

University of Mumbai

वेबसाईट - mu.ac.in

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विद्याविषयक प्राधिकरणे
सभा आणि सेवा विभाग (ए.ए.एम.एस)
रूम नं. १२८ एम.जी.रोड, फोर्ट,
मुंबई - ४०० ०३२
टेलिफोन नं. - ०२२ - ६८३२००३३

(नॅक पुनर्मूल्यांकनाद्वारे ३.६५ (सी.जी.पी.ए.) सह अ++ श्रेणी
विद्यापीठ अनुदान आयोगाद्वारे श्रेणी १ विद्यापीठ दर्जा)


क्र.वि.प्रा.स.से./आयसीडी/२०२५-२६/३७

दिनांक : २७ मे, २०२५

परिपत्रक:-

सर्व प्राचार्य/संचालक, संलग्नित महाविद्यालये/संस्था, विद्यापीठ शैक्षणिक विभागांचे संचालक/ विभाग प्रमुख यांना कळविण्यात येते की, राष्ट्रीय शैक्षणिक धोरण २०२० च्या अमंलबजावणीच्या अनुषंगाने शैक्षणिक वर्ष २०२५-२६ पासून पदवी व पदव्युत्तर अभ्यासक्रम विद्यापरिषदेच्या दिनांक २८ मार्च २०२५ व २० मे, २०२५ च्या बैठकीमध्ये मंजूर झालेले सर्व अभ्यासक्रम मुंबई विद्यापीठाच्या www.mu.ac.in या संकेत स्थळावर NEP २०२० या टॅब वर उपलब्ध करण्यात आलेले आहेत.

मुंबई - ४०० ०३२
२७ मे, २०२५


(डॉ. प्रसाद कारंडे)
कुलसचिव

Copy forwarded for information and necessary action to :-	
1	The Deputy Registrar, (Admissions, Enrolment, Eligibility and Migration Dept)(AEM), dr@eligi.mu.ac.in
2	The Deputy Registrar, Result unit, Vidyanagari drresults@exam.mu.ac.in
3	The Deputy Registrar, Marks and Certificate Unit,. Vidyanagari dr.verification@mu.ac.in
4	The Deputy Registrar, Appointment Unit, Vidyanagari dr.appointment@exam.mu.ac.in
5	The Deputy Registrar, CAP Unit, Vidyanagari cap.exam@mu.ac.in
6	The Deputy Registrar, College Affiliations & Development Department (CAD), deputyregistrar.uni@gmail.com
7	The Deputy Registrar, PRO, Fort, (Publication Section), Pro@mu.ac.in
8	The Deputy Registrar, Executive Authorities Section (EA) eau120@fort.mu.ac.in He is requested to treat this as action taken report on the concerned resolution adopted by the Academic Council referred to the above circular.
9	The Deputy Registrar, Research Administration & Promotion Cell (RAPC), rapc@mu.ac.in
10	The Deputy Registrar, Academic Appointments & Quality Assurance (AAQA) dy.registrar.tau.fort.mu.ac.in ar.tau@fort.mu.ac.in
11	The Deputy Registrar, College Teachers Approval Unit (CTA), concolsection@gmail.com
12	The Deputy Registrars, Finance & Accounts Section, fort draccounts@fort.mu.ac.in
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18	Director, Innovation, Incubation and Linkages, Dr. Sachin Laddha pinkumanno@gmail.com
19	Director, Department of Lifelong Learning and Extension (DLLE), dlleuniversityofmumbai@gmail.com

Copy for information :-	
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2	P.A to Pro-Vice-Chancellor pvc@fort.mu.ac.in
3	P.A to Registrar, registrar@fort.mu.ac.in
4	P.A to all Deans of all Faculties
5	P.A to Finance & Account Officers, (F & A.O), camu@accounts.mu.ac.in

To,

1	The Chairman, Board of Deans pvc@fort.mu.ac.in
2	<p>Faculty of Humanities,</p> <p>Offg. Dean</p> <p>1. Prof.Anil Singh Dranilsingh129@gmail.com</p> <p>Offg. Associate Dean</p> <p>2. Prof.Manisha Karne mkarne@economics.mu.ac.in</p> <p>3. Dr.Suchitra Naik Naiksuchitra27@gmail.com</p> <p>Faculty of Commerce & Management,</p> <p>Offg. Dean,</p> <p>1 Prin.Ravindra Bambardekar principal@model-college.edu.in</p> <p>Offg. Associate Dean</p> <p>2. Dr.Kavita Laghate kavitalaghate@jbims.mu.ac.in</p> <p>3. Dr.Ravikant Balkrishna Sangurde Ravikant.s.@somaiya.edu</p> <p>4. Prin.Kishori Bhagat kishoribhagat@rediffmail.com</p>

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3	Chairman, Board of Studies,
4	The Director, Board of Examinations and Evaluation, dboee@exam.mu.ac.in
5	The Director, Board of Students Development, dsd@mu.ac.in DSW direcotr@dsw.mu.ac.in
6	The Director, Department of Information & Communication Technology, director.dict@mu.ac.in

AC – 28/03/2025
Item No. – 7.3 (N)

