* 1. **COMPUTER APPLICATIONS IN ELECTRICAL INSTALLATIONS**

**RATIONALE**

**L T P**

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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.

## LEARNING OUTCOMES

After undergoing the subject, students will be able to:

* Use MATLAB and LABVIEW for solving problems and designing electrical systems
* Explain the utility of software – LABVIEW, EPLAN software

## DETAILED CONTENTS

**PRACTICAL EXERCISES:**

1. MATLAB and SCILAB
	* Introduction to MATLAB, MATLAB Programming – input/output, types of graphs, functions, loops, structures, MATLAB Simulink.
2. LABVIEW

Graphical Programming using LabVIEW including creation of VIs, subVIs, structures, arrays, clusters, charts and graphs, strings, File I/Os. Practice on NI ELVIS and other DAQ hardware

1. EPAN
	* Utility of EPLAN software

## MEANS OF ASSESSMENT

* Assignments and quiz/class tests, mid-term and end-term written tests, model/prototype making
* Actual laboratory and practical work, model/prototype making, assembly and disassembly exercises and viva-voce
* Software installation, operation, development and viva-voce

## RECOMMENDED BOOKS

1. MATLAB and SIMULINK for Engineers, Agam Kumar Tyagi, Oxford, 2011.
2. MATLAB 7 by RudraPratap, Oxford University Press.
3. MATLAB Programming for Engineers by Stephen J. Chapman
4. MATLAB and Its Applications In Engineering by R.K. Bansal, A.K. Goel
5. Virtual Instrumentation Using LabVIEWKindle Edition by [Jovitha Jerome,](https://www.amazon.in/s/ref%3Ddp_byline_sr_ebooks_1?ie=UTF8&amp;text=Jovitha%2BJerome&amp;search-alias=digital-text&amp;field-author=Jovitha%2BJerome&amp;sort=relevancerank) PHI, 2010
6. [Introduction to Multisim for Electric Circuits, James W. Nilsson and Susan Riedel, 2014.](https://www.amazon.com/Introduction-Multisim-Electric-Circuits-Nilsson/dp/0133806693/ref%3Dsr_1_2?ie=UTF8&amp;qid=1465379183&amp;sr=8-2&amp;keywords=multisim)
7. e-books/e-tools/relevant software to be used as recommended by AICTE/HSBTE/NITTTR.

Websites for Reference:

[http://swayam.gov.in](http://swayam.gov.in/) [http://nptel.ac.in](http://nptel.ac.in/) [www.nittrchd.ac.in](http://www.nittrchd.ac.in/)>hctel