

UNIVERSITY OF PUNE
FACULTY OF MANAGEMENT
POST GRADUATE DIPLOMA IN ENVIRONMENTAL MANAGEMENT (PGDEM)
ONE YEAR, TWO SEMESTER PART TIME PROGRAMME
REVISED CURRICULUM w.e.f. A.Y. 2013-2014

1. TITLE OF THE PROGRAMME: POST GRADUATE DIPLOMA IN ENVIRONMENTAL MANAGEMENT (PGDEM)

2. PREAMBLE: It is a well felt need that management experts need to develop concern about environment. Therefore Management faculty has decided to have this type of interdisciplinary post-graduate diploma course useful to both working managers and future managers.

The objectives of the course are:

1. To understand environmental issues in general and related industrial sector in particular.
2. To develop the skill for environment management in the industrial sector.
3. To improve awareness about environmental issues and remedial measures with a social aspect.
4. To develop environment friendly policy instruments.

3. INTRODUCTION: The Programme comprises of 2 Semesters.

3.1 Credits

The programme is a combination of:

- a) Full Credit Courses (100 Marks each) : 3 Credits each
- b) Half Credit Courses (50 Marks each) : 2 Credits each

Total Credits: 31 Credits (1000 Marks)

- a) 9 Full Credit Courses * 3 credits per course = 27 Credits
- b) 2 Half Credit Courses * 2 credits per course = 04 Credits

In the Credit system the emphasis is on the **hours put in by the learner and not on the workload of the teacher**. Each credit can be visualized as a combination of **3 components viz. Lecture (L) + Tutorials (T) + Practicals / Project Work (P) i.e. LTP Pattern**.

In terms of credits, for a period of one semester of 15 weeks:

- a) every ONE hour session per week of L amounts to 1 credit per semester
- b) a minimum of TWO hours per week of T amounts to 1 credit per semester,
- c) a minimum of TWO hours per week of P amounts to 1 credit per semester,

The effort of the learner for each Credit Point may be considered under two parts –

- a) The hours actually spent in class room / practical / field work instructions and

- b) The notional hours spent by the Learner in self-study, in the library, peer interactions, case study, writing of journals and assignments, projects etc for the completion of that course.

Teaching / learning sessions are to be interpreted in a broader perspective as follows:

- a) Teaching – Learning Processes: Classroom sessions, Group Exercises, Seminars, Small Group Projects, etc.
- b) Evaluation: Tutorials, Class Tests, Presentations, Field work, Assignments, etc.

3.2 Adoption of Credit and Grading System: As per national and international trends, it is proposed to adopt the Credit and Grading System for the PGDEM programme.

Salient features of the grading system:

1. Learners are placed in ability bands that represent a range of scores. These ability bands may vary according to the number of categories for the classification of the performance of the learners. This ability range may be designated with alphabetical letters called as GRADE.
2. The system of awarding grades would provide a more realistic picture of learner's ability than the prevailing marking system.
3. Grading is a far more satisfactory method than the numerical marking system as it reflects an individual learner's performance in the form of a certain level of achievement.
4. The Grading system ensures natural classification in qualitative terms rather than quantitative terms since it expresses a range /band of scores to which a learner belongs such as O,A,B,C,D,E & F.
5. The award of grades provides a permanent record of the learner's growth and development that might be helpful for institutions of higher education for allocating seats for prospective employers.
6. Grading does not require making fine distinctions in performance when no such distinctions actually exist.
7. It is based on a realistic concept of 'errors of measurement'.
8. Grades are relatively free from extraneous factors like difficulty of the examination, examiner bias, nature of the subject being examined, etc.
9. Grades can be interpreted easily and directly and can be used to prepare an accurate 'profile' of a learner'

Basics of Credit and Grading System: Grading, is a method of reporting the result of a learner's performance subsequent to his evaluation. It involves a set of alphabets which are clearly defined and designated and uniformly understood by all the stake holders. A properly introduced grading system not only provides for a comparison of the learners' performance but it also indicates the quality of performance with respect to the amount of efforts put in and the amount of knowledge acquired at the end of the course by the learners.

It is proposed to use the **Indirect and Absolute Credit and Grade Point System for the PGDEM programme**, i.e. the assessment of individual Courses in the concerned examinations will be on the basis of marks, but the marks shall later be converted into Grades by some mechanism wherein the overall performance of the Learners can be reflected after considering the Credit Points for any given course. However, the **overall evaluation shall be designated in terms of Grade**.

3.3 Session Duration: Each teaching-learning, evaluation session shall be of 60 minutes.

4. ELIGIBILITY: A student seeking admission to this course must have the following qualifications:

- 1) Bachelor's degree of any statutory University or other recognized foreign university.
- 2) Any diploma awarded by Board of Technical Education of any State Government or Central Government (post SSC three years' Diploma with 2 years post Diploma experience or post HSC two years' Diploma with one year post Diploma experience)

5. EXAMINATION: Pattern of Examination: The evaluation scheme comprises of:

- a) University Evaluation (50 Marks)
- b) Concurrent Evaluation (50 Marks)

5.1 University Evaluation: There shall be University evaluation for each full credit course as per the time table announced by the University. There shall be a Written Examination (subjective – concept plus case study / application oriented type) for 50 marks by the University for each Full Credit Course.