As Per NEP 2020

University of Mumbai



Syllabus for Major Vertical – 1 & 4

Name of the Programme – Bachelor of Management Studies
(Environmental Management & Economics)

Faulty of Commerce & Management

Board of Studies in Bachelor of Management Studies

U.G. Second Year Programme	Exit Degree	U.G. Diploma in Environmental Management & Economics
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Semester	III & IV
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From the Academic Year	2025-26
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University of Mumbai



(As per NEP 2020)

Sr. No.	Heading	Particulars
1	Title of program O: _____	BMS (Environmental Management & Economics)
2	Exit Degree	U.G. Diploma in Environmental Management & Economics
3	Scheme of Examination R: _____	NEP 40% Internal 60% External, Semester End Examination Individual Passing in Internal and External Examination
4	Standards of Passing R: _____	40%
5	Credit Structure R. CU-570C R. CU-570D	Attached herewith
6	Semesters	Sem. III & IV
7	Program Academic Level	5.00
8	Pattern	Semester
9	Status	New
10	To be implemented from Academic Year	2025-26

Sd/-

Sign of the BOS
Chairman
Dr. Kanchan Fulmali
Board of Studies in
BMS

Sd/-

Sign of the
Offg. Associate Dean
Prin. Kishori Bhagat
Faculty of Commerce
& Management

Sd/-

Sign of the
Offg. Associate Dean
Prof. Kavita Laghate
Faculty of
Commerce &
Management

Sd/-

Sign of the
Offg. Dean
Prin. Ravindra
Bambardekar
Faculty of
Commerce &
Management

Under Graduate Diploma in Environmental Management & Economics
Credit Structure (Sem. III & IV)

R. CU-570C											
Level	Semester	Major		Minor	OE	VSC, SEC (VSEC)	AEC, VEC, IKS	OJT, FP, CEP, CC, RP	Cum. Cr. / Sem.	Degree/ Cum. Cr.	
		Mandatory	Electives								
5.0	III	Environmental Economics (4)		4	2	Research Methods in Environmental Management (2)	AEC:2	FP: 2 CC:2	22	UG Diploma 88	
	R. CU-570D										
	IV	Environmental Pollution Management (4)		4	2	Environmental Safety, Health & Management (2)	AEC:2	CEP: 2 CC:2	22		
	Cum Cr.	28		10	12	6+6	8+4+2	8+4	88		
Exit option; Award of UG Diploma in Major and Minor with 80-88 credits and an additional 4 credits core NSQF course/ Internship OR Continue with Major and Minor											

[Abbreviation - OE – Open Electives, VSC – Vocation Skill Course, SEC – Skill Enhancement Course, (VSEC), AEC – Ability Enhancement Course, VEC – Value Education Course, IKS – Indian Knowledge System, OJT – on Job Training, FP – Field Project, CEP – Continuing Education Program, CC – Co-Curricular, RP – Research Project]

Sem - III

Vertical – 1 Major

Syllabus

BMS (Environmental Management & Economics)

(Sem.- III)

Title of Paper: Environmental Economics

Sr. No.	Heading	Particulars
1	Description the course:	In the changing dynamics of business environmental forces, Environment Management helps explore the intricate balance between human activities and the natural world. Throughout this course, learners will delve into strategies for preserving ecosystems, mitigating environmental impacts, and promoting sustainability. From understanding environmental regulations to implementing conservation practices, students will develop the skills and knowledge necessary to become effective stewards of our planet. This will enable the learners to embark into the journey to safeguard our environment for future generations.
2	Vertical:	Major
3	Type:	Theory
4	Credit:	4 credits
5	Hours Allotted:	60 Hours
6	Marks Allotted:	100 Marks
7	Course Objectives:	<ul style="list-style-type: none"> a. To enable learners to understand the basic concepts and functions of environmental economics b. To explore and understand the changing economic environment of business c. To provide the learner with the theoretical perspective of management and its practical applications.
8	Course Outcomes:	<p>CO1) Learner will remember & understand the basic concepts of the economic environment.</p> <p>CO2) Learners will be able to apply & strategically analyse the interlinkage between economic development and environment.</p> <p>CO3) Evaluate & create a roadmap to derive concrete economic solutions to environmental problems</p>

