Ability Enhancement Compulsory Courses (AECC – Environmental Studies)

Unit 1: Introduction to environmental studies

- Multidisciplinary nature of environmental studies; components of environment – atmosphere, hydrosphere, lithosphere and biosphere.
- Scope and importance; Concept of sustainability and sustainable development. (2 Lectures)

Unit 2: Ecosystems

- What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chain, food web and ecological succession. Case studies of the following ecosystems:
  a) Forest ecosystem
  b) Grassland ecosystem
  c) Desert ecosystem
  d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries) (6 Lectures)

Unit 3: Natural Resources: Renewable and Non-renewable Resources

- Land Resources and land use change; Land degradation, soil erosion and desertification.
- Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).
- Heating of earth and circulation of air; air mass formation and precipitation. • Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

(8 Lectures)

Unit 4: Biodiversity and Conservation

- Levels of biological diversity :genetic, species and ecosystem diversity;

Biogeography zones of India; Biodiversity patterns and global biodiversity hot spots

• India as a mega-biodiversity nation; Endangered and endemic species of India • Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

• Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

(8 Lectures)

Unit 5: Environmental Pollution

• Environmental pollution : types, causes, effects and controls; Air, water, soil, chemical and noise pollution

• Nuclear hazards and human health risks

• Solid waste management: Control measures of urban and industrial waste.. • Pollution case studies.

(8 Lectures)

Unit 6: Environmental Policies & Practices

• Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture.

• Environment Laws : Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act; International agreements; Montreal and Kyoto protocols and conservation on Biological Diversity (CBD). The Chemical Weapons Convention (CWC).

• Nature reserves, tribal population and rights, and human, wildlife conflicts in Indian context

(7 Lectures)

Unit 7: Human Communities and the Environment

• Human population and growth: Impacts on environment, human health and

welfares.

• Carbon foot-print.

• Resettlement and rehabilitation of project affected persons; case studies. • Disaster management: floods, earthquakes, cyclones and landslides. • Environmental movements: Chipko, Silent valley, Bishnios of Rajasthan. • Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.

• Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

(6 Lectures)

Unit 8: Field work

• Visit to an area to document environmental assets; river/forest/flora/fauna, etc. • Visit to a local polluted site – Urban/Rural/Industrial/Agricultural. • Study of common plants, insects, birds and basic principles of identification. • Study of simple ecosystems-pond, river, Delhi Ridge, etc.

(Equal to 5 Lectures)

Suggested Readings:

1. Carson, R. *2002. Silent Spring*. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R.1993. This *Fissured Land:* An Ecological History of India. Univ. of California Press.
3. Gleeson,B. and Low, N. (eds.) 1999. Global Ethics and Environment, London, Routledge.
4. Gleick, P.H. 1993. Water in *Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press. 5. Groom, Martha J. Gary K. Meffe, and Carl Ronald carroll. *Principles of Conservation Biology*.
   Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. Science, 339: 36-37.
7. McCully, P.1996. *Rivers no more: the environmental effects of dams*(pp. 29-64). Zed Books.
8. McNeil, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.
9. Odum, E.P., Odum, h.T. & Andrews, J.1971. *Fundamentals of Ecology*.

Philadelphia: Saunders.
10. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.
11. Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatement*. Oxford and IBH Publishing Co. Pvt. Ltd.
12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8th edition. John Wiley & Sons.
13. Rosencranz, A., Divan, S., & Noble, M.L. 2001. *Environmental law and policy in India*. Tripathi 1992.
14. Sengupta, R. 2003.*Ecology and economics:* An approach to sustainable development. OUP.
15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
16. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology: Voices from the Tropics*. John Wiley & Sons.
17. Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
18. Warren, C.E. 1971. *Biology and Water Pollution Control*. WB Saunders. 19. Wilson, E.O. 2006. *The Creation: An appeal to save life on earth*. New York: Norton.
20.World Commission on environment and Development. 1987. *Our Common Future*. Oxford University Press.
21. www.nacwc.nic.in
22.www.opcw.org

Applied Science

OBJECTIVES:

1. To know the importance of science in daily life
2. Ability to understand the established concepts and theory in basic and applied aspects of sciences.
3. To develop analytical attitude and scientific way of thinking.
4. To impart knowledge to apply.