5.1.2 Instructions to External Paper Setters / Chairman / Examiners

For University evaluation (Written Examination – subjective type of 50 marks) of each full credit course the question pattern shall be as follows:

Question Paper Pattern:-

- 1) There shall be five questions each of 10 marks.
- 2) All questions shall be compulsory with internal choice within the questions.
- 3) A Question may be subdivided into sub-questions a, b, c... and the allocation of marks depend on the weightage of the topic.

Questions shall be set to assess knowledge acquired, standard application of knowledge, application of knowledge in new situations, critical evaluation of knowledge and the ability to synthesize knowledge. The questions setter shall ensure that questions covering all skills are set. He/She shall also submit a detailed scheme of evaluation along with the question paper.

The duration of written examination shall be 2 hours. Students shall be provided a single answer sheet of 16 pages. They must ensure that their responses fit within the provided answer sheet. Additional supplements shall not be provided.

5.2 Concurrent Evaluation: There shall be Concurrent evaluation for 50 marks for each full credit course. Half credit courses shall be evaluated for 50 marks through Concurrent evaluation. As a part of concurrent evaluation the students shall be *evaluated on a continuous basis* by the Institute to ensure that student learning takes place in a graded manner. *There shall be no University evaluation for half credit courses.*

Suggested components for Concurrent Evaluation (CE) are:

1. Case Study / Caselet / Situation Analysis – (Group Activity or Individual Activity)
2. Class Test
3. Open Book Test
4. Field Visit / Study tour and report of the same
5. Small Group Project & Internal Viva-Voce
6. Learning Diary
7. Scrap Book
8. Group Discussion
9. Role Play / Story Telling
10. Individual Term Paper / Thematic Presentation
11. Written Home Assignment
12. Industry Analysis – (Group Activity or Individual Activity)
13. Literature Review / Book Review
14. Model Development / Simulation Exercises – (Group Activity or Individual Activity)
15. In-depth Viva
16. Quiz

Performance of the students in each component of the Concurrent Evaluation shall be communicated immediately to the students by the Institute by displaying them on the Institute's Notice Board/Website.

Detailed record of the Concurrent Evaluation shall be maintained by the Institute. The same shall be made available to the University, on demand.

Marks for the concurrent evaluation must be communicated by the Institute to the University before the commencement of relevant Semester end University Evaluation.

5.3 Project: During the Second Semester each student shall undertake a *Project*. The student shall submit a written structured report based on work done during this period.

Since most students enrolled for the PGDEM programme are expected to be working students, such working students may complete the Project at their workplace.

The report should be well documented and supported by –

1. Executive Summary
2. Organizational profile
3. Outline of the problem/task undertaken
4. Research methodology & data analysis (in case of research projects)
5. Relevant activity charts, tables, graphs, diagrams,
6. Learning of the student through the project
7. Contribution to the host organization
8. References in appropriate styles.

It should reflect the nature and quantum of work undertaken by the student. *The learning outcomes and utility to the organization must be specifically highlighted.* The completion of the Project shall be certified by the Faculty Guide & approved by the Director of the Institute. The external organization (Corporate / NGO/ SME/ etc.) shall also certify the Project work.

The student shall submit **TWO hard copies & one soft copy (CD)** of the project report before 31st March in Sem IV.

In the interest of environmental considerations, students are encouraged to print their project reports on both faces of the paper.

There shall be an external viva-voce for the Project for 100 marks. The examiner's panel for the same shall include one external faculty member nominated by the University and one internal faculty member nominated by the Director.

The External viva-voce panel shall evaluate the project based on:

1. Actual work undertaken by the student
2. Student's understanding of the organization and business environment
3. Outcome of the project
4. Utility of the project to the organization
5. Basic analytical capabilities

Copies of Project report and records of evaluation shall be maintained by the Institute for a period of 3 academic years.

5.4 Standard of Passing: Every candidate must secure at least Grade E in Concurrent Evaluation as well as University Examination as separate heads of passing for each course.

Diploma Requirements:

- a) **Earned Credits:** The Diploma requirements for the PGDEM programme is completion of 31 earned credits.
- b) **Final Grade Point Requirement:** A student must obtain the Final Grade Point of a minimum of 00.50 to be eligible for award of the PGDEM diploma.

5.4.1 Conversion of Marks to Grade Points & Grades: The marks shall be converted to grade points and grades using Table I below.

