



MADHAB CHOUDHURY COLLEGE

মাধব চৌধুরী মহাবিদ্যালয়

ESTD. 1939

**Supporting Documents
for NAAC Self Study Report (SSR)
(3rd Cycle) Period: 2017-2022**

**Prepared and Submitted by
Madhab Choudhury College, Barpeta**

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Criterion 1:	Curricular Aspects
Key Indicator:1.3	Curriculum Enrichment
Metric Number: 1.3.1	Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum




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**** Description of the Courses in the curriculum which integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability**

EDUCATION

1. EDU-HC-1016: PRINCIPLES OF EDUCATION

- Acquaint the students with the sound principles of education.
- Acquaint the students with the important concepts of Education, Curriculum, Democracy, Discipline and Freedom.

2. EDU-HC-1026: PSYCHOLOGICAL FOUNDATIONS OF EDUCATION & LABORATORY PRACTICAL

- Make the students understand the relationship between education and psychology.
- Explain the need of educational psychology in teaching learning process.


3. EDU-HG-2016 : PSYCHOLOGY OF ADOLESCENTS

- Enable the students to understand the period of adolescence.
- Enable the students to understand the significance of the adolescence period in human life.

4. EDU – HC– 3036 : Value and peace education

After completion of this course the learners will be able to:

- Understand the meaning and concept of value, peace, and its importance in human life.
- Understand the meaning and importance of peace education and its relevance at national and international Level.
- Identify different issues in imparting peace education.
- Identify strategies and skills in promoting peace education at institutional level.


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5. EDU-SE- 3014 : PUBLIC SPEAKING SKILL

- Meaning and Importance of Public Speaking.
- Components of Public Speaking: Illustration, Voice modulation, The Power of Pause, Visual Aids, Sense of humour, Articulation

6. EDU-SE-4014 : WRITING BIODATA AND FACING AN INTERVIEW

After completing this course, students will be able to write a bio-data scientifically and will develop confidence to face different types of interview.

7. EDU-HE-5026 : DEVELOPMENTAL PSYCHOLOGY


After completion of this course the learner will be able to:

- Enable the students to understand the basic concepts relating to development.
- Acquaint the students about heredity and environmental factors affecting pre-natal development.
- Enable the students to understand the development aspects during infancy and childhood.
- Enable the students to understand the development aspects of adolescence, importance of adolescence period and problems associated with this stage.

8. EDU-HE-5036 : HUMAN RIGHTS EDUCATION

After completion of this course the learner will be able to:

- Explain the basic concept, nature and scope of human rights.
- Describe the meaning, nature, principles, curriculum and teaching methods of human rights education at different levels of education.
- Know the role of United Nations on human rights.
- Understand enforcement mechanism in India.
- Know the role of advocacy groups.


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9. EDU-HE-6016 : MENTAL HEALTH AND HYGIENE

After completion of this course the learner will be able to:

- Acquaint with the fundamentals and development of mental health and the characteristics of a mentally healthy person.
- Understand the concept and importance of mental hygiene and its relationship with mental health.
- Acquire knowledge about the principles, factors promoting mental health and the role of home, school, and society in maintaining proper mental health.
- Learn the meaning and problem of adjustment and also the different adjustment mechanisms.
- Familiarise with the concept and issues of positive psychology, mental health of women, role of WHO and stress management.


10. EDU-HE-6046 WOMEN AND SOCIETY

- Know the changing role of women in India.
- Understand gender discrimination in Indian society.
- Make the students understand the constitutional provisions for women and their rights.
- Make the students understand women empowerment.
- Develop an awareness and sensitivity towards women.

GEOGRAPHY

11. GGY-HC-4016 : Environmental Geography and Disaster Management

This paper will be useful for students in developing ideas on environmental issues including disasters that geographers usually address.


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ENVIRONMENTAL STUDIES

12. ENV-AE-2014 : Environmental Studies

Compulsory for all students wherein students are introduced to a wide range of issues pertaining specifically to Environmental Studies.

BOTANY

13. BOT – HC– 4026 Plant Ecology and Phytogeography

- Understands the interrelationship between the living world and environment.
- Know the soil profile and role of climate in soil development.
- Understand the concept of ecology and its specification.
- Understands Ecosystem and its components.
- Understands the principles, endemism, biomes and phytogeographical divisions of India.

14. BOT-HE-5016: Natural Resource Management

Students will come to know regarding management of Natural Resource.

15. BOT-1036 : Ecology, Environment and Resource Management

- Knowledge on various components of environment and their interaction, comprehensive knowledge about the niche concept, resource utilization and character displacement.
- Knowledge about the population and community, ecological succession, energy flow and mineral cycling in the environment .
- Knowledge on biodiversity & conservation strategies of RET plants and their environment.



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- Knowledge on environmental issues, pollution and their solutions.
- Knowledge about the origin and evolution of economically important plants, GMO, IPR, INM, IPM.

16. BOT-3036 : Environment and Forest Management

Basic Knowledge on environment and biodiversity conservation applicable in day to day life.

ECONOMICS


17. ECO-HE-6016: ENVIRONMENTAL ECONOMICS

This course focuses on economic causes of environmental problems. In particular, economic principles are applied to environmental questions and their management through various economic institutions, economic incentives and other instruments and policies. Economic implications of environmental policy are also addressed as well as valuation of environmental quality, quantification of environmental damages, tools for evaluation of environmental projects such as cost-benefit analysis and environmental impact assessments. Selected topics on international environmental problems are also discussed.

ANTHROPOLOGY

18. ANT-HC-3026 Human Ecology: Biological & Cultural dimensions

- The knowledge on human adaptation in ecology will be gained.
- The knowledge on urbanization and industrialization in human societies will be achieved.


