

**ACADEMIC AFFAIRS OFFICE  
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**

No. Acd./122/IAPC-95

Dated: December 16, 2020

**Head, Department of Water Resources Development & Management**

The IAPC in its 95<sup>th</sup> meeting held on 09.12.2020 and 11.12.2020 vide Item No. 95.2.3 considered and approved the following proposals:

1. Introduction of new Institute Elective i.e., IWR-301: Electrical Energy Management **(Appendix-A)**
2. Revision of course contents and renaming of course title of WRN-552 as Project Planning and Management **(Appendix-B)**

**Assistant Registrar (Curriculum)**

**Encl:** as above

**Copy to (through e mail):-**

1. All faculty
2. All Heads of Departments/ Centres
3. Dean, Academic Affairs
4. Associate Dean of Academic Affairs (Curriculum)
5. Channel I/ Academic webpage of iitr.ac.in



## 12. Suggested Books:

S.No.	Name of Authors/Book/Publisher	Year of Publication / Reprint
1.	Dale R. Patrick, Stephen W. Fardo, Ray E. Richardson, Steven R. Patrick, "Energy Conservation Guidebook, CRC Press, Second Edition.	2007
2.	Barnes M., "Practical Variable Speed Drives and Power Electronics," Elsevier Publications.	2003
3.	Chapman, S. J., "Electric Machinery Fundamentals," Tata McGraw-Hill 4 <sup>th</sup> Edition.	2017
4.	Witte, Larry, Schmidt, Philip, Brown, David, "Industrial Energy Management and Utilization," Springer-Verlag Berlin.	1988

## INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

**NAME OF DEPARTMENT/CENTRE:** Water Resources Development and Management

1. **Subject Code:** WRN-552                      **Course Title:** Project Planning and Management
2. **Contact Hours:**                      **L:** 3                      **T:** 1                      **P:** 0
3. **Examination Duration (Hrs.):**      **Theory:** 3                      **Practical:** 0
4. **Relative Weightage:** **CWS:** 20-35      **PRS:** 0      **MTE:** 20-30      **ETE:** 40-50      **PRE:** 0
5. **Credits:** 4                                      **6. Semester:** Autumn                                      **7. Subject Area:** PCC
8. **Pre-requisite:** Nil
9. **Objective:** To impart knowledge about Project Planning & Management, CPM, PERT and other operational management techniques for development and management of water resources projects.

### 10. Details of the Course

S.No.	Contents	Contact hours
1.	Definition of project and project management; Project development cycle; Project scope and time management; Work break down structure; Project life cycle; Project stakeholders & organizations; Project performance indicators; Characteristics of water resources projects	6
2.	Project feasibility, appraisal, and financing; Time value of money; Project cost estimation and cost management	6
3.	Contract Management for works, goods and services; FIDIC contract conditions	3
4.	Risk and uncertainties in project planning, construction and operational phases; Project risk management; Decision making under risk & uncertainties	4
5.	Applications of System Design Techniques in project management – linear programming - transportation & assignment Problems	6
6.	Network development for project planning, Critical Path analysis in scheduling, monitoring and control of construction projects; PERT analysis, Network crashing and time cost trade off; Use of computer software like Microsoft Project	9
7.	Waiting line inventory and replacement models; Techniques of resource allocation, scheduling & management	4
8.	Project monitoring systems, Line of Balance in project management control process, Project management information system.	4
<b>Total</b>		<b>42</b>

## 11. Suggested Books:

<b>S.No.</b>	<b>Name of Authors/Book/Publisher</b>	<b>Year of Publication / Reprint</b>
1.	A guide to the Project Management Body of Knowledge, 6 <sup>th</sup> ed., PMI Publication, North Carolina, USA	2017
2.	Srinath, L.S., "PERT and CPM, Principles and applications", East West Press.	2005
3.	Punmia, B.C. and Khandelwal, K.K., "Project. Planning and Control with PERT and CPM", Laxmi Publications.	2004
4.	Taha, H.A., "Operations Research- An Introduction", Pearson Education.	2005
5.	Varma, M., "Construction Planning and Management through System Techniques", Metropolitan Book Co.	1985