Course	TC	Th C	Pr C	Int M	Ext M	Total
Applied Science	4	2	2	50	50	100

Theory

Module No.	Objectives	Content	Evaluation

1	This will enable students to: 1) Understand the use and importance of chemistry in day to day life. 2) Develop to understand the importance of knowledge of chemistry with respect to food, textiles, medicine, harmful chemicals & industries. 3) To develop scientific and analytical attitude.	**Applied Chemistry** **1) Review of Basic Chemistry** • Important definitions • Difference between Organic & Inorganic compounds • Functional groups • Bohr's model of atom • Atomic size, Atomic number & electronic configuration **2) Chemical Bonding** **Introduction to types of bonds** • Ionic bond • Covalent bond • Co-ordinate bond • Hydrogen bond • Vanderwall's Interaction • Non- covalent bond • Examples of functional groups and chemical bonds in biomolecules **3) Soaps, Detergents, Drugs and Dyes** • Saponification reaction • Difference between soaps and detergents • Properties of good drug • Meaning of important terms with e.g. Analgesic, Antipyretic, Antacid, Antibiotic, Diuretic, anti-inflammatory, Laxatives, Sulfa drugs • Common drugs- use and side effects of Aspirin, Paracetamol, Sulphanilamide • Definition, important terms like chromophore, Auxochrome, chromogen	25 marks Assignment / Quiz 1) Over the counter available drugs for basic ailments. 2) Functional groups and its example in macromolecules

		• Definition of Dyes and its application in food and nutraceuticals **4) Polymers** • Introduction • Define-monomer, polymer, polymerization Some important polymers and their structure & uses polyethylene, polyester, polyvinyl chloride	

Module No.	Objective	Content	Evaluation
2	This will enable the students to - 1) Acquire the basic knowledge of the fundamentals of biological sciences. 2) Apply the knowledge of the biological processes to everyday life. 3) Will help to understand the basics of any micro-organism, building blocks i.e. the biomolecules. 4) Understand the role of genetics in human life 5) Understand the importance of health and basic day to day ailments.	**1) Cell** • As the basic unit of life • Types of cells • Salient features of animal cell **2) Biomolecules** Definition, Function and basic classification: • Most macromolecules are Polymers; • Carbohydrates act as fuel and building materials. • Lipids are group of hydrophobic molecules. • Protein have diverse structures and functions • Nucleic acids store and transmit hereditary information 3) **Micro-organism** • Bacteria-Structure, Classification based on response to O_2, nutrition, Importance of bacteria • Fungi- Morphology of molds and yeasts, classification, beneficial and harmful aspects • Virus- Morphology, Classification based on nucleic acid content and hosts 4) **Introduction to health-Definition and concept of health.** • **Major nutritional deficiency diseases**- Protein Energy Malnutrition, Vitamin A,	25 marks Assignment / Quiz 1) Importance of Macromolecules and its dietary source. 2) Understand normal blood pressure levels and Blood sugar levels

		Deficiency and Iron deficiency anemia. • **Harmful effects of overdosage of Vitamins and Minerals** • **Life style related diseases** hypertension, diabetes mellitus, and obesity- their causes and prevention • **Social health problems** smoking, alcoholism, drug dependence and Aquired Immuno Deficiency Syndorme (AIDS). • **Common aliments**- cold, cough, fevers, diarrhoea, constipation their causes and dietary treatment. • **Importance of** gut bacteria in health and well being **5) Genetics and Heredity** • Origin of the term gene • Chemical basis of heredity organization of human genome, sex determination, monogenic and polygenic traits, patterns of inheritance- autosomal, recessive and sex-linked inheritance • The flow of genetic information from DNA to RNA to protein • Mutation and its type, abnormalities in chromosome number and structure	

