

**Description of some of the courses addressing crosscutting themes like Gender, Environment and Sustainability, Human Values, Health Determinants, Right to Health Issues, Emerging demographic changes and Professional Ethics in the Curricula**

**See following pages for extracts of courses addressing crosscutting issues**

## II Year B.Sc (Medical Imaging Technology)

### Subject: HUMAN RIGHTS, GENDER EQUITY AND ENVIRONMENTAL STUDIES

**Theory: 30 Hours**

#### **COURSE OUTCOMES**

*At the end of the course students will be able to...*

**CO1:** Understand the very fact human rights system.

**CO2:** Understand the gender equity.

**CO3:** Understand the human rights advocacy.

**CO4:** Understand the concepts of women's status in India

**CO5:** Explain about, what is environmental studies.

**CO6:** Know the values of natural resources.

**CO7:** Participate in conservation and preservation of environment discussion and contributing to the country by protecting.

#### **SYLLABUS**

##### **Unit 1**

##### **Human rights**

**10 hours**

1. Human Rights – Meaning; Universal Declaration of Human Rights 6 hours
2. Human Rights Advocacy: Global Advocacy of Human Rights; Amnesty International and other organization ; People's Union for Civil Liberty (PUCL); Human Rights Commission in India; Minority Commission in India; Remedies against violation of Human Rights in India 10 hours
3. United Nations and Human Rights: Civil and Political Rights: Economic, Social and Cultural Rights 4 hours

**Unit 2****Gender equity** **10 hours**

1. Sex and Gender – Masculinity and Femininity – Patriarchy, Matriarchy, Gender Roles and Attributes, Gender Division of Labour – Gender bias, Gender Stereotypes – Need for Gender Sensitization
2. Women’s Status in India: Important indicators – sex ratio, education, health, nutrition, maternal and infant mortality, work participation rates, political participation
3. Contemporary Women’s issues: Discrimination against girl child; Violence against women; Problems of Health and Nutrition; Women’s Education and gender bias in education; Trafficking of Women; Globalization and impact on women
4. State Initiative on Gender Issues: Constitution rights of women; Laws pertaining to women; National and State Commission for women

**Unit-3****Environmental studies** **10hours**

1. Environment: Components of Environment Concepts of Ecology; Ecological factors: Soil, air, water; Eco System – Pond and Forest as Ecosystem; Human Population Growth
2. Environmental Pollutions: Types of Pollution – a) soil, air, water b) noise and radioactive pollution; Sources of Pollution and their effects; Control measures: Legal and administrative
3. Conservation and Preservation of Environment: Natural resources and their conservation – water, soil and forest; Agencies involved in environmental protection in India; Environmental Movements in India ; Legal and administrative measures for environmental protection

**Examination:**

There shall be an examination for 100 marks at the end of the academic year, which will be conducted by the college

**Recommended Books:****A. Human Rights**

1. S. Davidson: Human Rights, Buckingham, Open University,
2. Nirmal Chiranjivi: Human Rights in India, New Delhi, Oxford University Press

**B. Gender Equity**

1. Usha Sharma (ed): Gender Mainstreaming and Women's Rights, Authorspress, New Delhi, 2004
2. Sushma Yadav and Anil Datta: Gender Issues in India, Radha Publications, New Delhi, 2003

**C. Environmental Studies**

1. N.K. Chakravathy: Environmental Protection and Law, Ashis Publishing House, New Delhi
2. Kumar N: Air Pollution and Environmental Protection, Mittal Publication, New Delhi
3. Erach Baruch: Text Book For Environmental Studies, UGC, New Delhi and Bharati Vidyapeeth Institute Environment Education and Research, Pune
4. Jadhav H & Bhosale, VM: Environmental Protection and Laws, Himalaya Publishing House, New Delhi

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## Course AECC2: Environmental Studies

	Theory marks	Practical marks
SEE	70	-
CIE	30	-

**Preamble:** *This paper is to create awareness regarding a variety of environmental concerns. It attempts to create a pro-environmental attitude and a behavioral pattern in society that is based on creating sustainable lifestyles. Conservation is best brought about through creating a love for nature. It is to expose every college student to the wonders of the Indian wilderness to create new ethics towards conservation.*

**At the end of the semester the student will have acquired:**

**A) Knowledge:**

- Basic concepts of ecosystems and sustainable development.
- Types of natural resources, challenges in conservation of the same.
- Environmental pollution, analysis of causative and measures for remedies.
- National policies regarding environment in global and Indian context.
- Social and national concerns regarding climate change.

