Ref: No.CUK/ACA/IIIrd AC/5th Meeting/736/2019-20/      Dated, 15th July 2019

## MINUTES OF THE 5TH MEETING OF THE 3RD ACADEMIC COUNCIL HELD AT 10.30 AM ON 28TH JUNE 2019 AT CUK.

**AC 03:05:01**      *Approval of the minutes of the last Academic Council-Reg:-*

The Minutes of the Academic Council meeting held on 12.12.2018 was placed before the Academic Council for approval.

Decision: Minutes approved

**AC 03:05:02**      *Approval of the Action Taken Report - Reg:-*

The Action Taken Reports (ATR) of the Academic Council Meeting held on 12.12.2018 was placed before the Academic Council for approval.

Decision: ATR approved

**AC 03:05:03**      *CUCET be made mandatory for NET Qualified candidates - Reg:-*

As per clause 1 of Regulations No.1/2018 for the award of the degree of Doctor of Philosophy (PhD) of the Central University of Kerala 2018 dated 06.08.2018, application for admission to the PhD programme will be invited twice in a year i.e. June-July and December ¬January. The June – July admission is done through the CUCET. Only JRF and similar fellowship holders are exempted from the CUCET score. However they are required to register through the CUCET if they are seeking admission during this round. The December- January admission is exclusively reserved for to JRF and similar fellowship holders.

It is often creating confusion with the UGC-JRF and UGC-NET (Only) qualifications as an exemption for appearing for CUCET for Ph.D. Admission.
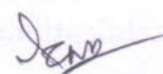
Therefore, it is proposed that the UGC-NET qualified candidates have to appear invariably for CUCET for admission for Ph.D. This is subject to approval by EC also.

**Decision: The Academic Council approved the proposal and recommended to EC for its consideration.**

**AC 03:05:04**      *Academic Performance Review- MHRD- Reg:-*

a) The Vice Chancellors meeting held on 15.12.2018 at Shastri Bhawan, New Delhi with Secretary, MHRD and Chairman of UGC to review the implementation status of all parameters indicated by the Central Universities in the Tripartite MoU (CUK, MHRD & UGC). In accordance with the decisions of the meeting the following Circular were issued wide Circular No. CUK/ACA/728/2018-19/1877 &1878 , dated 13.03.2019

  i) To discourage research in irrelevant areas. When Fellows are being admitted for PhDs, the topics for the thesis should be in accordance with the national priorities. Allotting privilege topics to the PhD students should be dispensed with;

  ii) Therefore, all the Heads of the Department is hereby directed to convene the meeting of the Faculties and to prepare a shelf of project to be taken for research study pertaining to their subject considering national priorities. The student can opt from the shelf of project.

b) i. Take advantage of the unique initiative of online professional development of in-service teachers' using MOOCs platform SWAYAM- Annual Refresher Programme in Teaching (ARPIT) launched by MHRD. It has been decided by the UGC that successful completion of the courses offered under the ARPIT programme with 40 hour of instruction material with a proctored examination will be treated as equivalent to one Refresher Course for the purposes of Career Advancement. Compulsory enrollment of all the teachers in this program may be ensured.

b) ii. Actively participate in the recently launched scheme "impactful Policy Research in Social Sciences (IMPRESS)" and encourage their faculty members to send proposal to ICSSR. Each CU at least has one project under this scheme. Professors may also be advised to participate in other schemes of DST and MHRD such as IMPRINT, SPARK and STARS.

b) iii. Nominate good researchers to IPR Cell for patents.

b) iv. Discourage Non-NET in order to ensure good quality research scholars/papers.

b) v. Encourage research publications and each teacher should have at least two publications in a year.

The Circulars issued by the University and Minutes of the Tripartite MoU meeting of Vice-Chancellor's are placed before the Academic Council for appropriate decision.

