0944 -DIPLOMA IN INFORMATION TECHNOLOGY & ENGINEERING
SEMESTER -I
094455 SOFTWARE ENGINEERING
(Common with Computer Engineering)

RATIONALE

This subject will enable the diploma students to have awareness about software engineering, various matrics, planning about software, cost estimation, software design etc.

DETAILED CONTENTS

1. Introduction to Software (S/W) Engineering
Introduction, size factors. Quality and productivity factors. Management issues, models and waterfall, spiral, prototyping, fourth generation techniques, s/w process

2. Software Matrices Engineering
Size, function, design, oriented matrics, halstead software science Mcafe complexity

3. Planning
The development process, an organizational structure, other planning activities

4. Software Cost Estimations
Cost factors, cost estimations techniques. Staffing level estimation, estimating software maintenance costs, COCOMO

5. Software Requirements Definition
Problem analysis, requirement engineering. The software requirements specifications (SRS), formal specifications techniques, characteristics of a good SRS

6. Software Design and Implementation Issue
Fundamental design, concept design notations, design techniques, structured coding techniques coding styles, documentation guidelines

7. Verification and Validation Techniques
Quality assurance work through and inspections static analysis, symbolic execution unit testing, formal verifications. Black box and white box testing techniques

8. Maintenance Overview
Configuration management

RECOMMENDED BOOKS

1. Software Engineering Concept by Richard Fairley, Tata McGraw Hill Publishers, New Delhi
2. An Integrated Approach to Software Engineering by Pankaj Jalote, Narosa Publishing House Pvt Ltd, Darya Ganj, New Delhi 110002
3. Software Engineering – A Practitioner's Approach by RS Pressman, Tata McGraw Hill Publishers, New Delhi
4. Software Testing Techniques by B Beizer
5. Software Engineering by KK Aggarwal and Yogesh Singh
6. A Software Engineering Approach by Peter A Darnell, Phillips E, Moglis, Narosa Publishing House Pvt Ltd, Darya Ganj, New Delhi 110002