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19. ANT-HE-5026 Anthropology of Religion, Politics and Economy

- The knowledge on the anthropological theories of religion, economies and political institutions will be gained.
- The knowledge on the interrelationship between religion, economies and political institutions will be achieved.

POLITICAL SCIENCE

20. POL – HC– 3026 : Perspectives on public administration

The course provides an introduction to the discipline of public administration. This paper encompasses public administration in its historical context with an emphasis on the various classical and contemporary administrative theories. The course also explores some of the recent trends, including feminism and ecological conservation and how the call for greater democratization is restructuring public administration. The course will also attempt to provide the students a comprehensive understanding on contemporary administrative developments.

21. POL- SE- 3024 : Youth and Nation-Building

The aim of this course is to highlight the importance of NCC and NSS. The students will be able to get involved with the NCC and the NSS and learn about its activities and undertake tasks under its aegis. The students will also be able to learn about the basics of disaster preparedness and its management.

- To enable students to learn the importance of youth in NSS and NCC, • To make students understand the activities related to NSS and NCC and its importance,
- To make students learn the basics of National Disaster Management and its importance.



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22. POL-HE- 5016 : Human Rights


- To describe the basic concepts of human rights.
- To comprehend different approaches regarding human rights.
- To familiarise the role of UNO in the growth and development of human rights.
- To describe different measures taken for the protection of human rights.

23. POL- HE- 6036: Women, Power and Politics

This course opens up the question of women's agency, taking it beyond 'women's empowerment' and focusing on women as radical social agents. It attempts to question the complicity of social structures and relations in gender inequality. This is extended to cover new forms of precarious work and labour under the new economy. Special attention will be paid to feminism as an approach and outlook. The course is divided into broad units, each of which is divided into three sub-units.

24. POL- HG- 2026 : Feminism: Theory and Practice

- This course on gender studies will open up the structural and institutional basis of patriarchy as well as establish that gender identity and gender injustice cannot be understood in isolation, but only with reference to caste, class and religious community identities.
- Understand the history of feminism and its origins in different parts of the world
- Appreciate the Indian Women's Movement and its role in foregrounding important issues relating to women's position in the society, economy and polity.


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ENGLISH

25. ENG-RG-5016 : Contemporary India: Women and Empowerment

The course aims to:

- Study the position of women in pre-colonial times
- Show how colonial modernity impacts women
- Study the impact of nationalism on women
- Track the Women's movement and Empowerment issues in contemporary India

The learner will be equipped with:

- A historical understanding of the space accorded to women in India through history.
- An understanding of the manner in which the social construction of gender comes about.
- The ability to critique the given and stereotypical notions of such constructions.

PHILOSOPHY

26. PHI-HC-3036 : Ethics

- Able to understand the nature, ability, and scope of ethics.
- Able to know about the theories of punishment from ethical point of view.

CHEMISTRY

27. CHE-RE-6016 : GREEN CHEMISTRY

Apart from introducing learners to the principles of Green chemistry, this course will make them conversant with applications of green chemistry to organic synthesis.



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BOTANY

28. BOT-HE-6016: Industrial and Environmental Microbiology

This paper talks about the various attributes of Microbiology. It talks about the various environmental hazards that can be caused by the microbes, The paper also looks into various aspects of microbial productions and the after effects of the same.



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*** Syllabus of the Courses in the curriculum which integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability

1. EDU-HC-1016: PRINCIPLES OF EDUCATION (Annexure A)

1st SEMESTER (HONOURS) EDU-HC-1016 PRINCIPLES OF EDUCATION Total Marks: 100 (External: 80 and Internal: 20) Credit-6	
Course Objectives: After completion of this course the learner will be able to:	
<ul style="list-style-type: none">• Acquaint the students with the sound principles of education• Acquaint the students with the important concepts of Education, Curriculum, Democracy, Discipline and Freedom.• Develop knowledge about different Aims of Education, various types of Curriculum, Correlation of Studies and Forms of Discipline.• Familiarise the students with democratic idea of modern education.	
Course contents	
Units	Contents
Unit-1	Meaning and Concept of Education <ul style="list-style-type: none">• Meaning, nature and scope of education.• Forms of education- Formal, Informal and Non-formal education and their agencies• School and its functions, relationship between school and society.• Distance and Open Education with special reference to India.• Functions of education.
Unit-2	Aims of education <ul style="list-style-type: none">• Meaning and importance of Aims.• Determinants of aims.• Historical retrospect.• Social Vs Individual aim.• Vocational and Liberal aim• Democratic, Citizenship, Moral and Complete living as an aim of education
Unit-3	Curriculum <ul style="list-style-type: none">• Concept and nature of Curriculum.• Importance of Curriculum.• Types of Curriculum.• Principles of Curriculum Construction• Correlation of Studies—Meaning, Types and importance.• Co-curricular activities- Meaning, Types and importance.
Unit-4	Discipline and Freedom <ul style="list-style-type: none">• Meaning and importance• Discipline Vs. Order• Forms of discipline


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2. EDU-HC-1026: PSYCHOLOGICAL FOUNDATIONS OF EDUCATION & LABORATORY PRACTICAL (Annexure B)

Unit-4	Intelligence, Creativity and personality <ul style="list-style-type: none">• Intelligence-Meaning, nature and theories :Two-factor theory, Group factor theory• Creativity-concept, characteristics• Personality—meaning and nature• Theories of personality-Type and trait theory
Unit-5	Laboratory Practical Recall and Recognition, Trial and Error learning, Span of attention (The three practical will be done in Psychological laboratory, there will be 2 credits for practical class)

Recommended Readings:

- Baron, R. A. (2001). *Psychology*. New Delhi: Prentice Hall.
- Bichler, R. F. and Snowman, J. (1993). *Psychology Applied to Teaching*. Boston: Houghton Mifflin
- Chauhan, S. S. (1996). *Advanced Educational Psychology*. New Delhi: Vikash Publishing House Pvt. Ltd.
- Crow & Crow (1962). *Educational Psychology*. New Delhi: Prentice Hall.
- Guilford, J. P. (1965). *General Psychology*. New Delhi: East West Press Pvt. Ltd.
- Kuppaswamy B. (2013). *Advanced Educational Psychology*, New Delhi: Sterling Publishers Private Limited.
- Mangal, S. K. (2009). *Advanced Educational Psychology*. New Delhi: PHI Learning Private Limited.
- Saikia, L.R. (2018). *Psychological and Physiological Experiments in Education*. Guwahati.
- Skinner, Charles, (2012). *E- Educational Psychology*. New Delhi: Prentice Hall.



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3. EDU-HG-2016 : PSYCHOLOGY OF ADOLESCENTS (Annexure C)

Unit-4	Intelligence, Creativity and personality <ul style="list-style-type: none">• Intelligence-Meaning, nature and theories :Two-factor theory, Group factor theory• Creativity-concept, characteristics• Personality—meaning and nature• Theories of personality-Type and trait theory
Unit-5	Laboratory Practical Recall and Recognition, Trial and Error learning, Span of attention (The three practical will be done in Psychological laboratory, there will be 2 credits for practical class)

Recommended Readings:

- Baron, R. A. (2001). *Psychology*. New Delhi: Prentice Hall.
- Bichler, R. F. and Snowman, J. (1993). *Psychology Applied to Teaching*. Boston: Houghton Mifflin
- Chauhan, S. S. (1996). *Advanced Educational Psychology*. New Delhi: Vikash Publishing House Pvt. Ltd.
- Crow & Crow (1962). *Educational Psychology*. New Delhi: Prentice Hall.
- Guilford, J. P. (1965). *General Psychology*. New Delhi: East West Press Pvt. Ltd.
- Kuppaswamy B. (2013). *Advanced Educational Psychology*, New Delhi: Sterling Publishers Private Limited.
- Mangal, S. K. (2009). *Advanced Educational Psychology*. New Delhi: PHI Learning Private Limited.
- Saikia, L.R. (2018). *Psychological and Physiological Experiments in Education*. Guwahati.
- Skinner, Charles, (2012). *E- Educational Psychology*. New Delhi: Prentice Hall.



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4. EDU – HC– 3036 : Value and peace education (Annexure D)

	<ul style="list-style-type: none"> • Teacher's role in promoting peace. • Concept, need and characteristics of peace education • Curricular contents of peace education at different levels – Primary, Secondary and Higher Education • Strategies and skills in promoting peace education • Relevance of peace education in national and international context
Unit-5	Challenges of Peace education and Role of Different Organisations <ul style="list-style-type: none"> • Challenges of peace education • Role of national and international organizations for promoting peace education – <ul style="list-style-type: none"> - International Institute for Peace(IIP), - UNESCO, - International Peace Bureau (IBP), - UNO - UNICEF, - Global Peace Foundation(GPF), - Mahatma Gandhi Institute of Education for Peace and Sustainable Development.

Recommended Readings:

- Agarwal, J. C. (2005). *Education for Values, Environment and Human rights*. New Delhi: Shipra Publication.
- Chakrabarty, M. (1997). *Value education: Changing Perspective*. New Delhi: Krishna Publishers Distribution.
- Chitakra, M. G. (2007). *Education and Human Values*. New Delhi APH Publishing Corporation.
- Mishra, L. (2009). *Peace education-Framework for teachers*. New Delhi: APH Publishing Corporation.
- Panda, P.K. (2017). *Value Education*. Guwahati: Nivedita Book Distributors.
- Rajput, J. S. (2002). *Human Values in School Education*. New Delhi: Anmol Publication.
- Singh, S. P. (2011). *Education for World Peace*. New Delhi: Discovery Publishing House.
- Suryanarayana, N. V. S. (2017). *Education and Human Value*. Guwahati: Nivedita Book Distributors.



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5. EDU-SE- 3014 : PUBLIC SPEAKING SKILL (Annexure E)

EDU-SEC- 3014 PUBLIC SPEAKING SKILL

Credit – 4

Course Outcome:

After completing this course, students will be able to acquire the capacities of public speaking skill.

In-semester assessment:

Students shall prepare a write-up based on topic selected for speech. No Sessional examination is required for this paper.

Guidelines:

- The students will be trained on public speaking
- Teachers will give demonstrations on public speaking
- It will cover – Style of presentation, voice modulation, body language communication with audience, eye contact
- Topics of speech will be selected by the students discussing with teachers.
- Topic of write-up will be decided by the internal examiner.
- Word limit for the write-up is maximum 2000.
- Evaluation (Public Speaking Skill+Write-up of the speech) will be done by an External Examiner.



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EDU-SE-4014
WRITING BIODATA AND FACING AN INTERVIEW
Credit- 4

Course Outcome:

After completing this course, students will be able to write a biodata scientifically and will develop confidence to face different types of interview.

In-semester assessment:

Students shall write a biodata to face interview. No sessional examination is required for this paper.

Guidelines:

- The teachers will have to guide the students in writing their Biodata, if necessary outside experts may also be invited to train the students in writing the Biodata.
- Teachers will guide the students to differentiate amongst Biodata, Resume and Curriculum Vitae (CV).
- Teachers will explain the style and skill of appearing a formal interview.
- Students will practice mock interview within the classroom.
- Evaluation (Submission of Prepared Biodata+Facing an Interview) will be done by an External Examiner.