**Decision: The Academic Council discussed the matter in detail. During the discussion on a(i) and (ii) the VC has pointed out that MHRD had already issued a clarification regarding the subject that it was a matter discussed in VCs conference and the discussions were recorded and minutes prepared. It was not the decision of MHRD. VC further pointed out that the circular was of advisory nature and it is for the HODs to consider it or not. The clarification given by VC has been accepted. Other agenda items were also approved.**

**AC 03:05:05**          *Introduction of Vocational Courses- Reg:-*

The Vice Chancellors meeting held at Shastri Bhawan, New Delhi to review the implementation status of all parameters indicated by Central Universities in the Tripartite MoU (CUK, MHRD & UGC). In accordance with the decisions of the meeting it is also decided to introduce vocational courses not only in service sectors but also on other important areas like agriculture sector etc.

**Decision:-**

The AC welcomed the proposal. To have greater thrust in this area Dr. Ifthikar Ahmed has been nominated as the Coordinator for drafting the proposal and follow up work by the AC.

**AC 03:05:06**     **Commencement of P.G. Diploma Courses in Dept. of Hindi - Reg.**

The Dept. of Hindi in its BoS 08.03.2019 has proposed to start following Hindi Diploma courses from this Academic Year i.e. 2019-2020. The Competent authority has approved the proposal on 16.04.2019 subject to Academic Council ratification. **(Annexure - IV)**

i.     Post –Graduate Diploma in Mass Communication in Hindi

ii.     Post –Graduate Diploma in Translation and Office Procedure

**Decision: AC Ratified the Proposal. Credits shall be as per the CBCS/Diploma Regulations of CUK. VC pointed out that other Departments can also try for similar proposals. The HoD EVS should take action to introduce a PG diploma in EVS with the support of External agencies**

**A sub-committee has been constituted to frame guidelines for the operationalization of Certificate/Diploma/PG Diploma of CUK with following members: HOD Hindi (Coordinator), HoD Education, HoD English and Dr TJ Joseph Asst Professor, Economics .**

**AC 03:05:07**     **Approval of the BoS Minutes and Syllabus – Reg.**

The following Departments have conducted their BoS for revision of syllabus. The revised syllabus is attached;

i.     **Dept. of Hindi:-**

The BoS met on 08.03.2019, and approved the syllabus of MA Hindi and Ph.D. Course Work **(Annexure V-A)**

The revised syllabus of Ph.D. Course Work and MA Hindi and Comparative Literature to be implemented from 2019- academic year onwards.

**Decision: The Academic Council approved the syllabus containing 72 credits incorporated with many contemporary items.**

ii.   **Dept. of Mathematics:-**

The BoS Meeting of Dept. of Mathematics held on 07.02.2019 has approved the revised syllabus of M.Sc. Mathematics to be implemented from 2019 onwards.

**Decision: The Academic Council approved the proposal (72 credits)**

iii.   **Dept. of Plant Science:-**

The BoS Meeting of Dept. of Plant Science held on 15.04.2019 has proposed a revised syllabus of M.Sc. Plant Science. This is to be made effective from 2019- onwards.

**Decision: The Academic Council approved the proposal in principle. The AC suggested 8 credits for both dissertation and viva voce together. The AC further pointed out to have Continuous Assessment of 40 marks and it is to be moderated by guide. Dissertation requires to be treated as a Core Course with double valuation.**

iv.   **Dept. of Environmental Science:-**

The BoS Meeting of Dept. of EVS held on 03.06.2019 has proposed a modified syllabus (Skeleton) and scheme of Evaluation for M.Sc. Environmental Science effective from 2019 onwards. **(Annexure V-D)**

**Decision: Resolved to approve the syllabus with retrospective effect 2018-19. AC directed the department to change the Credits for core courses from the existing 3 to 4 credits.**

**AC resolved to have only one external evaluation and one internal evaluation for each core course.**

v.   **Dept. of Computer Science:-**

The BoS Meeting of Dept. of Computer Science held on 05.01.2019 (Minutes Enclosed) has proposed the following. **(Annexure V-E)**

i.   Revised programme Structure for M.Sc. Computer Science(2019 Onwards).

ii.    Establishment of Computational Intelligence

iii.   Amendment on the Eligibility conditions for M.Sc. Computer Sciences(from next year onwards)