**B) Skill:**

- Assessment of complex processes in environment.
- Assessment of diversity of various habitats.
- Study of pollution, qualitative and quantitative methods to measure levels.

**C) Attitude:**

- Comprehension of environmental balance.
- Judicious use of natural resources.
- Awareness on global and Indian Government policies.
- Co-relation between socio-economic aspects with environmental issues.

### COURSE OUTCOMES

*At the end of the course students will be able to...*

**CO1:** Evaluate events of Climate change, global warming, ozone layer depletion, acid rain and its impacts on human communities and agriculture on the basis of case studies

**CO2:** Compare various ecosystems such as forest, grassland, desert and aquatic case studies

**CO3:** Integrate and analyse the various natural and manmade factors that affect forests, environment and tribal populations

**CO4:** Propose alternative sources of energy to meet the growing energy needs of our population

## **THOERY**

**Total Lectures: 32**

### **UNIT I: Introduction to Environmental Studies (2 Lectures)**

- Multidisciplinary nature of environmental studies;
- Scope and importance; Concept of sustainability and sustainable development.

### **UNIT II: Ecosystems (4 Lectures)**

What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystem:

- a) Forest ecosystem
- b) Grassland ecosystem
- c) Desert ecosystem
- d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

### **UNIT III: Natural Resources: Renewable and Non-renewable Resources**

**(5 Lectures)**

- 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).
- Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

### **UNIT IV: Biodiversity and Conservation (5 Lectures)**

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

**UNIT V: Environmental Pollution (6 Lectures)**

- Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks
- Solid waste management: Control measures of urban and industrial waste.
- Pollution case studies.

**UNIT VI : Environmental Policies and Practices (4 Lectures)**

- 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 Convention on Biological Diversity (CBD).
- Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

**UNIT VII : Human Communities and the Environment (3 Lectures)**

- Human population growth: Impacts on environment, human health and welfare.
- Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management: floods, earthquake, cyclones and landslides.
- Environmental movements: Chipko, Silent valley, Bishnois 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).

**UNIT VIII: Field Work (Equal to 3 Lectures)**

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

## 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. McNeill, 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 Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
12. Raven, P.H., Hassenzuhl, 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.



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## Module on Gender Equity

### Specific learning outcomes:

At the end of each unit students will be able to

1. Recognize the causes for the current status of women in our society.
2. Discuss the need for women empowerment and related social issues.
3. Summarize the status of women in primary, secondary and higher education in India.
4. Identify the problems faced by women in various forms of occupation
5. Outline the laws governing women rights in India.

### SYLLABUS: (10 hours)

- Status of Women: Demographic profile of women related statistics
- Women empowerment: concept, need, Issues related to women, programs for girl child, violence against women, laws protecting women rights, case profile studies.
- Importance of women education: School drop-out rate, causes, prevention and steps taken. The access to higher education. Case profile studies.
- Women and work: Problems faced by working women, Maternity leave, POSCO act. Case profile study of a working woman.

### Suggested Teaching-Learning methods

- Lectures / group discussions
- Self-directed learning and Assignments

### Suggested Reading

1. Teacher, Law. (November 2013). Gender Sensitivity and Discrimination Against Women. Retrieved from <https://www.google.co.in/?vref=1>
2. Siddiqi, F.E. & Ranganathan, S. (2001). Handbook on Women and Human Rights: A guide for Social Activists. (Part-I). New Delhi: Kanishka Publishers.
3. Goel, S.L. (2005). Population Policy and Family Welfare. New Delhi: Deep and Deep Publications.
4. Carole Brugeille and Sylvie Cromer (2015) Promoting gender equity through text books- A methodical guide. Publ: United Nations Educational, Scientific and Cultural Organization (UNESCO), Paris

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## Module on Human Health and Environment

### Specific learning outcomes:

At the end of each unit students will be able to

1. Describe the principles of environmental science
2. Define the structure, function and features of ecosystem.
3. Summarize the importance of healthy air, water and soil.
4. Identify the types of pollution, sources, causes and impact on human health.
5. List common aeroallergens and pollution related diseases
6. Describe biological, chemical and physical hazards as determinants of health and disease in human