EVALUATION :

1) Internal (Unit Test + Assignment)-25 marks and Internal Practical - 25 marks. (Total Internal=50)
2) External - Theory (*few questions from practical part) 50 marks = 50 marks 3) Internal -50+ External – 50 marks = 100 marks

REFERENCES:

• Glazer A. Na Ni Baido H (1995) Microbial Biotechnology W.H. Freemen Company. •

K. Venkatraman (2009): The Chemistry of Synthetic Dyes, Vol. I, Elsevier India.

• Kent S.A. (2007): Riegel's Handbook of Industrial Chemistry. 11th Edition. Springer US.
• Orchard G. and Nation B (2014) Cell Structure and Functions. OUP Oxford • Nicholl D.S.T.

(2012) An Introduction to Genetic Engineering-Cambridge University, Press. • Tortora G,

Funke B, et al., (2019). Microbiology: An Introduction. Pearson Education • Pico Y. (2020): The

Chemical Analysis of Food. Academic Press.

• Light Douglas B (2009). Cells , Tissue and Skin. Chelsea House Publishers • Hunger

K (2003) Industrial Dyes: Chemistry, Properties, Applications . Wiley VCH

• Rao C.V. (1994) Foundation to Mol. Biol, R. Chenda. Co. Publisher

• Timberlake K and Timberlake W (2016). Basic Chemistry. Pearson Education • Carruthers W,

Coldham I (2015). Modern methods of Organic Synthesis. Cambridge University Press.

Practical

Module No	Objective	Content	Evaluation
3	This will enable student to: 1) To systematically work in laboratory and learn basic skills of pipetting, measuring exact volumes, weighing etc. 2) Perform simple chemical procedures and apply them for complex experiments in future.	**Applied Chemistry** 1) Introduction to chemistry lab & apparatus. 2) Neutralization of strong acid with strong base (HCl & NaOH) 3) Neutralization of weak base with strong acid (Na_2CO_3 & H_2SO_4) 4) Neutralization of weak acid with strong base (Oxalic acid & NaOH) 5) Oxidation- reduction reaction (Oxalic acid & $KMnO_4$) 6) pH determination of various solutions: acid, base and neutral (two household example for each) 7) Preparation of soap bar 8) Viscosity measurement: water, oil, shampoo by Oswald's viscometer	25 Marks • Journal • Performing experiments • Understanding of concepts

Module No.	Objective	Content	Evaluation
4	This will enable student to: 1) Acquire knowledge of various micro organisms and ability to identify them through microbiological techniques. 2) Understand and apply this knowledge in day to day life. 3) Learn precision and cautiousness required while handling pathogens or any microbial related work	**Applied Biology** 1) Study and care of microscope 2) Observation of motility of bacteria by Hanging drop method (*E.coli* / *Proteus*) 3) Observation of bacteria by the simple: monochrome staining method (Hay infusion culture or milk) 4) Gram staining of bacteria in buttermilk 5) To observe common pathogenic bacteria (any 6 – permanent slides) 6) Observation of fungi on different food materials 7) To observe common pathogenic protozoa (permanent slides of *Entamoeba histolytica* and *Plasmodium vivax*) 8) Study of medicinally important plants (projects)	25 Marks • Journal • Performing experiments • Understanding of concepts

REFERENCES:

Glazer A. Na Ni Baido H (1995) Microbial Biotechnology W.H. Freemen Company. K. Venkatraman (2009): The Chemistry of Synthetic Dyes, Vol. I, Elsevier India. Kent S.A. (2007): Riegel's Handbook of Industrial Chemistry. 11th Edition. Springer US. Orchard G. and Nation B (2014) Cell Structure and Functions. OUP Oxford Nicholl D.S.T. (2012) An Introduction to Genetic Engineering-Cambridge University, Press.

