

CIRCULAR

UNIVERSITY OF MUMBAI

No.UG/ 331 of 2005

MUMBAI-400 032

11th August, 2005

The Director,
Garware Institute of Career Education and Development
University of Mumbai,
Vidyanagari,
Santaacruz(East),
MUMBAI-400 098.

Sir,

I am to inform you that your proposal for Three-Months Part-Time Certificate Course in Environmental Quality Management at the Garware Institute Of Career Education and Development has been accepted by the Academic Council at its meeting held on 14th June, 2005 vide item No.7.9 and subsequently approved by the Management Council at its meeting held on 18th June, 2005 vide Item No.4 and that in accordance therewith three-Months Part-Time Certificate Course in Environmental Quality Management is introduced by the University at the Garware Institute of Career Education and Development from the academic year 2005-2006.

Further that in exercise of powers conferred upon the Management Council under Section 54(1) and Section 55(1) of the Maharashtra Universities Act, 1994, it has made the Ordinances 5542 and 5543 and Regulations 5206, 5207, 5208 and 5209 relating to the three-Months Part-Time Certificate Course in Environmental Quality Management including scheme of papers syllabus etc., is passed as per Appendix and that the same has been brought into force with effect from the academic year 2005-2006.

MUMBAI-400 032

AC/7.9/14.06.05

MC/04/18.06.05

Copy to :-

The Director, Board of College and University Development, the Deputy Registrar (Eligibility and Migration Section), the Director of Students Welfare, the Personal Assistants to the Vice-Chancellor, the Pro-Vice-Chancellor, the Registrar and the Assistant Registrar, Administrative sub-center, Ratnagiri for information.

The Officer on Special Duty-cum-Controller of Examinations (10 copies), the Finance and Accounts Officer (2 copies), Record Section (5 copies), Publications Section (5 copies), the Deputy Registrar, Enrolment, Eligibility and Migration Section (3 copies), the Deputy Registrar, Statistical Unit (2 copies), the Deputy Registrar (Accounts Section), Vidyanagari (2 copies), the Deputy Registrar, Affiliation Section (2 copies), the Director, Institute of Distance Education, (1 copy) the Director University Computer Center (IDE Building), Vidyanagari, (2 copies) the Deputy Registrar (Special Cell), the Deputy Registrar, (PRO) . the Assistant Registrar Academic Authorities Unit (2 copies) and the Assistant Registrar, Executive Authorities Unit (2 copies) . They are requested to treat this as action taken report on the concerned resolution adopted by the Academic Council referred to in the above Circular and that separate Action Taken Report will be sent in this connection. the Assistant Registrar Constituent Colleges Unit (2 copies), BUCT(1 copy), the Deputy Account, Unit V(1 copy), the Director, Centralize Computing Facility (1 copy), the Receptionist (1 copy), the Director, Centralize Computing MUASA (1 copy), the Superintendent, Post-gradua

for REGISTRAR



14/6/05

UNIVERSITY OF MUMBAI'S
GARWARE INSTITUTE OF CAREER EDUCATION AND DEVELOPMENT
CERTIFICATE COURSE IN ENVIRONMENTAL QUALITY MANAGEMENT

O. 5542 TITLE OF THE COURSE :

CERTIFICATE COURSE IN ENVIRONMENTAL QUALITY MANAGEMENT

O. 5543 ELIGIBILITY :

Interdisciplinary, Graduate in science/engineering/technology or in equivalent discipline /Diploma in Engineering/Technology with 2 years experience are eligible to apply.

Preference would be given to the candidates having working experience in industry/ statutory authorities/ academic institutions/ consultancy firms/NGOs etc.

R. 5206 DURATION :

3 months (i.e. 5 days in a week, 3 hrs a day)

R. 5207 INTAKE CAPACITY : 30 (thirty) per batch

R. 5208 SELECTION PROCEDURE :

Based on personal interviews of short listed candidates.

