**4.6 PROGRAMMING SKILLS**

**L P**

**- 6**

**RATIONALE**

**Computer plays a very vital role in present day life, more so, in the professional life of Diploma**

**engineers. In order to enable the students use the computers effectively, this course offers**

**exposure to various engineering applications of computers in electrical engineering. The**

**practical exercises and demonstration of application software in the field of electrical**

**engineering during the course of study will help the students in getting the employment.**

**COURSE OUTCOMES**

**After undergoing the subject, students will be able to:**

**CO1: Make and edit their own AutoCAD Drawings.**

**CO2: Familiarize with MATLAB programming and Simulink.**

**CO3: Develop a program and graphs for computations the data using Matlab.**

**CO4: Create user interfaces with charts, graphs, and buttons using Open Software**

**PRACTICAL EXERCISES**

**UNIT I**

**AUTOCAD Electrical**

** Introduction to electrical CAD interface**

** Preparing circuits using electrical components**

**UNIT II**

**Electrical Circuit Simulation (Using Qucs/Similar Open Source Application)**

** Introduction to simulator interface**

** Preparing Resistive circuit with voltage and current probes**

** Preparing R-L circuit with voltage and current probes**

** Preparing R-L-C circuit with voltage and current probes**

** Preparing Diode based circuits e.g. clipper, rectifier etc.**

** Preparing logic gates based circuits**

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**UNIT III**

**My Open Lab/PyLab Works**

** Introduction to My Open Lab**

** My Open Lab Interface**

** Virtual circuit design using My Open Lab**

**UNIT IV**

**MATLAB/SciLab**

** Introduction to MATLAB**

** MATLAB Programming – input/output, graphs, functions, loops, structures**

** MATLAB programs for simple electrical circuits**

**RECOMMENDED BOOKS**

**1. Prof. Sham Tickoo, “Auto CAD Electrical”, BPB Publication.**

**2. “Auto CAD Electrical 2010 for Engineers”, Cadcim Technologies Sham, Pearson**

**Education India.**

**3. Agam Kumar Tyagi, “MATLAB and SIMULINK for Engineers”, Oxford.**

**4. Rudra Pratap, “MATLAB 7”, Oxford University Press.**

**5. Stephen J. Chapman, “MATLAB Programming for Engineers”.**

**6. R.K. Bansal, and A.K. Goel, “MATLAB and Its Applications In Engineering”.**

**SUGGESTED WEBSITES**

**1. http://swayam.gov.in**

**2. https://nptel.ac.in/**

**INSTRUCTIONAL STRATEGY**

**The subject is totally practice oriented and requires efforts of the student to gain expertise in**

**the programming. Students should be given enough exposure to the software and make them**

**practice at every platform elaborately. Software installation, operation, development should**

**also be the part of practice. The teacher should conduct viva voice of the students too.**