Table I: Points Grading System

Sr. No.	Marks	Grade	Grade Point
1	100 – 75	O – Outstanding	06
2	74 – 65	A – Very Good	05
3	64 -55	B – Good	04
4	54 – 50	C – Average	03
5	49 – 45	D – Satisfactory	02
6	44 – 40	E – Pass	01
7	39 - 0	F – Fail	00

The description of the final grades shall be as follows:

O: Outstanding (Excellent Analysis of the topic - 75% and above)

Accurate knowledge of the primary material, wide range of reading, logical development of ideas, originality in approaching the subject. Neat and systematic organization of content, elegant and lucid style.

A: Very Good (Excellent Analysis of the topic - 65 to 74 %)

Accurate knowledge of the primary material, acquaintance with seminal publications, logical development of ideas. Neat and systematic organization of content, effective and clear expression.

B : Good (Good Analysis and treatment of the topic - 55 to 64 %)

Basic knowledge of the primary material, logical development of ideas. Neat and systematic organization of content, effective and clear expression.

C : Average (Some important points covered – 50 to 54%)

Basic knowledge of the primary material, logical development of ideas. Neat and systematic organization of content, good language or clear expression.

D: Satisfactory (Some points discussed – 45 to 49%)

Basic knowledge of the primary material, some organization of content, acceptable language or expression.

E: Pass (Any two of the above – 40 to 44%)

F: Fail (None of the above – 0 to 39%)

The performance of a student will be evaluated in terms of two indices, viz.

- a) *Semester Grade Point Average (SGPA)* which is the Grade Point Average for a semester
- b) *Cumulative Grade Point Average (CGPA)* which is the Grade Point Average for all the completed semesters at any point in time.

Semester Grade Point Average (SGPA): At the end of each semester, SGPA is calculated as the weighted average of GPI of all courses in the current semester in which the student has passed, the weights being the credit values of respective courses.

SGPA = Grade Points divided by the summation of Credits of all Courses.

$$\text{SGPA} = \frac{\sum \{C * \text{GPI}\}}{\sum C} \quad \text{for a semester.}$$

Where GPI is the Grade and C is credit for the respective Course.

Cumulative Grade Point Average (CGPA): Cumulative Grade Point Average (CGPA) is the grade point average for all completed semesters. CGPA is calculated as the weighted average of all GPI of all courses in which the student has passed up to the current semester.

Cumulative Grade Point Average (CGPA) for the Entire Course

$$\text{CGPA} = \frac{\sum \{C * \text{GPI}\}}{\sum C} \quad \text{for all semesters taken together.}$$

Where GPI is the Grade and C is credit for the respective Course.

IMPORTANT NOTE:

If a student secures F grade in either or both of Concurrent Evaluation or University Evaluation for a particular course his /her credits earned for that course shall be ZERO.

5.5 Scaling Down of Concurrent Evaluation Scores: The marks obtained by the student for the Concurrent Evaluation components conducted by the Institute, in the Full Credit Courses, in Sem I and Sem II, shall be scaled down, to the required extent, if such percentage of marks are more than 20% of the marks scored in the University Examination for the respective course.

The marks obtained by the student in Half Credit Courses are not subject to scaling down.

5.6 Attendance: The student must meet the requirement of 75% attendance per semester per course for granting the term. The Director shall have the right to withhold

the student from appearing for examination of a specific course if the above requirement is not fulfilled.

5.7 ATKT Rules: Candidate has to earn credits for a course in not more than 4 attempts. Admission for the PGDEM programme shall be valid for 3 Academic Years.

5.8 Award of Grade Cards: The University of Pune under its seal shall issue to the student a grade card on completion of each semester. The final Grade Card issued at the end of the final semester shall contain the details of all courses taken during the entire programme for obtaining the degree.

Final Grades: After calculating the SGPA for an individual semester and the CGPA for entire programme, the value shall be matched with the grade in the Final Grade Points Table (as per Table II) and expressed as a single designated GRADE such as O, A, B, C, D, E, F.

Table II: Final Grade Points

Sr. No.	Grade Points	Grade
1	05.00 to 6.00	O - Outstanding
2	04.50 to 04.99	A – Very Good
3	03.50 to 04.49	B – Good
4	02.50 to 03.49	C – Average
5	01.50 to 02.49	D – Satisfactory
6	00.50 to 01.49	E – Pass
7	00.00 to 00.49	F – Fail

A student who secures grade E or above in a course is said to have completed /earned the credits assigned to the course. A student who has completed the minimum 31 credits required for the PGDEM programme shall be declared to have completed the programme.

NOTE:

The Grade Card for the final semester shall indicate the following, amongst other details:

- a) Grades for concurrent and university evaluation, separately, for all courses offered by the student during the entire programme along with the grade for the total score.
- b) SGPA for each semester.
- c) CGPA for final semester.
- d) Total Marks Scored out of Maximum Marks for the entire programme, with break-up of Marks Scored in Concurrent Evaluation and University Evaluation.
- e) Marks scored shall not be recorded on the Grade Card for intermediate semesters.
- f) The grade card shall also show the 7 point scale and the formula to convert GPI, SGPA, and/or CGPA to percent marks.