EXAMINATION PATTERN :

Paper One	Environmental Legislations, Policy and Planning
Paper Two	Waste Management Strategies
Paper Three	Environmental Compliance Monitoring
Paper Four	Environmental Management System
Paper Five	Environmental Effects & Health
Paper Six	Project Work

Each paper carries 30 hrs. of teaching and 100 marks

DETAILED SYLLABUS :

1.0 Environmental Legislations, Policy and Planning:

Basic concepts and management needs under following environmental laws-

- 1.1 Water (P & C P) Act, 1974 & rules
- 1.2 Water (P & C P) & Cess Act, 1977 & rules
- 1.3 Air (P & C P) Act, 1986 & rules
- 1.4 Environment (Protection) Act, 1986
- 1.5 Environment (Protection) Act, 1986 & rules notified there under, such as-
 - Hazardous Wastes (Management & Handling) Rules, 1989 with amendment Rules, 2000
 - MSIHC Rules, 1989 with amendment Rules, 2000
 - Bio medical Wastes (Management & Handling) Rules, 1998
 - Solid Wastes (Management & Handling) Rules, 2000
 - Ozone Depleting Substances (Regulation and Control) Rules, 2000.
 - Noise Pollution (Regulation and Control) Rules, 2000.
- 1.6 Public liability Insurance Act, 1991
- 1.7 Related provisions under Factories Act
- 1.8 Policy issues and Planning

2.0 Waste Management Strategies:

Preventive and control policy options under Water Act, Air Act and Environment (Protection) Act supported with case studies. Applicable treatment and disposal options for air, water, hazardous and solid wastes including Bio medical wastes.

2.1 Water & Waste Water management :

Waste management options for waste waters with details such as primary, secondary and tertiary treatment technologies. Waste minimization options covering case studies of equipment redesigning, process modification, process reformulation, good house keeping, on-site and offsite recycle/reuse/recovery options for various sectors of the industries. Various designated modes for scientific disposal of the wastes, pollution prevention pays (PP) and polluters to pay principle (3P) options etc.

2.2 Air Quality Management :

Waste Management options for prevention & control of air emissions broadly covering control equipments for particulate emissions, SO₂ and NOX emissions, HC (Hydrocarbons) and VOCs (Volatile organic compounds), TOXIC gas emissions etc. and preventive measures thereof, with the help of case studies.

2.3 Residues Management :

Waste Management Option for prevention & control of hazardous wastes, solid wastes and bio-medical wastes. Waste Management through renewable energy sources.

2.4 International agreements :

Waste Management requirements in compliance to Government obligations covering broadly

1. Montreal Protocol on substances that deplete the Ozone Layer ((Ozone Depleting Substances (Regulation and Control) Rules, 2000. Notification dated July 17, 2000))
2. The Basel Convention on the transboundary movements of Hazardous Wastes. (Hazardous wastes (management & Handling) Amendment Rules, 2000. Notification dated Jan 6, 2000) and
3. The Framework Convention on Climate Change
4. Others if any.

2.5 Litigations :

Avoiding litigations through Management efforts supported with case studies.

3.0 Environmental Compliance Monitoring:

3.1 Mandatory Compliance :

Verification of Obligatory requirements under letters of consent & authorization, government orders and notifications. Evolution of a self-regulatory system through setting up a Effective Compliance and Enforcement Program (ECEP). Monitoring compliance needs. New trends and opportunities for maximizing compliance.

3.2 Emission Monitoring :

Brief description of EPA Standards for treatment and disposal of all types of wastes, Common treatment and disposal facility standards, Sampling and analytical methodologies for water & waste waters, air emissions, noise measurements, auto exhaust emissions, hazardous and solid wastes etc. Standard operating procedures (SOPs), data quality objectives, QA and QC procedures, good laboratory practices, Data acquisition and evaluation, Data validation & information management.