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7. EDU-HE-5026 : DEVELOPMENTAL PSYCHOLOGY (Annexure G)

Unit-3	Childhood <ul style="list-style-type: none"> • Characteristics of childhood • Developmental tasks of childhood <ul style="list-style-type: none"> - Physical development of early and late childhood - Emotional development of early and late childhood
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	<ul style="list-style-type: none"> • Influence of family and school in social and personality development in childhood
Unit-4	Adolescence <ul style="list-style-type: none"> • Meaning and definition of adolescence • Need and importance of studying adolescence • Characteristics of adolescence • Developmental tasks of adolescent period • Adolescence – age of transition • Physical changes during adolescence • Intellectual development during adolescence
Unit-5	Social, Emotional and Personality Development of Adolescence <ul style="list-style-type: none"> • Social development during adolescence • Role of family, school and peers in the development of adolescence • Emotionality during adolescence • Personality development during adolescence • Adjustment problems and juvenile delinquency


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8. EDU-HE-5036 : HUMAN RIGHTS EDUCATION (Annexure H)

	<ul style="list-style-type: none">• Role of press and mass media
Unit-5	Human Rights and Marginalised Sections <ul style="list-style-type: none">• Human Rights related to Racial Discrimination• Human Rights related to Religions and Religious Minorities• Human Rights related to Linguistic Minorities• Human Rights related to Communal Minorities• Human Rights related to Refugees• Human Rights related to Aged• Human Rights related Women and Children• Human Rights related to Differently Abled• Human Rights related to Transgender

Recommended Readings:

- Aggarwal, J. C. (2008). *Education in the Emerging Indian Society*. New Delhi: Shipra Publication.
- Chand, Jagdish (2007). *Education for Human Rights*. New Delhi: Anashah Publishing House.
- Deka, Neelotpal (2008). *Human Rights Perspectives and Challenges*. Guwahati: Assam Book Depot.
- Mohanty, J. (2006). *Human Rights Education*. New Delhi: Deep & Deep Publications.
- Naseema, C. (2008). *Human Rights Education Theory and Practice*. New Delhi: Shipra Publications.
- Rao, Digumarti Bhaskara (2004). *Human Rights Education*. New Delhi: Discovery Publication House.



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9. EDU-HE-6016 : MENTAL HEALTH AND HYGIENE (Annexure I)

	Mental Health of Teachers
Unit-4	Preservation of Mental Health and Hygiene <ul style="list-style-type: none">• Positive Psychology – Meaning and Nature• Importance of Positive Psychology• Contribution of WHO on Mental Health• Stress management• Mental Health Care Act, 2017
Unit-5	Mental Health and Yoga <ul style="list-style-type: none">• Concept of Yoga• Importance of Yoga for Physical and Mental Health• Role of Yoga for Personality Development• Role of Yoga for management of Stress• Principles of Yoga for Healthy Living• Pranayama and Meditation for Promoting Mental Health

Recommended Readings:

- Baumgardner, S. And Crother, M. (2009). *Positive Psychology*. New Delhi: Pearson India Education Services Pvt. Ltd.
- Chauhan, S. S. (2007). *Advanced Educational Psychology*. New Delhi: Vikas Publishing House Pvt. Ltd.
- Crow, L.D. and Crow, A. (1951). *Mental Hygiene*. New York: McGraw Hill
- Gururani, G.D. (2006). *Textbook on Mental Health and Hygiene*. New Delhi: Akansha Publishing House.
- Mangal, S. K. (1999). *Essentials of Educational Psychology*. New Delhi: PHI


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10. EDU-HE-6046 : WOMEN AND SOCIETY (Annexure J)

EDU-DSC-6046 WOMEN AND SOCIETY

Total Marks: 100 (External: 80 and Internal: 20)
Credit-6


Course Objectives:

After completion of this course the learner will be able to

- Know the changing role of women in India
- Understand gender discrimination in Indian society
- Make the students understand the constitutional provisions for women and their rights.
- Make the students understand women empowerment
- Develop an awareness and sensitivity towards women

Units	Contents
Unit-1 r/v	Status and role of women <ul style="list-style-type: none"> • Women in ancient and medieval India • Changing role of Women in India • Women's health and related issues • Role of women in family , school and society • Women's role in social and environmental movement
Unit-2	Constitutional provisions and Rights of women <ul style="list-style-type: none"> • Constitutional Provision for equality of Women (Educational and Legal Provisions) • National Policy on Education (1986) on women education • National Council for Women Education • Property Right • National Policy for Empowerment of Women, 2001
Unit-3	Gender inequalities in School and society <ul style="list-style-type: none"> - Family attitude • Gender bias in Textbook • Curricular Choices • Teachers' attitude • Classroom Interaction • Peer Culture • Gender inequality in workplace
Unit-4 p/r	Women Empowerment <ul style="list-style-type: none"> • Concept of women empowerment, importance • Types of women empowerment- Economic, political, Educational , legal • Women entrepreneurship • Barriers of women empowerment • Role of education in women empowerment
Unit-5	The new roles of men and women and its Implications <ul style="list-style-type: none"> • Changes in family patterns • Gender roles in transition

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11. GGY-HC-4016 : Environmental Geography and Disaster Management (Annexure K)

CBCS-based U.G. Course in Geography, 2019

Syllabus of Core Course

Name: Environmental Geography and Disaster Management

Paper Code: GGY-HC-4016

Total Credit: 6 (4+2)

Total Marks: 100

(Theory: 60, Practical: 20 and Internal Assessment: 20)

Course objectives

- This is a core paper which intends to introduce students to geography and environment interface.
- It seeks to develop new insights among students on the relevance of environmental studies from a spatial perspective.