9	<p>Modules:-</p> <p>Module 1: <u>Introduction to the Environmental Economics.</u></p> <p><u>Unit I- Environment and Economy</u></p> <p>Meaning, nature and scope of environmental economics, Significance of Environmental Economics, Relationship between economy and environment, Kuznets curve, Coase theorem</p> <p><u>Unit II- Valuation methods and environmental standards</u></p> <p>Economics value of natural resources, Environmental valuation methods: Substitution, Hedonic and Travel Cost method. Contingent Valuation Method. Environmental Standards: Meaning, Types, Advantages and Limitations.</p> <p>Module 2: <u>An Overview of Social Choices, Market Failures, and Environmental Agreements</u></p> <p><u>Unit III- Social Choices and Market Failure</u></p> <p>Social Choice: Individual Preferences Regarding Environmental Protection; Biocentrism; Anthropocentrism; Pareto Criterion; Arrows Impossibility Theorem. Efficiency and Markets: Efficiency in the Exchange of Goods and Bads; Efficiency in Production; First Welfare Theorem; Second Welfare Theorem; Consumer and Producer Surplus; Cost Benefit Analysis</p> <p><u>Unit IV- Environmental Crises and Global Agreements</u></p> <p>Environmental crises: Meaning, Types, Causes, Solution. Energy crisis in India and measures taken to tackle the situation. Global Environmental Agreements: SDG goals, Paris Agreement, Montreal Protocol, Ramsar Convention.</p>									
10	<p>Reference Books:</p> <p>1) <i>Dornbusch R, Fischer and Startz – “Macro Economics”, (Tata McGraw Hill).</i></p> <p>2) <i>Richard T Froyen – “Macro Economics”, (Pearson Education).</i></p> <p>3) <i>Mankiw N G – “Macro Economics”, (Worth Publishers).</i></p> <p>4) <i>David A. Anderson – “Environmental Economics and Natural Resource Management”</i></p> <p>5) <i>Scott J Callan, Janet M Thomas – “Environmental Economics and Management: Theory, Policy and Applications”</i></p>									
11	<p>Internal Continuous Assessment: 40%</p>	<p>External, Semester End Examination 60% Individual Passing in Internal and External Examination</p>								
12	<p>Internal Paper Pattern (40 Marks)</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 70%;">1. Project Presentation OR Case Study writing</td> <td style="text-align: right;">10 Marks</td> </tr> <tr> <td>2. Quiz OR Group discussion</td> <td style="text-align: right;">10 Marks</td> </tr> <tr> <td>3. Class Test (Mandatory) with objectives</td> <td style="text-align: right;">20 Marks</td> </tr> <tr> <td colspan="2" style="text-align: center; border-top: 1px solid black;"> <p>Total 40 Marks</p> </td> </tr> </table>		1. Project Presentation OR Case Study writing	10 Marks	2. Quiz OR Group discussion	10 Marks	3. Class Test (Mandatory) with objectives	20 Marks	<p>Total 40 Marks</p>	
1. Project Presentation OR Case Study writing	10 Marks									
2. Quiz OR Group discussion	10 Marks									
3. Class Test (Mandatory) with objectives	20 Marks									
<p>Total 40 Marks</p>										

QUESTION PAPER PATTERN

(External and Internal)

Paper Pattern **4 Credits** **(Total 100 Marks)**

Internal = 40 Marks

External = 60 Marks

Internal Paper Pattern **(40 Marks)**

- | | | |
|---|---------------------------|----------|
| 1. Case Study writing OR Assignment | } any two (10 Marks each) | 20 Marks |
| 2. Quiz OR Group discussion OR Role Playing | | |
| 3. Project Presentation OR Research Paper | | |
| 4. Class Test - (Mandatory) with Objective questions | | 20 Marks |

Total **40 Marks**

External Paper Pattern **(60 Marks)**

External Paper Pattern **(60 Marks)**

Write any **FOUR** questions from the following

Q1. Answer the following 15 marks

A

B

Q2. Answer the following 15 Marks

A

B

Q3. Answer the following 15 Marks

A

B

Q4. Answer the following 15 marks

A

B

Q5. Answer the following 15 Marks

A

B

Q6. Answer the following 15 Marks

A

B

BMS (Environmental Management & Economics) **(Sem.- III)**

Title of Paper: Climate Science

Sr. No.	Heading	Particulars
1	Description the course:	In the changing dynamics of business environmental forces, Environment Management helps explore the intricate balance between human activities and the natural world. Throughout this course, learners will delve into strategies for preserving ecosystems, mitigating environmental impacts, and promoting sustainability. From understanding environmental regulations to implementing conservation practices, students will develop the skills and knowledge necessary to become effective stewards of our planet. This will enable the learners to embark into the journey to safeguard our environment for future generations.
2	Vertical:	Major
3	Type:	Theory
4	Credit:	4 credits
5	Hours Allotted:	60 Hours
6	Marks Allotted:	100 Marks
7	Course Objectives: <ul style="list-style-type: none">a. To enable learners to understand the basic concepts of climate sciences.b. To understand how human activities contribute to climate change and how to reduce their impact.c. To help learners understand various mechanisms for climate mitigation strategies.	
8	Course Outcomes: <p>CO1) Students learn the fundamentals of climate change science, including the expected consequences and the role of adaptation.</p> <p>CO2) Students learn the physical basis of the natural greenhouse effect, and how human activities increase emissions of greenhouse gases.</p> <p>C03) Students are sensitized towards the global issues of Climate change and they can contribute towards a better environmental conscious citizen.</p>	