SEVA MANDAL EDUCATION SOCIETY'S
DR. BHANUBEN MAHENDRA NANAVATI COLLEGE OF HOME SCIENCE
(AUTONOMOUS)
NAAC Re-accredited 'A+' Grade with CGPA 3.69 / 4 (3rd Cycle)
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APPROVED SYLLABUS UNDER AUTONOMY

PROGRAMME: B.Sc. in Home Science (Intermediate)

Department of English

Semester I

Course Title: Intermediate English Communication Skills I

Course Description:

To equip the student with the required reading, writing and verbal communication skills in English for everyday personal as well as professional communication.

Target group: Students who have had 12 years of education in English medium

Learning Outcomes:

The student will learn how to

-Read with fluency while simultaneously comprehending passages in English
-Develop effective listening skills
-Express ideas descriptively and creatively.
-Develop literary sensibility among students and learn how to appreciate texts critically.

Code	Course	TC	Th C	Pr C	Int M	Ext M	Total
	English I (Intermediate)	4	3	1	50	50	100

Module No.	Objective	Content	Evaluation
1	The student will be proficient in writing social and business letters effectively	Social correspondence: Request/apology/ thank you/invitation Letters of enquiry/ complaint Letters to the editor on contemporary social/ civic issues	Any two letters = 5x2 = 10 marks (to be evaluated as part of written test)

Letter Writing			

Module No.	Objective	Content	Evaluation
2 **Report Writing**	The student will be able to write a report effectively and present the same verbally	1. Sequencing words / Use of correct tense 2. Types of Reports ● Eye-witness Report ● Activity Report ● Project report	**Assignments:** Preparing and presenting a report based on a college event Structure/ outline/content - 10 marks (delivery) - 5 marks = 15 marks

Module No.	Objective	Content	Evaluation
3 **Enhancing Comprehension and reading skills**	The student will be able to - enhance vocabulary express personal responses descriptively articulate ideas lucidly	Selected stories the anthology *Lets Go Home and Other Stories* (Ed. Meenakshi Mukherjee)- 'The Shadow', 'The Meeting Pool,' The White Dove'	Written test for 15 marks based on the following parameters ● Articulating ideas/critical analysis (5) ● Expressing personal response to the select narratives (10)

Module No.	Objective	Content	Evaluation
	Student will be encouraged to explore the	1. Story writing 2. Creating a blog 3. Review (Book/Film)	**Assignments**: Creating a blog on topics such as

4 **Creative Writing**	creative and imaginative elements of writing		fashion, food, music etc. /presenting a review (10)

***Compulsory attendance in Language lab for at least 10 hours in a semester (5 marks)**

EVALUATION:

Evaluation	**Details** **(* please give details of assessment in terms of Unit test/ Project/ quiz /or other assignments and marks allotted for it)**	**Marks**
Internal	1.Letter writing - 10 2.Report writing - 15 3.Comprehension - 15 4.Creatiing blog/ Writing review - 10	50
External	Written examination	50
	Total marks	**100**

PROGRAMME: B.Sc. in Home Science (Basic)

Department of English

Semester I

Course Title: Basic English Communications Skills I

Course Description:

To equip the student with required written and oral communication skills for everyday and professional communication

Target group: Students who have studied in school in medium of education other than English

Learning Outcomes:

The student will learn how to

-Improve their vocabulary so as to enhance their fluency in English
-Read with correct pronunciation and modulation while simultaneously comprehending passages in English
-Develop written communication skills for everyday and professional communication

Code	Course	TC	Th C	Pr C	Int M	Ext M	Total
	English I (Basic)	4	3	1	50	50	100

Module No.	Objective	Content	Evaluation
1 **Reading techniques**	The student will be able to - employ techniques of skimming and	Skimming and Scanning Precis writing /Summary	**Assignments**: Passage for summarization (5)

	scanning while reading a passage - identify key points while summarizing		Passage for skimming and scanning (5)