Course outcomes

- This paper will be useful for students in developing ideas on environmental issues including disasters that geographers usually address.
- This paper will be useful for students preparing for different competitive exams including the civil services.

Part I: Theory

Credit: 4 (60 Marks)

(40 Classes of 1 hour each)

1. Environmental Geography: Nature, Scope and Significance (4 Classes)
2. Human-Environment Relationships – Historical progression, Adaptation in different Biomes. (6 Classes)
3. Major Global Environmental Problems: Pollution, Deforestation, Desertification, Global Warming, and Bio-Depletion. (10 Classes)
4. Meaning of Hazard, Disaster, Risk and Vulnerability; Types of hazard/disaster (Natural



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12. ENV-AE-2014: Environmental Studies (Annexure L)

Environmental Studies Syllabus

For Gauhati University BA, B.Com and BSC Course under CBCS Pattern

Ability Enhancement Compulsory Course

Total marks: 100 (External: 80 + Internal: 20)

No. of Credits: 4 No. of hours: 60

(Approved in the Academic Council 08-11-2019)

Unit1: Introduction to Environmental Studies (3 lectures)

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

Unit 2: Ecosystems (8 lectures)

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

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

Unit 3: Natural Resources: Types, Renewable and Non-renewable Resources (8 lectures)


- Land resources: land use change; land degradation, soil erosion and desertification
- Forest resources: Deforestation: Causes and impacts due to mining, Construction of big dams and their effects on forests and people.
- Water resources: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state: Indo-China, Indo-Bangladesh, Cauvery disputes).
- Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, case studies – coal mining, crude oil extraction.

Unit 4: Biodiversity and Conservation (8 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 diversity services: Ecological, economic, social, ethical, aesthetic and informational value.

Unit 5: Environmental Pollution (8 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 – Bharalu river, Deepor Beel, Kolong river


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BOT-HC-4026

Plant Ecology and Phytogeography

Total Lectures : 60 Credits : 6 (Theory - 4, Practical - 2)

9.1 THEORY

Unit 1 : *Introduction*

(4 lectures)

Basic concepts; Levels of organization. Inter-relationships between the living world and the environment, the components and dynamism, homeostasis.

Unit 2 : *Soil*

(8 lectures)

Importance; Origin; Formation; Composition; Physical; Chemical and Biological components; Soil profile; Role of climate in soil development.

Unit 3 : *Water*

(4 lectures)

Importance: States of water in the environment; Atmospheric moisture; Precipitation types (rain, fog, snow, hail, dew); Hydrological Cycle; Water in soil; Water table.



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14. BOT-HE-5016: Natural Resource Management (Annexure N)

BOT-HE-5016

Natural Resource Management

Total Lectures : 60 Credits : 6 (Theory - 4, Practical - 2)

1.1 THEORY

Unit 1 : *Natural resources*

Definition and types.

(2 lectures)

Unit 2 : *Sustainable utilization*

Concept, approaches (economic, ecological and socio-cultural).

(8 lectures)

Unit 3 : *Land*

Utilization (agricultural, pastoral, horticultural, silvicultural); Soil degradation and management.

(8 lectures)

Unit 4 : *Water*

Fresh water (rivers, lakes, groundwater, aquifers, watershed); Marine; Estuarine; Wetlands; Threats and management strategies.

(8 lectures)

Unit 5 : *Biological Resources*

(10 lectures)

Biodiversity-definition and types; Significance; Threats; Management strategies; Bio-



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Unit -IV

Environmental pollution- sources, types of pollutants of various industrial effluents such as pulp and paper mills, oil exploration and refinery, petrochemicals, iron and steel industries, domestic wastes, organic debris, agricultural wastes, pesticides. Effects of pesticides on soil components, residual toxicity and pollution. Global climate change: greenhouse effects, ozone layer depletion, acid rain.

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Unit -V

Origin, evolution, botany, cultivation and uses of (i) Food & beverage (ii) fiber & oil (iii) medicinal and aromatic plants; important timber-yielding plants and NTFPs. Green revolution: Benefits and adverse consequences, innovations for meeting world food demands, GMO, INM, IPM.


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Unit- IV:

Forest Management and Management Systems: Objective and principles; techniques; stand structure and dynamics, sustained yield relation; rotation, normal forest, growing stock; regulation of yield; management of forest plantations, commercial forests, forest cover monitoring. Village Forest Committees, Joint Forest Participatory Management. Agro Forestry, Social Forestry, Urban Forestry; Application of genetic engineering and tissue culture techniques in forest and environment management.

Unit- V:

Forest legislation: History of forest development; Indian Forest Policy of 1894, 1952 and 1990; National Forest Policy, 1988 of People's involvement, Joint Forest Management, Involvement of women; Forestry policies and issues related to land use, timber and non-timber products, sustainable forest management; industrialisation policies; Indian Forest Act 1927; Forest Conservation Act, 1980; Wildlife Protection Act 1972 and their amendments;

Unit- VI:

Case studies on environment and forest management : Case studies on a) Afforestation b) Human animal conflicts and coexistence c) Sustainable forest management with special reference to North-East India.



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17. ECO-HE-6016: ENVIRONMENTAL ECONOMICS (Annexure Q)

ECO-HE-6016: ENVIRONMENTAL ECONOMICS

Course Description

This course focuses on economic causes of environmental problems. In particular, economic principles are applied to environmental questions and their management through various economic institutions, economic incentives and other instruments and policies. Economic implications of environmental policy are also addressed as well as valuation of environmental quality, quantification of environmental damages, tools for evaluation of environmental projects such as cost-benefit analysis and environmental impact assessments. Selected topics on international environmental problems are also discussed.