9	Modules:-
Module 1: <u>Earth & Meteorology</u>	
UNIT-I: Earth & It's Atmosphere	
<ul style="list-style-type: none"> a. Formation, composition of Earth's atmosphere, temperature profile of the atmosphere b. Laps rates-Temperature inversion- effects of inversion on pollution dispersion. c. Role of ozone in environment-ozone layer-ozone depleting gases 	
UNIT-II: Meteorology	
<ul style="list-style-type: none"> a. Definition of weather and climate, meteorology and climatology. b. Greenhouse gases and its sources & enhanced greenhouse gas effects, Causes and effects of global warming 	
Module 2: <u>Anthropogenic activities & Mitigation</u>	
UNIT-III: Anthropogenic activities	
<ul style="list-style-type: none"> a. Anthropogenic activities responsible for climate change: Source activities - Burning of fossil fuel, types of Fossil fuels. b. Industrial activity, Urbanization, Agriculture, transportation, waste generation 	
UNIT-IV: Mitigation	
<ul style="list-style-type: none"> a. Mitigation Measures- Cleaner production-alternative fuel measures b. Kyoto Protocol c. Intergovernmental Panel on Climate change (IPCC) 	
10	Reference Books: <ol style="list-style-type: none"> 1. Annon 1996. Climate change 1995: Adaptation and mitigation of climate change-Scientific 2. Technical Analysis. Cambridge University Press, Cambridge. Annon. 2001.Intergovernmental Panel on Climate change (IPCC) Climate change 2001. 3. Third Assessment Report (Volume I). Cambridge University Press, Cambridge Annon.2005. 4. World Health Organization. Climate and Health. Fact sheet. July. Gosain, A.K. and Rao,S. 2003. 5. Climate change and India: Vulnerability Assessment and Adaptation. Eds. Shukla,P.R. Universities Press Pvt. Ltd.Hyderabad. pp462 6. Houghton,J. 2005. Global warming: The Complete Briefing. Cambridge: Cambridge University Press.Cambridge. 7. Saha,T.K. 2008. Ecology and Environmental Biology. Books and Allied (P) Ltd. Kokata. 8. Lakshmipathy,M., S.R.Ramanan, R.Sathyanathan and J.S.Sudarsahn. 2009. Proceedings of the National Conference on Effect of climate change and sustainable resource management. SRM University, Kattankallathur.

11	Internal Continuous Assessment: 40%	External, Semester End Examination 60% Individual Passing in Internal and External Examination
12	Internal Paper Pattern (40 Marks) <ol style="list-style-type: none"> 1. Project Presentation OR Case Study writing 2. Quiz OR Group discussion 3. Class Test (Mandatory) with objectives <hr style="width: 80%; margin-left: 0;"/> <p style="text-align: right;">Total</p>	10 Marks 10 Marks 20 Marks 40 Marks

QUESTION PAPER PATTERN (External and Internal)

Paper Pattern 4 Credits (Total 100 Marks)

Internal = 40 Marks

External = 60 Marks

Internal Paper Pattern (40 Marks)

1. Case Study writing **OR** Assignment
2. Quiz **OR** Group discussion **OR** Role Playing
3. Project Presentation **OR** Research Paper

} any two (10 Marks each) 20 Marks

4. Class Test - (Mandatory) with Objective questions 20 Marks

Total 40 Marks

External Paper Pattern (60 Marks)

External Paper Pattern (60 Marks)

Write any **FOUR** questions from the following

Q1. Answer the following 15 marks

A

B

Q2. Answer the following 15 Marks

A

B

Q3. Answer the following 15 Marks

A

B

Q4. Answer the following 15 marks

A

B

Q5. Answer the following 15 Marks

A

B

Q6. Answer the following 15 Marks

A

B

VSC

Syllabus

BMS (Environmental Management & Economics)

(Sem.- III)

Title of Paper: Research Methods in Environmental Management

Sr. No.	Heading	Particulars
1	Description the course:	In the changing dynamics of business environmental forces, Environment Management helps explore the intricate balance between human activities and the natural world. Throughout this course, learners will delve into strategies for preserving ecosystems, mitigating environmental impacts, and promoting sustainability. From understanding environmental regulations to implementing conservation practices, students will develop the skills and knowledge necessary to become effective stewards of our planet. This will enable the learners to embark into the journey to safeguard our environment for future generations.
2	Vertical:	VSC
3	Type:	Theory / Practical
4	Credit:	2 credits
5	Hours Allotted:	30 Hours
6	Marks Allotted:	50 Marks
7	Course Objectives:	<ul style="list-style-type: none"> a. To enable learners to understand the basic research concepts, including research design, sampling, and data analysis. b. To explore, understand and demonstrate the ability to conduct a comprehensive literature review on a selected research topic. c. To continue learning and exploring research methods in environmental management.
8	Course Outcomes:	<p>CO1) Learner will remember & understand basic research concepts, including research design, sampling, and data analysis.</p> <p>CO2) Learner will analyse and interpret data using various statistical and analytical techniques.</p> <p>CO3) Learner will demonstrate a sense of curiosity and inquiry, and be motivated to continue learning and exploring research methods in environmental management.</p>