Module No.	Objective	Content	Evaluation
2 **Basic Letter Patterns**	The learner will familiarize themselves with basic letter patterns	**Basic Letter patterns** Invitation/request/ apology / thank you (1) Letters of enquiry/complaints	Any 3 of the following: Invitation or Request or Apology **or** Thank you **or** enquiry **or** Complaint 5 marks per letter 2x 5= 10 marks

Module No.	Objective	Content	Evaluation
3 **Comprehension and writing skills**	The learner will be able to - develop effective reading skills express their ideas coherently write with proper sentence construction and paragraph development enhance their vocabulary	Developing Reading and Writing Skills Based on selected Short Stories from Yuva Katha Series 4 (Miriam's Letter) and 7 (Pinti's Sabun) ● Sentence construction for grammatically correct English ● Paragraph development ● Vocabulary building ● Expressing ideas ● Reading with fluency	Comprehension of story (10) Vocabulary based exercises (5) Personal responses to the narrative (10)

Module No.	Objective	Content	Evaluation
4 **Conventions and Social skills**	The learners will be able to - familiarize themselves with formal and informal	**Conventions of Social Interaction** Conventions of Social Interaction ● Starting a conversation ● Greetings ● Introducing self and others ● Asking questions ● Requesting	Language lab assignments (10) Role play (5)

	modes of social interaction confidently converse in English	• Apologizing • Thanking • Inviting • Accepting • Ending a conversation	

***Compulsory attendance in Language lab for at least 10 hours in a semester (5 marks)**

EVALUATION:

Evaluation	**Details** **(* please give details of assessment in terms of Unit test/ Project/ quiz /or other assignments and marks allotted for it)**	**Marks**
Internal	1.Skimming and Scanning/ Precis Writing - 10 2.Letter writing - 10 3.Comprehension - 15 4. Conventions of Social Interaction - 15	50
External	Writing	50
	Total marks	**100**

Prescribed Texts: **(Lower Level English)**
Keerti Ramachandran. 1996 (rpt 2010). Yuvakatha Vol 7. Katha Books: New Delhi.

Higher Level English.

Meenakshi Mukherjee.Rpt.2018. Let's Go Home and Other stories. Orient Longman: New Delhi .

REFERENCES:

- Raghupathi, Seema ; Shyamgopal, S (2013). Advanced skills of Essay Writing /. - Delhi : Pacific.
- Anjana Neira Dev et al. (2009). *Creative Writing: A Beginner's Manual*, New Delhi: Pearson.
- Baker, Joanna (2003). *Essential speaking skills. A handbook for English language teachers.* Westrup, Heaths: London Continuum.
- Das, Susmita (2004). *English language and grammar a resource book of ideas and activities for teachers.* Jaipur: Mangal Deep Publications.
- David, A. (2005). *Teaching English as a second language*. New Delhi: Commonwealth Publishers.
- Effective business writing / Forsyth, Patrick . - New Delhi : Kogamn Page , 2009
- Gibson, Miiko Tan (2003). *Creative English - a comprehensive approach: 6*. Singapore: Singapore Federal Publications.
- Reutten, Mary K. (2004). *Focus on writing: 1: developing composition skills through instruction and practice*. Singapore: Singapore Learners Publishing.
- Writing your life story : how to record and present your memories for friends and family to enjoy / Oke, Michael . - Mumbai : Jaico , 2006 135p.
- Rocci, Andrea, and Louis de Saussure. Verbal Communication. De Gruyter Mouton, 2016

Podcasts

- "General English." *learning english.british council.org*. Podcasts. Web.25 Aug.2020
- "10 Practical Phrases."*podbean.com*.Espresso English Podcast. Web.25 Aug.2020
- "6 Minute English." *bbc.co.uk*.Podcasts.Web.25 Aug.2020
- "Chatter Box."*esl.culips.coms.*Web.25 Aug.2020