### SYLLABUS (10 hours):

- **Introduction:** Health and Environmental, atmosphere, hydrosphere, lithosphere and biosphere.
- **Ecosystem:** Structure, functions and its features. Weather and climate change: Global warming and greenhouse effect.
- **Pollution:** Classification of pollution, its sources, cause and their impacts. Types of pollutants and its fate: Eutrophication. Water and soil- types and sources; sewage and waste water treatment and recycling; Noise pollution and its impact on human health.
- **Environmental hazards:** Biological, chemical and physical hazard. Toxic chemicals in the environment: air, water and soil
- **Clean air:** Pesticides and carcinogens in the air, Microfora of atmosphere, Identification of aeroallergens, Air pollution related diseases and allergies.
- **Environmental Ethics and Global imperatives:** Legal/environmental policy and different control measures.

### Suggested Teaching-Learning methods

- Lectures / group discussions
- Self-directed learning and Assignments

### SUGGESTED READINGS

1. A Text Book of Environmental Chemistry & Pollution Control, 5th edition (2014), S. S. Dara and D. D. Mishra; S. Chand and Company Ltd, ISBN: 9788121908832.
2. Environmental Pollution: Health and Toxicology, 2nd edition (2013), S. V. S. Rana; Narosa Publishing House, ISBN: 9788173199141.

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3. Environmental Chemistry: Pollution and Remedial Perspective, 2nd edition (2017), A. V. Salker; Narosa Publishing House, ISBN: 9788184875935.
  4. Wastewater treatment: Concepts and Design Approach, 2nd edition (2013), G. L. Karia, and R.A. Christian; PHI Learning Pvt. Ltd, ISBN: 9788120347359.
  5. Pollutants, Human Health and the Environment: A Risk Based Approach, (2011), J. A. Plant, N. Voulvoulis, K. V. Ragnarsdottir; Wiley-Blackwell, ISBN: 978-0-470- 74261-7.
  6. Environmental Science: A Global Concern, 13th edition (2015), P. C. William and A. C. Mary; McGraw Hill Education, USA, ISBN: 978-9339221263.
  7. Pollution: Causes, Effects and Control, 4th edition (2001), R. M. Harrison; Royal Society of Chemistry, UK, ISBN: 0854046216

**SYLLABUS****Phase I****60 hours****I Introduction****03 hours**

Introduction to the subject – birds eye view; Introduction to biostatistics; Introduction to all other topics

**II Man, Medicine and History of Medicine****06 hours**

Primitive medicine; Dawn of Scientific medicine; Modern Medicine; Health care revolution; Village India and its health part I\*; Village India and its health part II\*

**III Environment and Health****10 hours**

Sanitation of water; Air pollution and prevention; Hazards of noise pollution and control; Measurements of light, Natural and artificial light; Hazards of lighting and control\*; Radiation and its hazards; Control of radiation hazards\*; Housing standards and health; Liquid and solid waste disposal; Insecticides and disinfectants

**IV Humanities General Ethics****15 hours**

Introduction to ethics in health care professionals – Indian Scenario; Professional development; Self awareness & basics of empathy; Effective communication & interpersonal relationship; Anger management; Stress management; Mind map; Emotional Intelligence; Bio-Psycho-Social model

**V Sociology****16 hours**

Community; Societal structure; Culture part I; Culture part II; Acculturation; Family system, cycle, types and functions; Family in health and disease; Social process; Social Pathology; Management and Prevention of Social Pathology; Socio-economic status; Social research; Operational research; Ethics in health practice; Doctor patient relationship\*; Ideal doctor\*

Note: \*Tutorials shall be conducted on these topics

**Practicals – 6 Hrs**

Visit to Hospital- OPD of medicine, Pediatrics and OBG 2 hours

Visit to Primary Health Center (PHC) 2 hours

Visit to Community (community orientation) 2 hours

## Professional Development Including Ethics & Medical Humanities

### Goal:

To enable the Indian Medical Graduate to function professionally and ethically. To train in the fields of Bioethics, Medical Ethics, Health Care Ethics, Clinical Ethics, Research Ethics and other interdisciplinary areas, empowering them with skills necessary for identifying and resolving ethical problems.