**Decision: AC approved the proposal.**

**The Academic Council also constituted a committee to revisit the issue of credits to be assigned to Elective courses with Controller of Examinations, Dr. Govinda Rao, Dr. Rajendra Pilankatta and AR (Academic) to finalise the credit matter.**

### AC 03:05:08   New Departments – Commencement -Reg.

The UGC vide letter No. F.No.1-1/2013(CU) Vol-XVII dated 06.03.2019 has conveyed the approval of the University Grants Commission for commencing 4 New Department and also confirmed the establishment of Dept. of International Relations (UG). Accordingly**(ANNEXURE X)**.

1. **Dept. of Management Studies:-** A meeting of the duly constituted Consultative Committee for **MBA** Programme was held on 8.05.2019 and 29-30 May 2019 for deliberation on implementation of MBA Scheme, Regulation, Syllabus and qualification for faculty recruitment. Proceeding of the Committee is placed at **(Annexure VI)** for perusal please. The total credit will be 100 with 4 semesters.

   The Committee recommended commencing of the MBA Programme at the Central University of Kerala during the Academic year 2019-20 in accordance with UGC guidelines /AICTE regulations.

   The regulations framed by the Consultative Committee may be adopted in the University for Commencement of MBA Programme.

2. **Dept. of Tourism Studies:- MBA in T&TM**. The Consultative Committee of Tourism and Travel Management met on 16.05.2019 and 06.06.2019 at CUK Periya and finalized the MBA as MBA (Tourism and Travel Management). The total credit will be 100 with 4 semesters. **(Annexure VII)**

3. **Dept. of Commerce and International Business:- M.Com**. The Consultative Committee met on 18.05.2019 and 07.06.2019 and finalized the syllabus of Commerce and International Business **(Annexure VIII)**.

The Consultative Committee finalized two programmes i.e. M.Com and M.Com (International Business) however, recommend the University to offer M.Com from this academic year.

Recommended for establishing separate Computer Lab with minimum 30 Computers.

Investment of Rs.5 Lakhs for books, Journal including e resources in this regard.

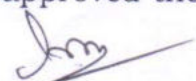80 credits minimum and 12 credits for electives.

4. **Dept. of Kannada:-** the Consultative Committee met on 16.05.2019 and 07.06.2019 at periya finalized the syllabus of **MA Kannada** four Semester programme. The Syllabus contains 15 core papers and 12 elective papers. **(Annexure IX)**

**Decision: Academic Council noted and approved the syllabus prepared by consultative committee of the new 4 Departments with suggestion to change the word 'open' as Elective. The Syllabus will be revisited once BoS of the Department become functional.**

| | |
|---|---|
| **AC 03:05:09** | **CUK Ordinance 38 –Ordinance on the Recognition of Associations for Teachers and Non-Teaching Employees of the University –Reg.** |

The Executive Council in its meeting vide items No. EC: 03:11:16, held on 24.01.2019 has approved the Ordinance on the Recognition of Associations for Teachers and Non-Teaching Employees of the University. The E.C. authorized the VC to notify the Ordinance.

As Per Statute 14 (d) of CU act the Academic Council is the authority to prepare the Ordinances of the University and recommend the same to the Executive Council for approval. Considering the Emergency situation, as per Clause 11(3) of the University Act 2009, the Vice-Chancellor has approved the

draft Ordinance -38 (Mentioned as 40 in the EC Minutes) and after legal vetting submitted the same for the approval of the Executive Council.