Course Outline

1. Introduction

Basic concepts: Environment, Ecology, Economy and the ecosystem. Definition and scope of environmental economics, why study environmental economics. Interaction between the environment and the economy, environmental economics and ecological economics, environmental economics and resource economics. Review of microeconomics and welfare economics: the utility function, social choice mechanism, the compensation Principle and social welfare function (concepts only).

2. The Theory of Externalities

Pareto optimality or Pareto efficiency, Externalities: meaning and types of externality, market failure: meaning, market failure in the presence of externalities; market failure and public goods, is environment a public good? Property rights and the coase theorem.

3. The Design and Implementation of Environmental Policy

Environmental Policies: an overview; Nonmarket and market based instruments of Environmental Policy: command and control (CAC) approach, economic instruments like pigovian taxes and effluent fees, tradable permits and mixed instruments. Monitoring and Enforcement: What is monitoring and enforcement? Penalties, cost of abatement. Damages from pollution. Incentives to sources to comply with environmental regulations.



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ANT-HC-3026
Human Ecology: Biological & Cultural dimensions
Credit 6 (Theory: 4; Practical: 2)

COURSE OBJECTIVE: To impart the knowledge about human adaptation in the ecological setting and on urbanization and industrialization process.

COURSE OUTCOME:

- The knowledge on human adaptation in ecology will be gained.
- The knowledge on urbanization and industrialization in human societies will be achieved.

Theory

Biological Dimensions

Biological Dimensions

Unit I: i..Definition and concept of the term ecology, human ecology, ecosensitivity adaptation, acclimation, acclimatization, biotic and abiotic component.

ii. Method of studying ecology

Unit II: Bio-cultural adaptation to environmental stresses: heat, cold and altitude. Homeostasis and thermoregulation. Ecological rules and their applicability among human beings (Gloger's, Allen's and Bergmann's rule).

Unit III: Impact of urbanization and industrialization on Man.

Unit IV: Bio-cultural factors influencing the diseases and nutritional status. Evolution of Human diet.

Cultural Dimensions:

Unit V: Culture as a tool of adaptation. Various modes of human adaptation in our state.


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19. ANT-RE-5016 : Anthropology of Religion, Politics and Economy (Annexure S)

ANTH-RE-5016 ✓

Anthropology of Religion, Politics and Economy

Credit:6 (Theory: 4; Practical:2)

COURSE OBJECTIVE: To impart the knowledge of anthropological theories of religion, the economics and political institutions, along with their interrelationship.

COURSE OUTCOME:

- The knowledge on the anthropological theories of religion, economics and political institutions will be gained.
- The knowledge on the interrelationship between religion, economics and political institutions will be achieved.

Theory

Unit I: Anthropological approaches to understand religion- magic, animism, animatism, totemism, naturism; witchcraft and sorcery; Religious specialists: shaman, priests, mystics; Overview of Anthropological Theories of Religion; Religion as the sacrality of ecological adaptation and socialness

Unit II: Economic institutions: principles of production, distribution, and consumption in simple and complex societies; critical examination of relationship between economy and society through neo-classical, substantivist, and neo-marxist approaches, various forms of exchange: barter, trade and market; Forms of currencies; reciprocities: generalized, balanced and negative.

Unit III: Political institutions: concepts of power and authority; types of authority; state and Stateless societies; law and justice in simple and complex societies; the prospects for democracy and tolerance among and within the world's diverse civilizations; the meaning and sources of identity in complex contemporary societies; the origins of modern politics, its institutions, and cultures, both Western and non-Western

Unit IV: Interrelationship between religion, politics and economy; religious conversion and movements, emergence of new religious sects in the global order.

Practical

1. Case study of any of the social institute (religion, economic, political) with respect to culture perspective

Suggested Readings:

1. Durkheim E. (1986). The elementary forms of the religious life, a study in religious sociology. New York: Macmillan.
2. Benedict A. (2006). Imagined Communities: Reflections on the Origin and Spread of Nationalism. Verso
3. Gledhill J. (2000). Power and Its Disguises: Anthropological Perspectives on Politics. 2nd ed. London: Pluto Press.
4. Ellis F. (2000). A framework for livelihood analysis. In Rural Livelihoods and Diversity in Developing Countries . Oxford: Oxford University Press.

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POL HC 3026 Perspectives on Public Administration

Objective: The course provides an introduction to the discipline of public administration. This paper encompasses public administration in its historical context with an emphasis on the various classical and contemporary administrative theories. The course also explores some of the recent trends, including feminism and ecological conservation and how the call for greater democratization is restructuring public administration. The course will also attempt to provide the students a comprehensive understanding on contemporary administrative developments.

Course Outcomes:

- To enable students to learn the basic concepts related to public administration and its importance,
- To make students learn the major theories of public administration,
- To enable students to have an understanding of public policy and its formulation,
- To familiarize students with the major approaches and recent debates related to field of public administration.

I. Public Administration as a Discipline (15 lectures)

- Meaning, Dimensions and Significance of the Discipline
- Public and Private Administration
- Evolution of Public Administration

II. Theoretical Perspectives (25 lectures)

Classical Theories

- Scientific management (F.W.Taylor)
- Administrative Management (Gullick and Urwick)
- Ideal-type bureaucracy (Max Weber)

Neo-Classical Theory

- Human relations theory (Elton Mayo)

Contemporary Theory

- Ecological approach (Ernst Dittgen)



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21. POL-SE- 3024 : Youth and Nation-Building (Annexure U)

POL SE 3024 Youth and Nation-Building

Course objective:

The aim of this course is to highlight the importance of NCC and NSS. The students will be able to get involved with the NCC and the NSS and learn about its activities and undertake tasks under its aegis. The students will also be able to learn about the basics of disaster preparedness and its management.