### Objectives :

At the end of the programme, the student must demonstrate ability to:

- a. Understand and apply principles of bioethics and law as they apply to medical practice and research.
- b. Understand and apply empathy and other human values to the care of the patient.
- c. Communicate effectively with patients, families, colleagues and other health care professionals.
- d. Understand the strengths and limitations of alternative systems of medicine.
- e. Respond to events and issues in a professional, considerate and humane fashion.
- f. Translate learning from the humanities in order to further his / her professional and personal growth.

### Learning Outcomes:

1. This shall be a longitudinal programme spread across the continuum of the MBBS programme including internship.
2. Learning experiences may include – small group discussions, patient care scenarios, workshop, seminars, role plays, lectures etc.

<b>Content</b>	<b>PHASE I</b>	<b>PHASE II</b>	<b>PHASE -III Part 1</b>	<b>PHASE-III Part 2</b>	<b>Total Hours</b>
<b>A.</b> Orientation to medical profession	04	-	-	-	04
<b>B.</b> General Ethics & Professional Development	15	15	10	10	50
<b>C.</b> Subject Ethics	12	18	12	18	60
	<b>31</b>	<b>33</b>	<b>22</b>	<b>28</b>	<b>114</b>

**PHASE – I** **19 hours****A. Orientation to Medical profession** **4 hours**

Introduction to MBBS course; Orientation to college and hospital; Use of college library; Mentorship Programme; Prevention of ragging; Hostel and campus life

**B. Ethics:** **15 hours**

- a. Introduction to ethics in health care professionals – Indian Scenario. (2hrs)
- b. Self awareness & basics of empathy : (2hrs)
- c. Effective communication & interpersonal relationship: (2hrs)
- d. Anger management : (2hrs)
- e. Stress management (2hrs)
- f. Mind map (2hrs)
- g. Emotional Intelligence (2hrs)
- h. Bio-Psycho-Social model : (1hr)

**Indian Constitution:** **15 hours**

**Course Description:** The course is designed to introduce Indian constitution apropos their professional work.

**Unit I** **7 hours**

- Chapter 1: Significance of Constitution, Role of Constituent Assembly, Salient feature, the Preamble
- Chapter 2: Fundamental Rights and Directive Principles
- Chapter 3: Human Rights, Meaning and Universal Declaration of Human Rights

**Unit II** **8 hours**

- Chapter 1: Special Rights created in the Constitution for Dalits, Backward Classes, Women and children and religious and linguistic minorities.
- Chapter 2: Constitution rights of women-Laws pertaining to women, the National and State Commission for women
- Chapter 3: Discrimination against girl child, Violence against women, Problems of Health and Nutrition, Women’s education and gender bias in education, Globalization and impact on women.

**PHASE – II** **15 hours**

- a. Advanced stress management techniques (2hrs)
- b. Problem solving strategies (2hrs)
- c. Developing Self Awareness skills(2hrs)

- d. Resiliency (2hrs)
- e. Substance Abuse(2hrs)
- f. Mindfulness in everyday life(2hrs)
- g. Effective learning techniques(2hrs)
- h. Building Self Confidence and positive attitude (1hr)

**PHASE – III (Part - I)****10 hours**

- a. Critical thinking (2hrs)
- b. Decision making (2hrs)
- c. Counseling (2hrs)
- d. Building Self Esteem (2hrs)
- e. Cognitive Behavior Therapy (2hrs)

**PHASE – III (Part - II)****10 hours**

- a. Advanced emotional intelligence & Life skills (2hrs)
- b. Macro & Micro Skills In Counselling (2hrs)
- c. Dealing with patients anxiety & stress (2hrs)
- d. Psychological assessment (2hrs)
- c. Patient doctor relationship (2hrs)

**Recommended Texts and Reference Books (Latest Editions)**

1. Indian Constitution: Government Publication
2. D.D. Basu, Introduction to the Constitution of India
3. S. Davidson, Human Rights, Buckingham, Open University
4. Usha Sharma (Ed) Gender Mainstreaming and Women's Rights
5. Parvathy Appaiah, The Constitution of India, Jai Bharath Prakashana, Mangalore

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