9	Modules:- <u>Module 1: Research & Environmental Ethics</u> Unit 1: Research & Research Proposals a. Research: Definition, Conceptualization and Formulation of Research Problem, Identifying Variables, Constructing Hypotheses, Significance of Research b. Research Proposals: Preamble, Objectives, Hypothesis to be tested; Identifying gap areas from literature review, Research Report Writing and Publication: Outline; Objective, Introduction, Design or rationale of work, Experimental Methods, Result, Discussion, Conclusion, Reference, Impact Factor c. Data: Sample Collection, Classification, Presentation of Data Unit:2 Emergence of Environmental Ethics Ethical Conduct: Honesty, Objectivity, Integrity, Carefulness, Openness, Respect for Intellectual Property, Confidentiality, Responsible Publication, Social Responsibility; Ethical issues in Environmental Research: Sustainability, Ecosystem Health, Responsiveness, Accountability, Location specificity, Capacity building.											
10	Reference Books: <ol style="list-style-type: none"> 1. Research Methodology: Methods and Techniques by C. R. Kothari. ISBN:81-224-1522-9 2. Research Methods for Environmental Studies: A Social Science Approach by Mark Kanazawa. ISBN 9781138680173 3. Handbook of Research Methods and Applications in Environmental Studies by Matthias Ruth. ISBN:978178347 4639 4. Statistical Methods for Environmental Pollution Monitoring by RO Gilbert. ISBN 0-442-23050-8 5. Health, Safety and Environmental Data Analysis by AJ Joseph. ISBN-13: 978-0367400804 6. Environmental Data Analysis: Methods and Applications by Zhihua Zhang. ISBN: 9783110424904 7. Environmental Ethics by Marion Hourdequin. ISBN 9781472507617 8. Environmental Ethics: A Very Short Introduction by Robin Attfield. ISBN-13: 9780198797166 9. Ethics and the Environment: An Introduction by Dale Jamieson. ISBN 9780511806186 10. Ecological Ethics: An Introduction by Patrick Curry. ISBN: 978-0-745-65125-5 											
11	Internal Continuous Assessment: 40%	External, Semester End Examination 60% Individual Passing in Internal and External Examination										
12	Internal Paper Pattern (20 Marks) <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">1. Project Presentation OR Case Study writing</td> <td style="width: 20%; text-align: right;">5 Marks</td> </tr> <tr> <td>2. Quiz OR Group discussion</td> <td style="text-align: right;">5 Marks</td> </tr> <tr> <td>3. Class Test (Mandatory) with objectives</td> <td style="text-align: right;">10 Marks</td> </tr> <tr> <td colspan="2" style="border-top: 1px solid black; text-align: center;"> Total </td> </tr> <tr> <td colspan="2" style="text-align: right;"> 20 Marks </td> </tr> </table>		1. Project Presentation OR Case Study writing	5 Marks	2. Quiz OR Group discussion	5 Marks	3. Class Test (Mandatory) with objectives	10 Marks	Total		20 Marks	
1. Project Presentation OR Case Study writing	5 Marks											
2. Quiz OR Group discussion	5 Marks											
3. Class Test (Mandatory) with objectives	10 Marks											
Total												
20 Marks												

QUESTION PAPER PATTERN

(External and Internal)

Paper Pattern 2 Credits (Total 50 Marks)

Internal = 20 Marks

External = 30 Marks

Internal Paper Pattern (20 Marks)

1. Project Presentation OR Case Study writing } 10 Marks

2. Quiz OR Group discussion } any one

3. Class Test (Mandatory) with objectives 10 Marks

Total 20Marks

External Paper Pattern (30 Marks)

Write any TWO questions from the following

Q1. Answer the following 15 marks

A

B

Q2. Answer the following 15 Marks

A

B

Q3. Answer the following 15 Marks

A

B

Sem - IV

Vertical – 4 Major

BMS (Environmental Management & Economics)

(Sem.- IV)

Title of Paper: Environmental Pollution Management

Sr. No.	Heading	Particulars
1	Description the course:	In the changing dynamics of business environmental forces, Environment Management helps explore the intricate balance between human activities and the natural world. Throughout this course, learners will delve into strategies for preserving ecosystems, mitigating environmental impacts, and promoting sustainability. From understanding environmental regulations to implementing conservation practices, students will develop the skills and knowledge necessary to become effective stewards of our planet. This will enable the learners to embark into the journey to safeguard our environment for future generations.
2	Vertical:	Major
3	Type:	Theory
4	Credit:	4 credits
5	Hours Allotted:	60 Hours
6	Marks Allotted:	100 Marks
7	Course Objectives:	<ul style="list-style-type: none">a. To enable learners to understand the basic concepts of environmental pollutions.b. To explore and understand the types, sources, and effects of environmental pollutants.c. To provide the learner with the effectiveness of environmental management strategies
8	Course Outcomes:	<p>CO1) Learner will remember & understand the basic concepts of the environmental pollutions.</p> <p>CO2) Learners will be able to apply & strategically analyse the types, sources, and effects of environmental pollutants.</p> <p>CO3) Learners will learn how to evaluate the effectiveness of environmental management strategies</p>

9 Modules:-

Module 1: Air and Water Pollution

UNIT-I: Air Pollution & Case studies

- a. **Air Pollution:** Air quality criteria and standard, Air pollution indices, Sources, and dispersal of air pollution; Methods of monitoring of SO_x, NO_x, CO, VOCs, PM₁₀, PM_{2.5}; Effects of pollutants on human beings, plants, animals, and historical monuments; Indoor air pollution; Control of Air pollution.
- b. **Case Studies:** Bhopal Gas tragedy and its consequences, Gas leakage at Sterlite copper plant, Tamil Nadu; Visakhapatnam Gas leak (LG Polymers chemical plant).