Course Outcomes:

- To enable students to learn the importance of youth in NSS and NCC,
- To make students understand the activities related to NSS and NCC and its importance,
- To make students learn the basics of National Disaster Management and its importance.

Unit –I: Youth and National Service Scheme (NSS) (16 lectures)

- NSS: Organisation and Objectives
- NSS: Activities and Benefits
- NSS and its contribution

Unit-II: Youth and the National Cadet Corps (NCC) (16 lectures)

- Aims and objectives of the NCC
- Organisation and Training
- NCC and its benefits

Unit-III: Youth and National Disaster Management (16 lectures)

- Disaster Management Plan 2016-an overview
- National Disaster Management Authority
- Community involvement and preparedness: Assam

Modalities for Practical Component: Project Report/Field Study Report based on any activity i.e. awareness programme/campaign. group discussion. disaster management



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DISCIPLINE SPECIFIC ELECTIVE

POL HE 5016 Human Rights

Course Outcomes:

- To describe the basic concepts of human rights
- To comprehend different approaches regarding human rights
- To familiarise the role of UNO in the growth and development of human rights
- To describe different measures taken for the protection of human rights

Unit I: Introduction to Human Rights (14 lectures)

- Concept of Human Rights – meaning, nature, importance
- Growth and evolution of Human Rights
- Classification- three generation of Human Rights

Unit II: Approaches and perspectives (13 lectures)

- Universal Approach
- Cultural Relativist Approach
- Marxian Perspective

Unit III: Human Rights and UNO (16 lectures)

- International Bill of Rights – UDHR, ICCPR, ICESCR, Optional Protocols
- Conventions Convention on Elimination of All Forms of Discrimination Against Women, Convention on Rights of the Child
- Human Rights Council

Unit IV: Human rights and the role of NGOs (12 lectures)

- Amnesty International
- Human Rights Watch
- International Committee of the Red Cross



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23. POL- HE- 6036: Women, Power and Politics (Annexure W)

POL HE 6036 Women, Power and Politics

Course objective: This course opens up the question of women's agency, taking it beyond 'women's empowerment' and focusing on women as radical social agents. It attempts to question the complicity of social structures and relations in gender inequality. This is extended to cover new forms of precarious work and labour under the new economy. Special attention will be paid to feminism as an approach and outlook. The course is divided into broad units, each of which is divided into three sub-units.

Course Outcomes:

- To explain key concepts that offers an understanding of gender inequality.
- To appraise the historical evolution of the Women's movement in India and issues addressed by it.
- To underline the contemporary issues that affect women's participation in politics

I. Groundings (14 lectures)

Patriarchy

- a. Sex-Gender Debates
- b. Public and Private
- c. Power

Domains of Patriarchy

- a. Family
- b. Community
- c. State

II. Feminism (12 lectures)

Different Perspectives: Liberal, Marxist & Radical

III. Movements and Issues (12 lectures)

History of the Women's Movement in India

Violence against women:



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POL HG 2026 Feminism: Theory and Practice

Course Objective: The aim of the course is to explain contemporary debates on feminism and the history of feminist struggles. The course begins with a discussion on construction of gender and an understanding of complexity of patriarchy and goes on to analyze theoretical debates within feminism. Part II of the paper covers history of feminism in the west, socialist societies and in anti-colonial struggles. Part III focuses a gendered analysis of Indian society, economy and polity with a view to understanding the structures of gender inequalities. And the last section aims to understand the issues with which contemporary Indian women's movements are engaged with.

Course outcomes:

- This course on gender studies will open up the structural and institutional basis of patriarchy as well as establish that gender identity and gender injustice cannot be understood in isolation, but only with reference to caste, class and religious community identities.
- Understand the history of feminism and its origins in different parts of the world
- Appreciate the Indian Women's Movement and its role in foregrounding important issues relating to women's position in the society, economy and polity

I. Approaches to understanding Patriarchy (22 Lectures)

- Feminist theorising of the sex/gender distinction.
- Biologism versus social constructivism
- Understanding Patriarchy and Feminism
- Liberal, Socialist, Marxist and Radical feminism

II. History of Feminism (22 Lectures)

- Origins of Feminism in the West: France, Britain and United States of America
- Feminism in the Socialist Countries: China, Cuba and erstwhile USSR
- Feminist issues and women's participation in anti-colonial and national liberation



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25. ENG-RG-5016 : Contemporary India: Women and Empowerment (Annexure Y)

ENG-RG-5016

Contemporary India: Women and Empowerment

Credits: 5 (Theory) + 1 (Tutorial) =6

Marks: 100 (80+20)

Course Objectives/Course Description: This course will look at Women's Issues in India in the light of the various historical and social contexts. It will trace the evolution of Women's Empowerment both in terms of policy and discourse in postcolonial, contemporary India and at the same time try to locate the women's position in earlier times.

The course aims to:

- Study the position of women in pre-colonial times
- Show how colonial modernity impacts women
- Study the impact of nationalism on women
- Track the Women's movement and Empowerment issues in contemporary India

Course Outcome:

The learner will be equipped with:

- A historical understanding of the space accorded to women in India through history
- An understanding of the manner in which the social construction of gender comes about.
- The ability to critique the given and stereotypical notions of such constructions.