3.3 Waste Transport Compliance :

Procedures for waste transportation within & outside the state, TREM card, Labeling, Packaging, Manifest system etc.

4.0 Environmental Management Systems:

4.1 Environmental Impact Assessment (EIA) :

Basic description of EIA process, need for public participation, state and central environmental clearance procedures, methodologies for conducting EIA studies, prediction of impacts, technologies for treatment and disposal of waste, EMP and DMP needs with HAZAR & HAZOP studies, occupational health surveillance program, preparation of report thereof.

4.2 Environmental guidelines :

Clean technology guidelines, industrial siting guidelines, forest conservation guidelines, MSME guidelines specific to isolated storages, onsite & offsite emergency plans, mutual aid systems etc.

4.3 Environmental Audit & Waste Audit :

Basic concept in conducting environmental audit and submission of environmental statement. Conducting waste audits periodically as a compliance management tool and as a part of self-regulation.

4.4 Quality Systems :

Elements of Environmental Management Systems (EMS i.e. ISO 14000), Inter-linkages between business, society and environment, What is standards, Demings PDCA cycle etc.

The organizational structure, responsibilities, practices, procedures, processes, and resources for developing, implementing, achieving, reviewing, and maintaining the environmental policy and EMS.

Stakeholder Concerns and Sustainable Development covering role and their relation between different stakeholders i.e. customers, financial stakeholders, internal stakeholders, community and biosphere etc. Managing stakeholders with the tools of ISO 14001.

The relationship between the ISO 14000

ISO certification procedures, training, awareness & competence, internal & external benefits to companies from ISO certification, few examples of corporate environmental policies.

4.5 Emergency Planning - Concept of Emergency, emergency/ planning, procedure, implementation, work drills, onsite/offsite emergency, planning for natural disaster.

5.0 Environmental Effects & Health:

5.1 Environmental Change & Health :

Source of pollution exposure to pollutant, SO₂, NO_x, particulates including RSPM, toxic metals, toxic organics including pesticides, asbestos, VOCs & HCs.

5.2 Effects of changing Environments :

Effects of changing disease pattern with examples of environmental diseases like cancer, birth defects, respiratory diseases, heavy metal induced diseases.

5.3 Environmental Chemicals Metabolism :

Biotransformations and its mechanism, consequences, factors influencing biotransformation.

5.4 Occupational diseases :

What is an Occupational Disease? - Pneumoconiosis - Silicosis - Asbestosis - Byssinosis - Bagiosis - Lead Poisoning - Mercury Poisoning - Manganese Poisoning - Anthrax - Notifiable Diseases : Dangerous Operations - Attention on the possible Symptoms and Target Organs - Occupational Carcinogens.

5.5 Synergistic effects:

Synergistic Effects :

What is Synergistic Effect? - Enhancement in toxic effects due to extraneous factors. Reversible and irreversible effects.

Cause - Effect Relationship

Acute or Chronic Exposure to Toxic Chemicals - Incidence Related to Exposure Concentration and Duration - Exposure to Noise : Factors influencing the incidence of hearing Impairment Cases - Exposure to Thermal Stress - Usefulness of the Study of Cause: Effect Relationship.

5.6 Environmental Damage and its cost

5.7 Major Control System

6.0 Project Work

R. 5209 Attendance, Examinations, Standards of Passing

1. Students will have to attend the classes regularly to complete the certificate course. No student will be permitted to appeal for the examination unless he/she completes 75% attendance.
2. The total marks allotted for the certificate course will be 600.
3. After the completion of the syllabus of the course, the final examination will be conducted at the Institute.
4. The field work or project work will carry 100 marks. This will be evaluated by the co-ordinator and faculty member concerned.
5. The minimum percentage required for passing each of the examination will be 50%.
6. The students securing 50% marks will be declared as "pass" in the "second class".
7. The student securing 60% marks will be declared as "pass" in the "first class".