UNIT-II: Water Pollution & Case studies

- a. **Water Pollution:** Major sources of water pollution; Water pollution and human health; Heavy metals and their impact on aquatic life; Sewage and wastewater treatment and recycling; Industrial effluent treatment (Primary, Secondary & Advance), Minamata disease.
- b. **Case Studies:** Arsenic poisoning in West Bengal, Lead poisoning In India, Oil spillage.

Module 2: Soil, Noise, Radioactive and Thermal Pollution

UNIT-III: Soil and Noise pollution

- a. **Soil pollution:** Impact of chemical fertilizers, insecticides, pesticides, industrial sewage, Waste disposal (Land filling), Deforestation, Acid rain on soil health and its consequences.
- b. **Noise Pollution:** Sources, Measurement, Standards; Impact; Abatement and Control.

UNIT-IV: Radioactive and Thermal Pollution

- a. **Radioactive pollution** - causes and consequences; Radioactive fallout, Chernobyl Accident; Three Mile Island accident, Fukushima; Radioactive waste management; Radioactive waste management.
- b. **Thermal pollution:** Causes and consequences

10 Reference Books:

1. Environment and Pollution: An Ecological Approach by RS Ambasht. Publisher: CBS Publication.
2. Environmental Materials and Waste Resource Recovery and Pollution Prevention by MNV Prasad. Publisher: ELSEVIER
3. Environmental Pollution and Control by PA Vesilind, et al. Publisher: Elsevier.
4. Environmental Pollution and Control by PR Trivedi. Publisher: APH Publishing.
5. Environmental Pollution and Protection: An Introduction by Dhandapani Alagiri & E Naveen. Kumar. Publisher: ICFAI Books
6. Environmental Pollution by Narayanan. Publisher: CBS Publisher & Distributers
7. Environmental Pollution Monitoring and Control by S M Khopkar. Publication: New Age International
8. Environmental Pollution-Monitoring and Control by SM Khopkar, Publisher: New Age International (P) Ltd.

11	Internal Continuous Assessment: 40%	External, Semester End Examination 60% Individual Passing in Internal and External Examination										
12	Internal Paper Pattern (40 Marks) <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">1. Project Presentation OR Case Study writing</td> <td style="width: 20%; text-align: right;">10 Marks</td> </tr> <tr> <td>2. Quiz OR Group discussion</td> <td style="text-align: right;">10 Marks</td> </tr> <tr> <td>3. Class Test (Mandatory) with objectives</td> <td style="text-align: right;">20 Marks</td> </tr> <tr> <td colspan="2" style="border-top: 1px solid black; text-align: right;">Total</td> </tr> <tr> <td colspan="2" style="text-align: right;">40 Marks</td> </tr> </table>		1. Project Presentation OR Case Study writing	10 Marks	2. Quiz OR Group discussion	10 Marks	3. Class Test (Mandatory) with objectives	20 Marks	Total		40 Marks	
1. Project Presentation OR Case Study writing	10 Marks											
2. Quiz OR Group discussion	10 Marks											
3. Class Test (Mandatory) with objectives	20 Marks											
Total												
40 Marks												

QUESTION PAPER PATTERN

(External and Internal)

Paper Pattern	4 Credits	(Total 100 Marks)
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Internal = 40 Marks

External = 60 Marks

Internal Paper Pattern (40 Marks)

- | | | | |
|---|---|-------------------------|----------|
| 1. Case Study writing OR Assignment
2. Quiz OR Group discussion OR Role Playing
3. Project Presentation OR Research Paper | } | any two (10 Marks each) | 20 Marks |
| 4. Class Test - (Mandatory) with Objective questions | | | 20 Marks |

Total	40 Marks
--------------	-----------------

External Paper Pattern (60 Marks)

External Paper Pattern (60 Marks)

Write any **FOUR** questions from the following

- | | |
|--------------------------|----------|
| Q1. Answer the following | 15 marks |
| A | |
| B | |
| Q2. Answer the following | 15 Marks |
| A | |
| B | |
| Q3. Answer the following | 15 Marks |
| A | |
| B | |
| Q4. Answer the following | 15 marks |
| A | |
| B | |
| Q5. Answer the following | 15 Marks |
| A | |
| B | |
| Q6. Answer the following | 15 Marks |
| A | |
| B | |

BMS (Environmental Management & Economics)

(Sem.- IV)

Title of Paper: Customer Relationship Management

Sr. No.	Heading	Particulars
1	Description the course:	In the changing dynamics of business environmental forces, Environment Management helps explore the intricate balance between human activities and the natural world. Throughout this course, learners will delve into strategies for preserving ecosystems, mitigating environmental impacts, and promoting sustainability. From understanding environmental regulations to implementing conservation practices, students will develop the skills and knowledge necessary to become effective stewards of our planet. This will enable the learners to embark into the journey to safeguard our environment for future generations.
2	Vertical:	Major
3	Type:	Theory
4	Credit:	4 credits
5	Hours Allotted:	60 Hours
6	Marks Allotted:	100 Marks
7	Course Objectives:	<ul style="list-style-type: none">a) Learners to understand the basic concepts of customer relationship management.b) To acquaint the learners with the theoretical perspective of customer management & its practical applications.c) To explore and understand the changing dynamics of customer relations.
8	Course Outcomes:	<ul style="list-style-type: none">CO1) Learner will develop plans to meet customer needs and build relationshipsCO2) Learner apply & strategically analyses the domains of managerial practices.C03) Learning how to manage the customer lifecycle, including acquisition, retention, and development