**Decision: The Academic Council approved the Ordinance with dissent of Dr. Joseph Koyippally, Dr. Vilfred, Prof. (Dr.) Ajith Kumar and Dr. T J Joseph on the 33% of working strength mandated for Association to have its approval and existence as per Ordinance 38. However the Vice-Chancellor pointed that the matter is under the consideration of the Hon. High Court and hence further implementation of the Odinance-38 will be as per the decision of the Hon. Court.**

**AC 03:05:10**      *Awarding Degrees during Convocation 2019 - Ratification – Reg.*

The Controller of Examination has informed that 692 Candidates (UG 45, PG. 635 and Ph.D. -12) have applied for receiving the Degree in the Third convocation held on 02.03.2019. Since the time was insufficient to convene the meeting of the Academic Council, the Vice-chancellor by exercising his powers under section 11 (3) of University Act 2009 has approved awarding of the degrees.
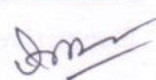
**Decision: The Academic Council ratified the action.**

**AC 03:05:11**                 **Extension of Ph.D. Registration**

As per the Order No. CUK/ACA/Ph.D. Physics/11/14 dated 04.04.2019 based on the recommendation of The Department Research Committee, Dept. of Physics dated 16.01.2019, the Ph.D. Registration of following scholars have been extended as follows(ANNEXURE XIV).

| l.No. | Name of Scholar & Reg. No. | Dt. of Registration. | Registration period completed | Extension required |
|---|---|---|---|---|
| 1 | Mr. Shareef. M. MPH071301 | 05.02.2013 | 04.02.2019 | 1 year 05.02.2019 04.02.2020 |
| 2. | Ms. Subha A, MPH071302 | 04.02.2013 | 03.02.2019 | 1 year 04.02.2019 03.02.2020 |

During this period they are not entitled for any fellowship.

As per UGC regulation 2016 the maximum duration of Ph.D. is Six years which are extendable by one year for Male and 2 years for female. Extension beyond the above limits will be governed by the relevant clauses as stipulated in the statute/Ordinance of the University.

As per CUK Ordinance 12, clause 2, Extension beyond the above limits will be decided by the Academic Council/Executive Council of the University on the basis of the recommendations of the Research Advisory Committee. As per Clause 30 (iii), the DRC shall be competent to recommend to the Director Research to extend the period of Registration for one more year on the recommendations of the RAC based on satisfactory progress made by the research students.

Accordingly, the Registration of Research of above scholars has been extended by one year as indicated against their name.

**Decision: The Academic Council ratified the action.**

| AC 03:05:12 | PBAS of Teachers |
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The committee constituted vide Order CUK/PBAS/TEACH/2017 dated 07.12.2018, to study and finalize the procedure for performance Based Appraisal System for Teachers has recommended the University to call for performance Based Appraisal System annually from all faculty members to be submitted within three months at the end of every academic year as a mandatory part for CAS Promotions.

The Minutes of the committee and proforma developed by the Committee for CUK incorporating the latest UGC Regulation 2018 is placed before the Academic Council for approval.

**Decision: The Academic Council approved revised PBAS proforma.**

| AC 03:05:13 | Consideration of PhD Thesis submission as a vacancy for Research Guide- Reg. |
|---|---|

The Central University of Kerala Ordinance and Regulations was silent on the stage of arising of PhD vacancy under a Research Guide. i.e, whether at thesis submission time or after Open Defence. It is observed that the time gap between thesis submission and conduct of open defence vary from Institution to Institution. Hence, a suitable policy decision on the stage at which vacancy can be treated as arisen is to be made by the AC.

**Decision: The Academic Council did not approve the agenda. However, the Academic Council resolved to consider requests on case to case basis depending on the merit. On this particular aspect, AC resolved to collect a representation from Dr. Sudha, Associate Professor, Animal science and authorized VC to take a decision.**

| AC 03:05:14 AA | To consider amendment in the Revised CBCS Regulations for PG Programmes -*Reg:-* |
|---|---|

As per clause 54 of Revised CBCS Regulations, "In determining the grades for courses, Continuous Assessment shall carry 40% weightage, while End Semester Assessment shall carry 60% weightage. For Dissertation, weightage for Continuous Assessment is 40% and for viva it is 60%". It is submitted by the Head, Dept. of International Relations and Dept.of Public Administration, that no Continuous Assessment is possible for Dissertation/Viva Course.

Hence clause 54 may be amended as follows.

> "In determining the grades for courses, Continuous Assessment shall carry 40% weightage, while End Semester Assessment shall carry 60% weightage. For dissertation, there shall be no Continuous Assessment"

Further, clause 54 (a) may be inserted as follows.