- g) The final GPA shall not be printed unless the student earns the minimum 31 credits required for earning the PGDEM diploma.
- h) B Grade is equivalent to atleast 55% marks.
- i) If the GPA is higher than the indicated upper limit in the three decimal digit, then the student may be awarded higher final grade e.g. a student getting a GPA of 4.492 may be awarded grade A.

5.9 External Students: There is no provision of external students.

5.10 Verification / Revaluation: Students can avail the verification / revaluation facility as per the prevailing policy, guidelines and norms of the University of Pune.

6. Structure of the Programme: The programme is a combination of:

- a) Full Credit Courses (100 Marks each) : 3 Credits each
- b) Half Credit Courses (50 Marks each) : 2 Credits each

Spread of Full & Half Credit Courses:

Semester	Full Credit Courses (100 Marks) (A)	Half Credit Courses (50 Marks) (B)	Total Courses (C = A + B)
I	4	2	6
II	5	0	5
Total	9	2	11

The programme has 9 Full Credit Courses (100 Marks each) and of 3 Credits each.

The programme has 2 Half Credit Courses (50 Marks each) and of 2 Credits each. Thus the entire programme has 11 Courses of 31 credits in all.

6.1 Programme Structure for Post Graduate Diploma In Environmental Management (PGDEM)

Semester I					
Course Code	Course	Concurrent Evaluation	University Evaluation	Total	Credits
101	Principles & Practices of Management	50	50	100	3
102	Basics of Management Accounting	50	50	100	3
103	Introduction to Environment	50	50	100	3
104	Introduction to Environment Management	50	50	100	3
105	Environmental Legislation	50	0	50	2

106	Written, Analysis & Communication Skills	50	0	50	2
	TOTAL	300	200	500	16

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Semester II					
Course Code	Course	Concurrent Evaluation	University Evaluation	Total	Credits
201	Natural Resource Management	50	50	100	3
202	Environmental Management & EIA	50	50	100	3
203	Environmental Pollution & Disaster Management	50	50	100	3
204	Environmental Economics & Indian Environmental Scenario	50	50	100	3
205	Project	00	100	100	3
	TOTAL	200	300	500	15

6.2 Medium of Instruction: The medium of Instruction & Evaluation shall be English.

7. EQUIVALENCE OF PREVIOUS SYLLABUS WITH THE REVISED SYLLABUS: The equivalence of the previous syllabus with the revised syllabus is provided in Annexure II.

8. University Terms: The dates for the commencement and conclusion of the first and the second terms shall be as determined by the University Authorities. The terms can be kept only by duly admitted students. The present relevant ordinances pertaining to grant of terms will be applicable.

9. Course wise detailed syllabus: Course wise detailed syllabus along with recommended text books, reference books, websites, journals, etc. is provided in Annexure I.

Note:

- In the detailed syllabus, Number of Sessions indicated are as follows: 7 + 1 indicates 7 teaching sessions and 1 evaluation sessions. Kindly note that the numbers indicated are indicative and not prescriptive.*
- Faculty members and students should refer to the latest edition of the relevant books, wherever such latest editions are available.*

Semester	I	Credits	3
Course Code	101	Course Type	Full Credit
Course Title	Principles & Practice of Management		

Course Objectives:	
1	To Understand Basic Management Thoughts and basic changes in Management.
2	To Understand various functions of Management and organizations
3	To Understand manpower planning, Selection, Recruitment and Total Quality Managers

Syllabus:

Unit Number	Contents	Number of Sessions
1	History of Management Thought Development, Changes and Evaluation of Management. Principles Classical school, Human Relation School.	7 + 1
2	Functions of Management. (PODSCORB) Planning , Organizing , Direction, Staffing, Co-ordination, Result & Budget, Decision Making, Scheduling.	7 + 1
3	Organization- Nature, Purpose and Process. Types of Organization Structure, Organizational Levels, Span of Management, Levels of Authority.	7 + 1
4	Controlling : Basic Control Process, Critical Control, Traditional Control Devices, Modern Control Device, Budgetary Control.	7 + 1
5	Manpower Planning : Defining Requirements, Selection, Recruitment, Appraisal & Rewards, Compensation Planning, Total Quality Management .	7 + 1

Learning Resources:		
1	Text Books	Essentials of Management : - Koontz and O'Donnel Business Management : - C.B. Gupta
2	Reference Books	Management for Results :- Peter Drucker Management of Practices :- Y Murthy
3	Supplementary Reading Material	One Minute Manager- Blackhard K.T. Johnsons.
4	Websites	-
5	Journals	Vikapla Journal of Management

Semester	I	Credits	3
Course Code	102	Course Type	Full Credit
Course Title	Basics of Management Accounting		

