, Formatting the Text, Handling Multiple Documents, Table Manipulation, Printing, saving documents in different formats. Basic Presentations Basics- Difference between presentation and document, Using Power Point, Creation of Presentation, Preparation of Slides, Selection of type of Slides, Importing text from word documents, Providing aesthetics- Slide Designs, Slide Manipulation and Slide Show, Presentation of the Slides

Module III:

Spreadsheets and Basic Data Analysis Spread Sheet, Elements of Electronics Spread Sheet, Application/usage of Electronic Spread Sheet, Manipulation of cells, Formulas and functions; Spread sheets for Small accountings maintaining invoices/budgets, basic practical data analysis works (Maintaining daily and monthly sales reports)

Module IV:

Basic Computer Communication and Internet Basic of Computer networks- LAN and WAN, Internet, Service on Internet; WWW and Web Browsers, Web Browsing software, Surfing the Internet, Chatting on Internet, Email-Basic of electronic mail, Using Emails, Document handling in Email.

Reading List:

1. C.S. French "Data Processing and Information Technology", BPB Publications 1998
2. P.K Sinha, Computer Fundamentals, BPB Publications, 1992
3. Guy Hart-Davis "The ABCs of Microsoft Office 97 Professional edition", BPB Publications, 1998
4. Karl Schwartz, "Microsoft Windows 98 Training Guide", 1998

12. APPLIED REASONING

MID SEM: 20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

Unit-I Fallacies: Introduction, Fallacies of Relevance, Fallacies of Presumption, Fallacies of Ambiguity, Illicit Transference, Fallacies in Ordinary language

Unit-II Types of Reasoning: Analogical, Legal and Moral

Unit-III Science & Superstition: Distinction, Evidentiary Support, Objectivity Integrity

Books Recommended:

1. H.Patrick, J. – A Concise Introduction to Logic (2015) 12th Edition
2. M.Sen – An Introduction to Critical Thinking (2010)

13. LEGISLATURE PRACTICE AND PROCEDURES

MID SEM: 20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

Unit-I

Powers and Functions of People's Representatives at different tiers of Governance

- i) Members of Parliament, State Legislative Assemblies
- ii) Representatives of Rural & Urban local self-government from Zilla Parishad, Municipal Corporation to Panchayat/ Ward

Unit-II :Supporting the Legislative Process and the Legislative Committees

- i) Legislative Procedure: How a Bill becomes law, Role of the Standing Committee in reviewing a Bill
- ii) Types of Committees; Role of Committees in reviewing Government Finances, policy, programmes and legislation

Unit-III : Reading the Budget Document

- i) Overview of the Budget Process, Role of Parliament in reviewing the Union Budget ii) Railway Budget, Examination of Demands for Grants of Ministries, Working of Ministries

Unit –IV : Support in Media monitoring and Communication

- i) Types of Media and their significance for Legislators ii) Basics of Communication in Print and Electronic Media

Text Books

1. D. Kapur and P. Mehta, (2006) 'The Indian Parliament as an Institution of Accountability', *Democracy, Governance and Human Rights*, Programme Paper Number 23, United Nations Research Institute for Social Development.

2. Government of India, (Ministry of Parliamentary Affairs) (2009), *Subordinate Legislation*,
3. Government of India, (Ministry of Parliamentary Affairs), (2009) *Legislation, Parliamentary Procedure*.
4. P. Mehta, 'India's Unlikely Democracy: The Rise of Judicial Sovereignty', *Journal of Democracy*, Vol. 18(2), pp.70-83.
5. Sanyal, (2011) *Strengthening Parliamentary Committees* PRS, Centre for Policy Research, New Delhi.

Reference Books

6. A. Celestine, (2011) Delhi, *How to Read the Union Budget* PRS, Centre for Policy Research, New Delhi.
7. B. Jalan, (2007) *India's Politics*, New Delhi: Penguin.
8. G. Rose, (2005) 'How to Be a Media Darling: There's No getting Away From It', *State Legislatures*, Vol. 31(3).
9. N. Jayal and P. Mehta (eds), (2010) *The Oxford Companion to Politics in India*, Oxford University Press: New Delhi,

14. PERSONALITY AND LIFE SKILL DEVELOPMENT

MID SEM: 20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

Introduction: The course is designed to help the students understand the importance of the life skills and develop a positive attitude for leading a successful life.

Learning Objectives:

- To help the students to be aware about the importance attitude in life.
- To help them understand what is holding us back and how to motivate self and others. ☒
- To help them understand the importance of interpersonal skill.

Expected outcomes: Students will be able to

- The students will develop confidence by mastering the seven steps to positive thinking and be successful by turning weaknesses into strengths.
- The students will be able to build trust by developing mutual respect with people around them.

UNIT-I

- (i) **Attitude:** The benefits of positive attitude; The consequences of negative attitude; Factors that determine attitude.
- (ii) **Building positive attitudes:** Eight steps to change attitude; Attitude of winners versus losers

UNIT- II

- (i) **Success:** What is success? Obstacles to success; Qualities of a successful person
- (ii) **Holding back:** What is holding us back? Reasons that we don't achieve excellence

UNIT –III

- (i) **Motivation:** Meaning of motivation; Internal and external motivation; Stages from motivation to demotivation.
- (ii) **Self Esteem:** Meaning of self-esteem; Advantages of high self-esteem; Causes of low self-esteem; Steps to building a positive self-esteem.

UNIT -IV

(i) **Interpersonal skills:** What is positive relationship; Factors preventing positive relationships; Perception of relationships

((ii) **Positive personality:** Characteristics of positive personality; Steps to building a positive personality

UNIT -V

(i) **Habits:** What is habit? Subconscious mind and habits; Forming positive habits

(ii) **Goal setting:** What is goal setting? Goal setting and achievement; Why don't more people set goals

Text Books:

☞ Khera, Shiv. (2007). You can win. Macmillan India Ltd. New Delhi ☞

Dale, Karnegei. How to win Friends and influence people.

15. HOME BASED CATERING

MID SEM: 20 Marks

END SEM: 80 Marks

TOTAL: 100 Marks

Unit I: Introduction to food service

- Factors contributing to the growth of food service industry
- Kinds of food service establishments

Unit II: Food production

- Menu planning importance of menu, factors affecting menu planning, menu
- Planning for different kinds of food service units
- Food purchase and storage
- Quantity food production: Standardization of recipes, quantity food preparation techniques, recipe adjustments and portion control
- Hygiene and sanitation

Unit III: Resources

- Money
- Manpower
- Time
- Facilities and equipment
- Utilities

Unit IV: Planning of A food service Unit

- Preliminary planning - Survey of types of units, identifying clientele, menu
- Operations and delivery

RECOMMENDED READINGS:

Text Book:

1. Sethi, Mohini (2005) institution food management New age international publishers.

Reference Book:

1. West B Besie & Wood Levelle (1988) Food service in institutions 6th Edition revised
By Hargar FV, Shuggart & Palgne Palacio June, Macmillian publishing company.
2. Knight J.B & Kotschevar LH (2000) quantity food production planning &
management 3rd edition John Wiley & Sons.
3. Philip E Thangam (2008) Modern Cookery for teaching and Trade Part I & II orient
Longman.
4. Taneja S and Gupta SL (2001) Enterpreneurship development, Galgotia publishing

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