54 (a) For PG Degree programmes, out of 100 marks for Dissertation/Viva, 40 marks is to be awarded by internal examiner, 40 marks by external examiner for Dissertation and 20 marks by external for Viva voce.

**Decision: The Academic Council resolved to adopt the decision on agenda item 03:05:07.**

**AC 03:15:**
**AA**

**To consider amendment in the Regulations for BA programme in International Relations - *Reg:-***

As per clause 9.3 of BA Regulations, "In determining the grades for courses, Continuous Assessment shall carry 40% weightage, while End Semester Assessment shall carry 60% weightage. For Dissertation, weightage for Continuous Assessment is 40% and for viva it is 60%".

But as per clause 10.3, there shall be no continuous assessment for Dissertation/Project work.

Thus there exists contradiction between these two clauses.

Hence following modifications are proposed.

1. 9.3 may be amended as follows. "In determining the grades for courses, Continuous Assessment shall carry 40% weightage, while End Semester Assessment shall carry 60% weightage. For dissertation, there shall be no Continuous Assessment"

2. Further, 9.3 (a) may be inserted as, "Out of 100 marks for Dissertation/Viva, 40 marks is to be awarded by internal examiner, 40 marks by external examiner for Dissertation and 20 marks by external for Viva voce."

3. 10.3 may be amended as, "Two copies of the report of the Project/Dissertation Work shall be submitted by the student in the prescribed format to the Department before the completion of the sixth semester."

   A new CBCS Form III (a) has been designed for Dissertation and appended. Form II need not be submitted. The same may be approved.

**Decision:  The Academic Council resolved that BOS be convened and a new syllabus be prepared by the Department at the earliest and submit to university for further consideration.**

**AC 03:05:16**
**AA**

*To consider levying of late fee for delayed application for additional examination -Reg:-*

As per clause 76 & 78 of Revised CBCS Regulations, a student getting F grade shall remit the fees for additional examination within 5 teaching days and apply within 3 weeks from the date of publication of the results. Since late

submission of applications is increasing day by day, a late fee may be imposed to discourage such instances as follows.

i) Till 10 working days from the date of publication of the result : NIL

ii) For delay from 11th day till 21st day: Rs.100/- per paper

iii) Beyond 22nd day till one month: Rs.200/- per paper, with special permission from V C.

**Decision: The Academic Council approved the proposal.**

**AC 03:05:17**
**AA**
**Equivalency of M.Sc. Animal Science to M.Sc. Zoology with a retrospective effect - *Reg:-***

3rd meeting of IIIrd Academic Council has approved the proposal of Dept. of Animal Science for changing of name of M.Sc. Animal Science to M.Sc. Zoology w.e.f. 2019-20.

The University has later received requests from pass out students of M.Sc. Animal Science that they are facing difficulties while applying for research or teaching positions outside the Kerala State and also during interview and verification process. The name Animal Science is often confused with the veterinary Science course. The equivalency Certificate issued by University of Kerala could be used only in the state of Kerala.

Hence, in order to cater the employment related needs, a Notification on equivalency of M.Sc. Animal Science as M.Sc. Zoology may be approved with retrospective effect.

**Decision: Academic Council rejected the proposal. The AC suggested that whenever requests are received HOD may issue Equivalency Certificate to the students without delay.**

**AC 03:05:18**
**AA**
**Exemption from CBCS Regulations clause 54 - *Reg:-***

The Heads Dept. of International Relations and Politics and Public Administration & Policy Studies have informed that as per the provisions of CBCS regulations clause 54, for dissertation, weightage for continuous assessment is 40% and for viva it is 60%. As per the approved syllabus of MA IR&PS and PA&PS dissertation carries a weightage of 4 credits and

viva 4 credits, i.e. Dissertation and Viva Carries 200 marks. Viva is comprehensive in nature, as it covers all the courses included in the programme. Continuous Assessment is not there for the dissertation, considering the practical difficulty in calculating the same. The mismatch between the provisions of CBCS Regulations and the approved Syllabus will affect the declaration of Results of MA (IR&P and PA&PS).

