

EVALUATION SCHEME
OF
M. TECH
(HYDRAULICS AND WATER RESOURCES ENGINEERING)
II YEAR

DEPARTMENT OF CIVIL ENGINEERING

INTEGRAL UNIVERSITY
LUCKNOW

EVALUATION SCHEME
Branch: M. Tech Hydraulics and Water Resources Engineering
(w.e.f. 2020-21)

Year – II, Semester – III

| S. No. | Course Category | Code No | Name of Subject | Periods | | | | Evaluation Scheme | | | Subject Total | Attributes | | | | | | | United Nations Sustainable Development Goals (SDGs) | |
|-------------------------------------|-----------------|---------|---|----------|----------|-----------|---|----------------------------|----|-------|---------------|------------|----------------|------------------|-------------------|-----------------|------------------------------|-------------|---|---------------------|
| | | | | L | T | P | C | Continuous Assessment (CA) | | | | Exam ESE | Employ ability | Entrepreneurship | Skill Development | Gender Equality | Environment & Sustainability | Human Value | | Professional Ethics |
| | | | | | | | | UE | TA | Total | | | | | | | | | | |
| 1 | DE | CE660 | Remote Sensing and GIS in Water Resources Engineering | 3 | 1 | 0 | 4 | 40 | 20 | 60 | 40 | 100 | √ | √ | √ | | | | SDGs 6 | |
| | | CE661 | Hydro Power Engineering | | | | | | | | | | √ | √ | √ | | | | SDGs 9 | |
| | | CE662 | Advanced Irrigation Engineering | | | | | | | | | | √ | | √ | | √ | | | SDGs 6 |
| 2 | DE | CE664 | Fluvial Hydraulics | 3 | 1 | 0 | 4 | 40 | 20 | 60 | 40 | 40 | | | √ | | √ | | SDGs 6 | |
| | | CE665 | Application of Soft Computing Technique in Hydrology | | | | | | | | | | | | √ | | √ | | | |
| | | CE666 | River Engineering | | | | | | | | | | √ | | √ | | √ | | | SDGs 6 |
| 3 | DE | CE668 | Hydraulic Structures | 3 | 1 | 0 | 4 | 40 | 20 | 60 | 40 | 40 | √ | | | | √ | | SDGs 9 | |
| | | CE669 | Watershed Management | | | | | | | | | | √ | | √ | | √ | | | SDGs 6 |
| | | CE670 | Earth and Rock Fill Dams | | | | | | | | | | √ | | √ | | √ | | | SDGs 9 |
| PRACTICAL / DRAWING / DESIGN | | | | | | | | | | | | | | | | | | | | |
| 4 | DC | CE675 | Directed Study | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 100 | 100 | √ | √ | √ | | √ | | √ | |
| 5 | DC | CE699 | M.Tech Dissertation | 0 | 0 | 0 | 4 | 0 | 60 | 60 | 40 | 100 | √ | √ | √ | | √ | | √ | |
| Total | | | | 9 | 3 | 20 | | | | | | 500 | | | | | | | | |

L – Lecture; T – Tutorial; P – Practical; C – Credits; UE – Unit Exams; TA – Teacher Assessment

Continuous Assessment (CA) = Unit Exams + Teacher Assessment

Subject Total = Continuous Assessment (CA) + End Semester Examination (ESE)

BS – Basic Sciences DC – Departmental Core

HM – Humanities OE – Open Elective

DE – Departmental Elective ESA – Engineering Science & Art (Foundation Course & Engineering Courses)

EVALUATION SCHEME
Branch: M. Tech Hydraulics and Water Resources Engineering
(w.e.f. 2020-21)

Year –II, Semester – IV

| S. No. | Course Category | Code No | Name of Subject | Periods | | | | Evaluation Scheme | | | Subject Total | Attributes | | | | | | United Nations Sustainable Development Goals (SDGs) | | |
|-------------------------------------|-----------------|---------|---------------------|----------|----------|----------|-----------|----------------------------|----|-------|---------------|------------|----------------|------------------|-------------------|-----------------|------------------------------|---|-------------|---------------------|
| | | | | L | T | P | C | Continuous Assessment (CA) | | | | Exam ESE | Employ ability | Entrepreneurship | Skill Development | Gender Equality | Environment & Sustainability | | Human Value | Professional Ethics |
| | | | | | | | | UE | TA | Total | | | | | | | | | | |
| PRACTICAL / DRAWING / DESIGN | | | | | | | | | | | | | | | | | | | | |
| | DC | CE699 | M.Tech Dissertation | 0 | 0 | 0 | 4 | 0 | 60 | 60 | 40 | 100 | √ | √ | √ | | √ | | √ | |
| | DC | CE699 | M.Tech Dissertation | 0 | 0 | 0 | 4 | 0 | 60 | 60 | 40 | 100 | √ | √ | √ | | √ | | √ | |
| | DC | CE699 | M.Tech Dissertation | 0 | 0 | 0 | 4 | 0 | 60 | 60 | 40 | 100 | √ | √ | √ | | √ | | √ | |
| | DC | CE699 | M.Tech Dissertation | 0 | 0 | 0 | 4 | 0 | 60 | 60 | 40 | 100 | √ | √ | √ | | √ | | √ | |
| Total | | | | 0 | 0 | 0 | 16 | | | | | 400 | | | | | | | | |

L – Lecture; **T** – Tutorial; **P** – Practical; **C** – Credits; **UE** – Unit Exams; **TA** – Teacher Assessment

Continuous Assessment (CA) = Unit Exams + Teacher Assessment

Subject Total = Continuous Assessment (CA) + End Semester Examination (ESE)

BS – Basic Sciences **DC** – Departmental Core

HM – Humanities **OE** – Open Elective

DE – Departmental Elective **ESA** – Engineering Science & Art (Foundation Course & Engineering Courses)

INTEGRAL UNIVERSITY

DEPARTMENT OF CIVIL ENGINEERING

PROGRAMME: Hydraulics and Water Resources Engineering

PROGRAM SPECIFIC OUTCOMES (PSO):

PSO-1: To develop the knowledge based on Hydraulics and water resources engineering and water resources management and research based on water resources engineering.

PSO-2: To use the knowledge and Experience gained from the course in uplifting the social living standards at economical cost with modern technology and new inventions for making a great Society, State and Country.

PROGRAM EDUCATIONAL OBJECTIVES (PEO):

PEO-1: Students will have sound knowledge to identify and formulate challenging in Water Resources Engineering problems and apply appropriate research methodologies to provide technical solutions that are economically feasible and sustainable.

PEO-2: Students will possess analytical and lateral thinking ability to engage in lifelong learning for professional advancement to cope up with the rapidly evolving Water Resource Engineering profession which is multi-disciplinary.

PEO-3: Students will become socially responsible and work efficiently and accept leadership roles in their profession, public services and community.

PROGRAM OUTCOMES (PO):

PO1- Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2- Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3- Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4- Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

- PO5- Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- PO6- The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- PO7- Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- PO8- Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- PO9- Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- PO10- Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- PO11- Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- PO12- Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.