Course Objectives:

1	Orienting Students with the various concepts in finance, financial Tools & Techniques so as to make them aware of Basics of Management Accounting
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Syllabus:

Unit Number	Contents	Number of Sessions
1	Financial accounting –An overview: Basic financial concept, different facets of Accounting & Finance, Financial Accounting process, Books of Accounts.	7 + 1
2	Introduction to Costing – An overview, Basic Cost, Concept, Cost determination process, Job costing, Budgetary control and cost reduction.	7 + 1
3	Management Accounting- Nature, Purpose and scope of Managerial Accounting, some tools of Managerial Accounting (Elementary)	7 + 1
4	Audit- An overview: Principles and Practices of Audit, Statutory Audit, Internal Audit Management Audit, Ethics and Audit	7 + 1
5	Introduction to Environmental Accounting and Auditing.	7 + 1

Learning Resources:

1	Text Books	Double Entry Book-keeping : J.S. Grewal Management Accounting : Jawaherwal
2	Reference Books	Management Accounting : Srinivasan Management Accounting : Saxena
3	Supplementary Reading Material	Financial Management – Dr. S.K. Maheshwari International Financial Management – Dr. Varshney Management Accounting – by Khan and Jain Double Entry book keeping - by Patkar Cost Accounting – Jain and Narang
4	Websites	
5	Journals	Journal of Commerce and Management Thought

Semester	I	Credits	3
Course Code	103	Course Type	Full Credit
Course Title	Introduction to Environment.		

Course Objectives:

- 1 To Develop concern about Environment.
- 2 To understand the Fundamentals of Environment.
- 3 To understand the structural & functional attributes of Environment.

Syllabus:

Unit No.	Content	No of Sessions.
1	Environment as the Basis of Life (Biosphere) : Meaning of Environment, Components of environment, Structure of environment, Functioning of environment, Levels of organization in nature- Food chain and Tropic structure, Biogeochemical Cycles, Natural selection. Interdependence of man & environment.	7 + 1
2	Environmental disorders: Impact on land, climate, natural vegetation and impact on utilization of natural resources, relevance of environmental studies with respect to technological development, trade and scientific progress.	7 + 1
3	Environment as Science : Introduction, Types of environment- Physical & Cultural, Environmental Science- meaning and definition, nature and scope, methods and importance of study.	7 + 1
4	General Account of the Environment: Atmosphere: Composition and structure, light and temperature factors, Isolation, terrestrial radiation, heat balance, Hydrological cycle, Weather and climate. Hydrosphere: Realms of water- in ocean, in atmosphere, on the land, underground water, water in biosphere, Aquatic ecosystems. Lithosphere: landforms and types, Soil as basic natural resource- Definition and Composition, Formation of Soil, Properties of soil, Soil erosion- Causes, Effects and Control measures	7 + 1
5	Human Impact on Natural Environment: Human impact on climate and atmosphere, vegetation, animals, soil and water. Impact of Human agencies in geomorphology.	7 + 1

Learning Resources

1	Text Books	Textbook of Environmental studies.-Eriach Barucha, Univ. Publication Hyderabad
		Textbook of Environmental studies. –R.K.Trivedi, S. Chand Publication, New Delhi.
2	Reference	Environment Management. -H.M.Saxena, APH Publication, New

	Books	Delhi. Environment Management –K Narayanan, Rastogi Publication, Jaipur.
3	Suppl. Reading Material	Environmental Studies- D.K.Asthana, S. Chand Publication, New Delhi. Principles of Ecology- E.P.Odum, Oxford Publication, London.
4	Websites	www.bhns.org, www.nic.in, www.nature.org
5	Journals	International Journal of Environment & Development. Enrich Environment.

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Semester	I	Credits	3
Course Code	104	Course Type	Full Credit
Course Title	Introduction to Environment Management		

Course Objectives:

1	To understand environmental issues in general and related industrial sector in particular.
2	To develop the skill for environment management in the industrial sector.
3	To improve awareness about environmental issues and remedial measures with a social aspects and to develop environment friendly policy instruments.

Syllabus:

Unit Number	Contents	Number of Sessions
1	Environment impact on business : Social, Economic, Political, Cultural, Legal and Constitutional and Sub-systems and environment and their impact on Business.	7 + 1
2	Constitution of India : Fundamental rights and duties, Directive Principles of State Policy, 74 th Amendment of the constitution pertaining to local Government.	7 + 1
3	Introduction to Environmental Legislation : How the Parliament functions- Bill to Act to Rules. How a bill is issued in parliament and how it become an Act. How a rule is notified / Gazette. Introduction to Environmental Act, Safety Related Rules. Environmental policy of the Government of India with respect to Ecology.	7 + 1
4	Public Policy for Industry and Business: Environmental Policy of Government of India and the Working of the Ministry of Environment and Forest Central Pollution Control Board. State Pollution Control Board. Annual Report of the Ministry of Environmental and Forest (Current year).	7 + 1
5	Internal and Environmental Management : Use of internal as a tool : Specific website related to environmental Management. Introduction to Software packages for GIS and MIS.	7 + 1

Learning Resources:

1	Text Books	Government and Business Management – Roy Kumar and Ghosh. Economic Development of Business by Dr. M. Adhikari.
2	Reference Books	Economic Development – Past and Present by Gill Business Law – by K.R. Poulechandatil.