Therefore, both departments have requested to exempt the provisions of CBCS Regulation Clause 54 for MA (International Relations and Politics and Public Administration & Policy Studies.

**Decision: The implementation of resolution AC03:05:07 will resolve the problem**

| AC 03:05:19 AA | Regulations for Post – Graduate Diploma in Yoga Programmes under Choice Based Credit and Semester System -Reg. |
|---|---|

The Academic Coordinator, Dept. of Yoga has proposed the Regulations for Post – Graduate Diploma in Yoga Programmes under Choice Based Credit and Semester System. The Examination Branch after verification has suggested some correction and to revise the Regulations. Accordingly, the revised regulation is placed before the Academic Council.
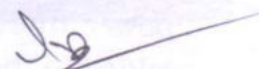
**Decision: Academic Council approved the Regulations containing 36 credits for 2 semesters.**

| AC 03:05:20 AA | Approval of the BoS Minutes and Syllabus – Reg. |
|---|---|

The Department of Biochemistry and Molecular Biology have conducted BoS meeting on 18.12.2018 and the syllabus of M.Sc. Biochemistry is revised. The revised syllabus to be implemented from 2019- academic year onwards.

**Decision: Academic Council approved the proposal.**

| AC 03:05:21 AA | Commencement of Certificate Course for CUK employees - Reg. |
|---|---|

As per the minutes of the meeting of Faculty Members and Hindi Officer with Vice-Chancellor on 18.03.2019 it has been decided for starting the Certificate Course for CUK employees for implementation of Official Language Policy of Govt. of India. The meeting has resolved to commence short term course for CUK employees in 2019. The Head of the Department of Hindi has proposed the details of syllabus for the course.

**Decision: Academic Council approved the proposal.**

**AC 03:05:22 AA**   **Change of name of M.Sc. Plant Science to M.Sc. Botany - Reg.**

The Academic Council meeting held on 01st June 2018, while approving the name change of Animal Science suggested that the Dept. Plant Science also may submit their proposal for title rationalization. Accordingly, the Faculty Council of Dept. of Plant Science has now proposed (26.06.2019) to retain the department name as Plant Science and to rename the M.Sc. programme as M.Sc. Botany.

**Decision: Academic Council approved the proposal and recommended EC for its consideration.**

### Minutes of Tabled Agendas

1. **Clarification on CA & ESA of LL.M Students and request for approval of Clause 39 (x)**

The LL.M course was introduced in the University in the year 2014 and since then LL.M in Administrative Law and Commercial Law was offered as specializations courses. However in the year 2018 Intellectual Property Rights (IPR) and Constitutional Law were introduced as additional specializations which were approved by the Board of Studies in Law as well as the Academic Council of the University. Thereafter the LL.M course was running with three specializations namely Constitutional Law, Criminal Law and IPR- out of which Constitutional Law (LML 5106) was opted by all students of 2018-20 batch whereas IPR(LML 5107) was opted by 14 students and Criminal Law (LML 5105) was opted by 10 students of the said batch. In this regard, it was informed by the examination branch that the newly introduced courses were not properly recorded in the exam branch and the same is to be added in the Parent regulation (CBCS) as clause 39(C) for approving the same by exercising power under clause 101 and for the forthcoming batches of LL.M it may be added to the parent regulation as clause 39(C) in the following terms.

The specializations in the department are the following ones:

(1) Administrative Law (2) Commercial Law (3) Constitutional Law (4) Criminal Law (5) Health Care Law (6) Public International Law (7) Labour Law (8) Environmental Law (9) Intellectual Property Law. A student has to undergo course in two specializations apart from compulsory core courses and elective courses. Students can choose combination of specialization course which will be offered by the department in particular year.

**Decision: Academic Council approved the proposal.**

### 2. Dept. of Law, BOS meeting minutes of Law (13/05/2019)

Concerning revision of Syllabus of IPR Criminal Law and Constitution from 2019 onwards – Reg.