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26. PHI-HC-3036 : Ethics (Annexure Z)

Semester III PHI-HC-3036 Ethics

Unit I

Nature, Scope and Utility of study of Ethics
Object of Moral Judgement, Moral Obligation
Postulates of Morality

Unit II

Virtue Ethics: Aristotle
Deontological Ethics: Kant
Utilitarianism: Bentham, Mill

Unit III

Theories of Punishment
Professional Ethics
Environmental Ethics

Unit IV

Law of Karma, Varṇa and Aśrama Dharma, Puruṣārtha
Buddhist Pañcaśīla; Brahmvihāra
Jaina Triratna, Aṇuvrata and Mahāvratā

Books Recommended:

Dasgupta, S.N.:	<i>A History of Indian Philosophy</i>
Frankenna, Williams.:	<i>Ethics, Prentice Hall of India</i>
Hiriyana, M.:	<i>Outlines of Indian Philosophy</i>
Hudson, W.D:	<i>Modern Moral Philosophy</i>
Lillie, William.:	<i>An Introduction to Ethics</i>



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CHE-RE-6016: GREEN CHEMISTRY

(Credits: Theory-04, Lab -02)

Theory: 60 Lectures

***Course Objective:** The learners will be taught about the emerging discipline of green chemistry particularly to differentiate as to how the principles of green chemistry may be applied to organic synthesis.*

***Learning Outcome:** Apart from introducing learners to the principles of green chemistry, this course will make them conversant with applications of green chemistry to organic synthesis. Students will be prepared for taking up entry level jobs in the chemical industry. They also will have the option of studying further in the area.*

Introduction to Green Chemistry

What is Green Chemistry? Need for Green Chemistry. Goals of Green Chemistry.

Limitations/ Obstacles in the pursuit of the goals of Green Chemistry.

(4 Lectures)

Principles of Green Chemistry and Designing a Chemical synthesis

Twelve principles of Green Chemistry with their explanations and examples; Designing a Green Synthesis using these principles; Prevention of Waste/ byproducts; maximum incorporation of the materials used in the process into the final products (Atom Economy); prevention/ minimization of hazardous/ toxic products; designing safer chemicals – different basic approaches to do so; selection of appropriate auxiliary substances (solvents, separation agents), green solvents, solventless processes, immobilized solvents and ionic liquids; energy requirements for reactions - use of microwaves, ultrasonic energy; selection of starting materials; avoidance of unnecessary derivatization – careful use of blocking/protecting groups; use of catalytic reagents (wherever possible) in preference to stoichiometric reagents; designing of biodegradable products; prevention of chemical accidents; strengthening/ development of analytical techniques to prevent and minimize the generation of hazardous substances in chemical processes.

(24 Lectures)



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28. BOT-HE-6016: Industrial and Environmental Microbiology (Annexure AB)

3

BOT-HE-6016

Industrial and Environmental Microbiology

Total Lectures : 60 Credits : 6 (Theory - 4, Practical - 2)

3.1 THEORY

MS **Unit 1 : Scope of microbes in industry and environment** (6 lectures)

MS **Unit 2 : Bioreactors/Fermenters and fermentation processes** (12 lectures)

Solid-state and liquid-state (stationary and submerged) fermentations; Batch and continuous fermentations. Components of a typical bioreactor. Types of bioreactors-laboratory, pilotscale and production fermenters: Constantly stirred tank fermenter, tower fermenter, fixed bed and fluidized bed bioreactors and air-lift fermenter.

A visit to any educational institute/ industry to see an industrial fermenter, and other downstream processing operations.

EA **Unit 3: Microbial production of industrial products** (12 lectures)

Microorganisms involved, media, fermentation conditions, downstream processing and uses: Filtration, centrifugation, cell disruption, solvent extraction, precipitation and ultrafiltration, lyophilization, spray drying; Hands on microbial fermentations for the production and estimation (qualitative and quantitative) of Enzyme: amylase or lipase activity, Organic acid (citric acid or glutamic acid), alcohol (Ethanol) and antibiotic (Penicillin)

MS **Unit 4: Microbial enzymes of industrial interest and enzyme immobilization** (8 lectures)

Microorganisms for industrial applications and hands on screening microorganisms for casein hydrolysis; starch hydrolysis; cellulose hydrolysis. Methods of immobilization, advantages and applications of immobilization, large scale applications of immobilized enzymes (glucose isomerase and penicillin acylase).



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Unit II

EA Control of Microorganisms: Physical, chemical and biological; Antibiotics, mode of action of antibiotics, multidrug resistance in bacteria, principles of microbial assay.

Unit III

EA Immunology: Humoral and cell mediated immunity; Specific and non-specific immunity; Immune responses, Primary and secondary lymphoid organs; Antigens; B and T cells and Macrophages; Major histocompatibility complex (MHC); Antigen processing and presentation; Antibodies, synthesis of antibody and secretion;

Unit IV

MS Molecular basis of antibody diversity; Polyclonal and monoclonal antibody; Antigen-antibody reaction; Hyper sensitivity; Autoimmunity; Hybridoma technique, advantages and application of monoclonal antibodies, Immunodiagnosics

Unit V

MS Cancer biology: Mutagens and carcinogens, tumor cells and genetic abnormalities, genetic rearrangements in progenitor cells, mechanism of oncogene activation, tumor suppressor genes, cancer and cell cycle, virus induced cancer, metastasis, interaction of cancer cells with normal cells, apoptosis, therapeutic interventions of uncontrolled cell growth, cancer treatments

BOT 4195

Dissertation

Dissertation = 50

Viva-Voce = 30

Internal Assessment = 20

Total = 100

BOT 4204

- EA 1. Isolation of specific microorganisms using specific media
- ED 2. Staining of bacterial spore, capsule and flagella
- ED 3. Bacteriological water analysis
4. Isolation of anaerobic bacteria MS
- EA 5. Methylene blue reductase/ Phosphatase test for milk
6. Detection of organic acids produced by fungi by paper chromatography method MS
7. Assessment of antimicrobial activity of microbes against plant pathogens MS
- EA 8. Biochemical tests (phosphatase, urease, nitrate reductase, cellulase) for the activity of microbes
9. Fermentation of carbohydrates MS
- EA 10. Study of microflora from the rhizosphere of agriculturally important crops

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