9	Modules:-
<u>Module 1: Marketing & Emerging trends</u>	
<u>UNIT-I: Introduction to Marketing & Customer Orientation</u>	
<ul style="list-style-type: none"> a. Introduction –The Marketing Orientation – Factors Necessitating a Re-look at Marketing Methods – Changing b. Characteristics of the Empowered Customer – Increased Demand –Easy Access to Information – Emerging Trends in Marketing –Shorter Product Life Cycles. 	
<u>UNIT-II: Emerging trends in CRM</u>	
<ul style="list-style-type: none"> a. Emergence of Permission Marketing – Experimental Marketing – Offering Complete Solution – Rewarding Loyal Customers- Disruptive Innovations b. Emergence of CRM –Economics of Building Customer Relationship – Customer c. Lifetime Value – Benefits of Customer Loyalty – Benefits of Choosing the Right Customers, Customer Value and Customer Satisfaction: Precursors to CRM – Customer Value. 	
<u>Module 2: Customer Satisfaction & Management Strategies</u>	
<u>UNIT-III: CRM & Customer Satisfaction</u>	
<ul style="list-style-type: none"> a. Enhancing Value of Products and Services – Customer Satisfaction – CRM and Customer Satisfaction – Delighting the Customer – Measuring Relationship at Risk b. Role of CRM on Various Stages of the Studies – The Customer Lifecycle – Role of CRM in Pre-purchase Stage – Role of CRM in Purchase Stage – Role of CRM in Usage Stage - Role of CRM In Re-purchase Stage – Role of CRM in Winning Back Lost Customers – CRM – The Basis Concepts – Consideration to Decide the Key Customers c. Strategies for Key Customer winning Back Lost Customers – CRM – The Basis Concepts – Consideration to Decide the Key Customers – Strategies for Key Customers 	
<u>UNIT-IV: CRM Management Strategies</u>	
<ul style="list-style-type: none"> a. Segmentations Campaign Management – Cross-selling and Up-selling – Multi – Channels – Sales Force Automation – Operational and Analytical CRM – Planning for CRM – Building Customer Centricity b. The Technology Orientation - Using IT Systems for Better CRM c. CRM In Practice – CRM In Manufacturing –CRM in Insurance – CRM In Airlines – CRM IN Hotels – CRM in Telecom – CRM in SMB Segment 	
10	Text Books: Kaushik Mukerjee, “Customer Relationship Management”, PHI, New Delhi, 2007.

11	Internal Continuous Assessment: 40%	External, Semester End Examination 60% Individual Passing in Internal and External Examination										
12	<p>Internal Paper Pattern (40 Marks)</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 80%;">1. Project Presentation OR Case Study writing</td> <td style="text-align: right;">5 Marks</td> </tr> <tr> <td>2. Quiz OR Group discussion</td> <td style="text-align: right;">5 Marks</td> </tr> <tr> <td>3. Class Test (Mandatory) with objectives</td> <td style="text-align: right;">10 Marks</td> </tr> <tr> <td colspan="2" style="border-top: 1px solid black; text-align: right;">Total</td> </tr> <tr> <td colspan="2" style="text-align: right;">20 Marks</td> </tr> </table>		1. Project Presentation OR Case Study writing	5 Marks	2. Quiz OR Group discussion	5 Marks	3. Class Test (Mandatory) with objectives	10 Marks	Total		20 Marks	
1. Project Presentation OR Case Study writing	5 Marks											
2. Quiz OR Group discussion	5 Marks											
3. Class Test (Mandatory) with objectives	10 Marks											
Total												
20 Marks												

QUESTION PAPER PATTERN

(External and Internal)

Paper Pattern	4 Credits	(Total 100 Marks)
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Internal = 40 Marks

External = 60 Marks

Internal Paper Pattern (40 Marks)

- | | | | |
|---|---|-------------------------|----------|
| 1. Case Study writing OR Assignment
2. Quiz OR Group discussion OR Role Playing
3. Project Presentation OR Research Paper | } | any two (10 Marks each) | 20 Marks |
| 4. Class Test - (Mandatory) with Objective questions | | | 20 Marks |

Total	40 Marks
--------------	-----------------

External Paper Pattern (60 Marks)

External Paper Pattern (60 Marks)

Write any **FOUR** questions from the following

Q1. Answer the following 15 marks

A

B

Q2. Answer the following 15 Marks

A

B

Q3. Answer the following 15 Marks

A

B

Q4. Answer the following 15 marks

A

B

Q5. Answer the following 15 Marks

A

B

Q6. Answer the following 15 Marks

A

B

SEC

Syllabus

BMS (Environmental Management & Economics)

(Sem.- IV)