The BoS minutes and resolutions on revision of syllabus of IPR (Law and Constitution was placed before the Academic Council. While approving the Syllabus, The AC insisted to follow compulsory core courses.

Regarding valuation many difficulties were expressed by the Department in getting Associate or Professor Cadres for valuation, AC resolved to invite faculties with 8 years of experience as Assistant Professor or Retired Associate Professors for this. This is only to be made applicable for Law department considering the dearth of suitable experts as expressed by HoD, Law.

**Decision: Academic Council approved**

### 3. Dept. of Education: BoS meeting minutes and revised Syllabus

**Decision: Resolved to approve the syllabus from 2019-20 onwards.**

**Approved the online MOOC courses by SWAYAM as an enhancement programme for the students.**

**40 marks for evaluation (both internal & External) & 20 marks for Viva-Voce**

### 4. The CAS Application form Developed by IQAC as per UGC 2018 regulation:

In connection with Agenda 3:05:12 on PBAS of Teachers, the IQAC also proposed before the Academic Council the CAS (Revised PBAS Promotion Proforma) application form approved by the Vice-Chancellor.

**Decision: Academic Council approved the proposal.**

कुलसचिव / **REGISTRAR**

# Programme: M.Sc. Environmental Science

**EES 5208**       EIA and Environmental Auditing

| Course Code | EES 5208 | Semester | II |
|---|---|---|---|
| Course Title | *EIA and Environmental Auditing* | | |
| Credits | 4 | Type | Core |

**Course Description**

This course examines principles, procedures, methods, and applications of environmental impact assessment. The goal of the course is to promote an understanding of how environmental impact assessment is conducted and used as a valuable tool in the engineering project management decision-making process. Also to understand the importance of auditing for the effective resource management.

**Course Outcome**

By the end of the course, students are expected to be able to:

- Understand the concept, historical context and wider importance of
- Be familiar with EIA legislation.
- Know the key steps in the EIA process.
- Understand the importance of Social Impact Assessments and public participation in the EIA process.
- Gain an overview of methods and instruments that are commonly used to develop an EIA.
- Understand the auditing process for the conservation of natural resources.

This course is modelled towards employability, entrepreneurship and skill development

**Course Structure**

The following is a detailed syllabus.

## UNIT I: Importance of EIA

History and objectives – Basis for Environment Impact Assessment, Environmental Protection Act, 1986. EIA Notification 1994 and 2006, Approach to EIA studies – mandatory requirements, project screening, scoping, environmental baselines, Public Participation best practices; terms of reference (ToR); Phases of EIA – Identification, Prediction, Evaluation, Decision making and Post Impact Monitoring, Major limitations of Environmental Impact Assessment.

## UNIT II:  Methodologies

Impact identification methods – Adhoc Methods – Checklist Methods – Matrix Methods – Network Methods, Leopold matrix, Batelle's Environmental Evaluation System (BEES), Cost-Benefit Analysis.

## UNIT III:  Assessment Procedure

Prediction and Assessment of Impacts on natural Resources – Biota, Surface Water, Ground Water, Air, Noise, Hazards, Historic and Cultural Resources, Transportation, Socio-economic relationships.

## Unit IV: Case Studies

# Programme: M.Sc. Environmental Science

Land Clearing Projects – Dam sites – EIA for Aquaculture, Steel, Mines, Hydel, Thermal, Nuclear, Oil and Gas based Power Plants – Highways projects – Industrial Projects.

## UNITI V: Environmental Auditing

Definition of Environment Audit and its importance for industries, Factories Act. Types of Audit and Definitions. Life Cycle Assessment, Environmental audit: Pre-Post audit process; International organization for standardization (ISO), ISO 14000 standards and certification, Environmental Management System (EMS), Eco labelling.

**Testing & Evaluation (if any)**

- Class room MCQ assessment
- Take Home Test
- Group Discussion
- Field visits
- Seminar
- Assignment

**References**

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- M. E. Jensen and P. S. Bourgeron (2001). A guide book for Integrated Ecological Assessments Springer-Verlag, New York, Inc.