3	Supplementary Reading Material	Environment Management – P. Bhushana Rao Environment Education – I Mohan
4	Websites	
5	Journals	Economics and Political Weekly - A to Z Industrial Estate Mumbai -13

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Semester	I	Credits	2
Course Code	105	Course Type	Half Credit
Course Title	Environmental Legislation		

Course Objectives:

1	To provide insight into the changes that are taking place in Environmental Legislation Sector.
2	To provide insight into the Impact of Environmental Legislation on the Business, Organization, factories, Society and its relation to Corporate Social Responsibility, Managers.

Syllabus:

Unit Number	Contents	Number of Sessions
1	Constitutional Provisions for environmental protection : Specific Provisions for Environmental Protection in the Constitution of India. Provisions in the Directive Principles of State Policy.	12 + 2
2	Environmental Acts, Rules and Notifications :- The following environmental Acts/ Rules will be discussed in details : the rest of the Acts, rules and notification will be referred to : a) Water (Prevention and control of Pollution) Act & the corresponding rules. b) Water (Prevention & Control of Pollution) Act and the corresponding Rule. c) Air (Prevention and control of Pollution) Act and the corresponding rule. d) Environment (Protection) Act and Rule. e) Hazardous waste (Management and Handling Rules) f) Manufacture, storage and Import of Hazardous Chemicals Rules g) Public Liability Insurance Act and Rules Refer to Moef Website (http://envfor.nic.in) For the latest revisions, amendments etc.	12 + 2
3	Important Judgments and Cases : Discussion on landmark cases : Sriram Chemicals Oleum Leak Case, Bhopal Gas Leak case, Ganga Action Plan case etc. Green Benches.	5 + 1

Learning Resources:

1	Text Books	Environmental Laws - Mhaskar A.K.
2	Reference Books	R.K. Trivedy – Hand book of Environmental Laws, Guidelines, Compliance & standards, Vol 1 &2 Environ – Media Karad, India.

3	Supplementary Reading Material	Environmental Laws- Benimadhav Chatterjee Environment Protection Act – 1986,39,67,154
4	Websites	http://envfor.nic.in
5	Journals	-

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Semester	I	Credits	2
Course Code	106	Course Type	Half Credit
Course Title	Written Analysis & Communication Skills		

Course Objectives:

- 1 To cultivate appropriate written communication skills.
- 2 To develop communication process, its principals and patterns.
- 3 To prepare candidates for Group discussions, interviews & public presentation.

Syllabus:

Unit No.	Content	No of Sessions.
1	Nature, Scope, Functions & Barriers of Business Communication.	5 + 1
2	The Process, Principles & patterns of Communication.	5 + 1
3	Types of communication.	5 + 1
4	Written communication.	5 + 1
5	Interviews and Group Discussion.	5 + 1

Learning Resources

1	Text Books	An Approach to Communication Skills- Indrajeet Bhatta chariya Business Correspondance and Report Writing. –R.C.Sharma.
2	Reference Books	Developing Communication Skills – Krishna Menon.
3	Suppl. Reading Material	Technical Communication- Meenakshi Raman, Oxford Publication. The Handbook of Communication Skills- Owen Hargie.
4	Websites	www.kent.ac.uk www.totalcommunicator.com
5	Journals	Journal of Business Communication Write Now- Journal of Written Communication Skills.

Semester	II	Credits	3
Course Code	201	Course Type	Full Credit
Course Title	Natural Resource Management		

Course Objectives:

- 1 To inculcate Knowledge pertaining to Natural Resources.
- 2 To create awareness on optimal usage on Natural Resources
- 3 To develop skills in harnessing Natural Resources.

Syllabus:

Unit No.	Content	No of Sessions.
1	Forest: Forest types, role of forest, Forest products- demand and supply, Tribal and forest, Forest Management. Classification of forest land, Administrative classification of forests, Classification of forests for management, social forestry, community forestry. Indian forest policy and Forest conservation. National Forestry Action Plan- 1999: An Overview.	7 + 1
2	Wildlife: Importance of wildlife, abuse and depletion of wildlife, Wildlife conservation- classification of scarce wildlife, Methods of wildlife conservation, Endangered species of India, Wildlife conservation in India, Legislation: WLPA – 1972 and 2002 Amendment, development and Impact of wildlife, National Parks and Sanctuaries, GO's and NGO's in wildlife conservation, Eco-tourism.	7 + 1
3	Energy: Energy requirement. Impact of energy utilization on the environment. Conventional sources of energy: Coal, Oil and Natural gas, Thermal power, Firewood, Hydropower, Nuclear power. Non Conventional Sources of Energy: Solar energy, Wind energy, Ocean/ Tidal energy, Geothermal energy, Biomass based energy, Dendrothermal energy, Energy from urban waste, Bagasse based energy.	7 + 1
4	Land/ Soil Landforms- types and significance, Degradation of land- causes and effects, Desertification. Soil: Basic Natural Resource, Formation and Composition, Soil erosion, Soil conservation.	7 + 1
5	Water: Surface and groundwater, Water management, Rain water harvesting, Water shed management. Aquaculture- Inland water resources and their economic potential with respect to fisheries. Fresh water fish culture, Establishment and management of fish farm. Fishery – as self employment avenue (small scale industry), Govt. schemes, Training and incentives.	7 + 1

Learning Resources:

1	Text Books	Textbook of Environmental studies.-Eriach Barucha, Univ. Publication Hyderabad
		Textbook of Environmental studies- Y.S.Khan, Deep Publication Kolhapur
2	Reference Books	Environmental Conservation –R.F.Dassmenn
		Environmental Studies Chatval & Sharma, Himalaya Publishing house , Mumbai.
3	Suppl. Reading Material	Environment Management. -H.M.Saxena, APH Publication, New Delhi.
		Environmental Impact Assesment. S.A. Abbasi, Crescent Publication , New Delhi.
4	Websites	www.ncf.india.org, www.wwf.india.org, www.nature.org
5	Journals	Ecology, Environment and Conservation
		Indian steam Research Journal

Semester	II	Credits	3
Course Code	202	Course Type	Full Credit
Course Title	Environmental management and EIA		

Course Objectives:

1	To understand environment impact assessment and their steps and significance and objective in details.
2	To understand waste management and recycling plants.
3	To understand environment Audit – ISO 9011, qualities of environmental auditor and Environment Audit system.

Syllabus:

Unit Number	Contents	Number of Sessions
1	EIA : Steps in EIA- description of proposed activity (Analysis of need) Analysis of site selection procedure and alternate sites, base line conditions/ major concerns, descriptions of potential positive and regional , temporal and spatial considerations.	7 + 1
2	Significance of impacts, mitigation plans, identify issues related to human health, considerations of alternatives, including not proceeding, monitoring plans (Impact of mitigation efforts) contingency of plans for unpredicted impacts.	7 + 1
3	Waste minimization and recycling plants, public consultation programs, plans to minimize release of adverse substances, terms of reference any other information deemed necessary (use UNEP document on EIA as the basis for discussion of various sub topics).	7 + 1
4	Environmental Audit : ISO 19011, qualities of environmental auditor, contents of EA reports.	7 + 1
5	Environmental Audit terminology, Environmental management system audit.	7 + 1

Learning Resources:

1	Text Books	Environment Impact Assessment – S.N. Kaul, V.S. Kulkarni
2	Reference Books	W. Kurge: ISO 14001 certification- Environmental management system, Prentice Hall Badrinath S.D. and Ram N.S.- Environmental Audit : A Step towards an Ecological economy.
3	Supplementary Reading Material	Environment Awareness - Dr. S.K. Potadar and Dr. D.M. Mahajan

4	Websites	-
5	Journals	

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Semester	II	Credits	3
Course Code	203	Course Type	Full Credit
Course Title	Environmental Pollution & Disaster Management		

Course Objectives:

- 1 To create awareness on Environmental Pollution.
- 2 To understand various aspects of Pollution.
- 3 To develop skills in managing local Pollution related problems.

Syllabus:

Unit No.	Content	No of Sessions.
1	Air Pollution: Definition, Sources of air pollution. Air pollutants (CO, CO ₂ , SO ₂ , NO _x , hydrocarbons & aerosols). Specific phenomena related with air pollution- Green House Effect, acid rain, Ozone layer depletion and Smog. Effect of air pollution on – Human health, Animals, Plants, Atmosphere and other effects. Management measures for preventing and controlling air pollution.	7 + 1
2	Water Pollution: Sources of water and its quality, Definition and sources of water pollution. Specific phenomena related with water pollution- Algal bloom, Eutrophication, Biomagnification/ Bioaccumulation, BOD, Sewage treatment. Ground water pollution. Effect of water pollution – on man, Animals, Marine life, Vegetation and other effects. Management measures for preventing and controlling water pollution.	7 + 1
3	Land/ Soil Pollution: Definition, Sources of land/ soil pollution, Specific phenomena related with land/ soil pollution: Energy from refuse, Recycling of waste materials, NIMBY, NIABY Radioactive pollution. Harmful effects of land/ soil pollution. Remediation of land-fill sites Management measures for preventing and controlling land/ soil pollution. Methods of solid waste disposal.	7 + 1
4	Noise Pollution: Definition, Measurement of noise and its intensity, Sources of noise pollution, Effects of noise pollution. Prevention and Control measures of noise pollution.	7 + 1
5	Types and classification of waste: Air, Liquid and Solid, Characteristics of Waste. Basic units of an Effluent treatment plant. Biomedical Waste, Hazardous Waste, Municipal Solid Waste (MSW)	7 + 1