Title of Paper: Environmental Safety, Health & Management

Sr. No.	Heading	Particulars
1	Description the course:	In the changing dynamics of business environmental forces, Environment Management helps explore the intricate balance between human activities and the natural world. Throughout this course, learners will delve into strategies for preserving ecosystems, mitigating environmental impacts, and promoting sustainability. From understanding environmental regulations to implementing conservation practices, students will develop the skills and knowledge necessary to become effective stewards of our planet. This will enable the learners to embark into the journey to safeguard our environment for future generations.
2	Vertical:	SEC
3	Type:	Theory
4	Credit:	2 credits
5	Hours Allotted:	30 Hours
6	Marks Allotted:	50 Marks
7	Course Objectives:	<ul style="list-style-type: none"> a. The learners get in detail insight of health and its components. b. To acquaint the learners with Occupational safety and health standards. c. To help learners understand the concepts involved in EMS and OSHA standards
8	Course Outcomes:	<p>CO1) Learners, learn about environmental norms and standards</p> <p>CO2) Students learn to recognize and evaluate hazards in the workplace, and determine how to control them</p> <p>CO3) Learner will apply & strategically analyses Environmental managerial practices.</p>

9	<u>Modules:-</u>
	Module 1: <u>Personal Health, Hygiene & Occupational health</u>
	Unit 1: Health Management
	<ul style="list-style-type: none"> a. Definition- need for good health- factors affecting health. Types of diseases (deficiency, infection, pollution diseases). b. Personal hygiene- food (balanced diet). Food habits & cleanliness, food adulterants, avoiding smoking, drugs & alcohols c. Public health: communicable diseases, mode of transmission (epidemic and endemic diseases). Management of hygiene in public places (railway stations, bus stands and other public places).
	Unit 2: Occupational health and hazards

- a. Occupational health and hazards-physical-chemical and biological. Occupational diseases- prevention and control., drugs & alcohols.
- b. Accidents-definitions-prevention and control.
- c. Safety management system- concepts of safety management systems- EMS, ISO-14000 and 14001, OSHA.

Reference Books:

1. Scoot, R. M. 1997. Basic concepts of industrial hygiene, Lewis Publisher, New York
2. Diberardins L.J., 1998. Hand book of occupational safety and health, John Willey, New York
1. York
2. Park J.E. and Park, Preventive, and social medicine.
3. Schilling R.S.E. 1973. Occupational health practice, Buffer Worth, London,
4. Khan M.A.O., John.P, Bederka.S., 1974. Survival in toxic environment, Academic Press, New York.
5. New York. REFERENCES 1. Scoot, R. M. 1997.
6. Basic concepts of industrial hygiene, Lewis Publisher, New York 2. Diberardins L.J., 1998.
7. Hand book of occupational safety and health, John Willey, New York 3. Park J.E. and Park, Preventive, and social medicine. Schilling R.S.E. 1973.
8. Occupational health practice, Buffer Worth, London, Khan M.A.O., John.P, Bederka.S. , 1974.
9. Survival in toxic environment, Academic Press, New York.

10	Internal Continuous Assessment: 40%	External, Semester End Examination 60% Individual Passing in Internal and External Examination
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11	Internal Paper Pattern (20 Marks)	
	1. Project Presentation OR Case Study writing	5 Marks
	2. Quiz OR Group discussion	5 Marks
	3. Class Test (Mandatory) with objectives	10 Marks
	Total	20 Marks

QUESTION PAPER PATTERN

(External and Internal)

Paper Pattern 2 Credits (Total 50 Marks)

Internal = 20 Marks

External = 30 Marks

Internal Paper Pattern (20 Marks)

1. Project Presentation OR Case Study writing	} any one	10 Marks
2. Quiz OR Group discussion		
3. Class Test (Mandatory) with objectives		10 Marks
Total		<hr/> 20Marks

External Paper Pattern (30 Marks)

Write any TWO questions from the following

- | | |
|---------------------------------|-----------------|
| Q1. Answer the following | 15 marks |
| A | |
| B | |
| Q2. Answer the following | 15 Marks |
| A | |
| B | |
| Q3. Answer the following | 15 Marks |
| A | |
| B | |

Letter Grades and Grade Points:

Semester GPA/ Programme CGPA Semester/ Programme	% of Marks	Alpha-Sign/ Letter Grade Result	Grading Point
9.00 - 10.00	90.0 - 100	O (Outstanding)	10
8.00 - < 9.00	80.0 - < 90.0	A+ (Excellent)	9
7.00 - < 8.00	70.0 - < 80.0	A (Very Good)	8
6.00 - < 7.00	60.0 - < 70.0	B+ (Good)	7
5.50 - < 6.00	55.0 - < 60.0	B (Above Average)	6
5.00 - < 5.50	50.0 - < 55.0	C (Average)	5
4.00 - < 5.00	40.0 - < 50.0	P (Pass)	4
Below 4.00	Below 40.0	F (Fail)	0
Ab (Absent)	-	Ab (Absent)	0

Sd/-

**Sign of the BOS
Chairman
Dr. Kanchan Fulmali
Board of Studies in
BMS**

Sd/-

**Sign of the
Offg. Associate Dean
Prin. Kishori Bhagat
Faculty of Commerce
& Management**

Sd/-

**Sign of the
Offg. Associate Dean
Prof. Kavita Laghate
Faculty of
Commerce &
Management**

Sd/-

**Sign of the
Offg. Dean
Prin. Ravindra
Bambardekar
Faculty of
Commerce &
Management**