Learning Resources

1	Text Books	Environmental Biology, P.D. Sharma, Rastogi Publication, Merrut.
		Environmental Pollution, S.A. Abbasi, Crescent Publication , New Delhi.
2	Reference Books	Air Pollution, H.G.Parkin
		Environmental Concerns and Statergies, T.N.Khoshoo, Ashish Publication House, New Delhi.
3	Suppl. Reading Material	Communities and Ecosystem, R.H.Whittakar, McMillan NewYork.
		Global Environmental Challenges, James G, Orient Longman
4	Websites	www.cacIndia.org, www.cprecc.org
5	Journals	Ecologia
		Pollution Research

Semester	II	Credits	3
Course Code	204	Course Type	Full Credit
Course Title	Environmental Economic and Indian Environmental Scenario		

Course Objectives:

1	To understand Indian environmental scenario.
2	To understand environmental movements on India.
3	To understand green marketing- environmental market.

Syllabus:

Unit Number	Contents	Number of Sessions
1	Environmental economics: Introduction to WTO and international trade, environmental trade, green EDA, Natural Resources, Accounting, Green Accounting, Environmental communication, GRI reports.	7 + 1
2	State of Environmental in India : State of India's environment report by CSE and MOEE. Survey of the environment by Hindu , State government , environmental status reports, environmental compliance status of industries. State of the Quality Standard of CPCB , State government and WHO.	7 + 1
3	Major Environmental Organization and events: Green piece movements. WWF , UNEP, UNECD – 1992(Stockholm Conference, Earth summit, RIO Declaration, Action plan and Agenda 21) WBCSD, WRI, GRI, World Bank.	7 + 1
4	Environmental Movements in India – Case studies- silent Valley, Tehri-Dam, Chpko Movement, Sardar Sarovar Dam Controversy, Enron Power project conhovorsy, Thapar Dupant Nylon Project, ENVIS.	7 + 1
5	Green Marketing : Emergence of new environmental market, Green Marketing, Environmental strategy and Competitive advantage, Green supply chain Management, Eco Designing, Eco-labeling.	7 + 1

Learning Resources:

1	Text Books	Economic Environment of Business – S.K. Mishra
2	Reference Books	The Economics of Development and Planning- M.L. Thingan Economic Development of Business- Dr. M. Adhikari
3	Supplementary Reading Material	Economic Environment of Business – Eases Dr. M. Adhikari

4	Websites	-
5	Journals	-

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Semester	II	Credits	3
Course Code	205	Course Type	Full Credit
Course Title	Project		

Course Objectives:

- 1 To cultivate ability to conceive on idea pertained to Environmental Problem.
- 2 Work out modus-operandi & deduce inference.
- 3 To have a first hand experience of involving & handling any local Environmental Problem.

Syllabus:

Unit No.	Content	No of Sessions.
1	Determining the theme of work & their there by precise area of work. Review of literature. Methodology & fieldwork. Deducing inference from observations. Completion and presentation of the report.	45

Learning Resources

1	Text Books	Research Methodology- C.Rajendra Kumar A.P.H Pub, Delhi.
		Research Methodology- C R Kothari, New Age International Publication, New Delhi.
2	Reference Books	Research Methods: Tips & Techniques. G. Vijaya Laxmi.
		Research & Writing across the disciplines. P.Ramdas.
3	Suppl. Reading Material	Research Methodology- R Panneerselvam.
4	Websites	www.journals.elsevier.com
5	Journals	Environmental Research- A Multidisciplinary Journal of Environmental Sciences, Ecology, and Public Health

Annexure II
Equivalence of previous syllabus with the proposed syllabus.

OLD PATTERN			NEW PATTERN	
Semester –I			Semester –I	
Principles & Practice of Management	101		Principles & Practice of Management	
Basics of Management Accounting	102		Basics of Management Accounting	
Introduction to Environment	103		Introduction to Environment	
Introduction to Environment Management	104		Introduction to Environment Management	
Environmental Legislation	105		Environmental Legislation	
Written Analysis & Communication Skill	106		Written Analysis & Communication Skill	
Semester –II			Semester –II	
Natural Resource Management	201		Natural Resource Management	
Environmental Management & EIA	202		Environmental Management & EIA	
Environmental Pollution & Disaster Management	203		Environmental Pollution & Disaster Management	
Environmental Economics & Indian Environmental Scenario	204		Environmental Economics & Indian Environmental Scenario	
Project	205		Project	