

# **Solapur University, Solapur.**

## **Skill Development Center**

Name of course:       **Certificate course in MATLAB Software**

### **Curriculum of Certificate Course in MATLAB Software:**

Medium of the Course                               : English  
Duration of the Certificate Course               : 6 Months  
Eligibility   : 12<sup>th</sup> Passed & Admitted to B.Sc. Course.

Project to be submitted at the end of Course.

Examination Pattern                               : Annual Examination Pattern  
Theory Paper (Duration -2 hrs)                   : 50 Marks  
Practical (Duration – 3hrs)                       : 30 Marks  
  
Oral and Project                                     : 20 Marks

Theory & Practical Examination will be held at the end of academic year and certificate will be issued by the affiliating University.

### Syllabus for the course:

Symbolic maths  
Differentiation : first and second order  
Integration  
Limits  
Simplification and substitutions-collection and expansion of factors  
Basic algebraic operations  
Integral transforms : Laplace, Fourier , Z-transforms  
Plotting of graphs : 2D and 3D  
Solving algebraic equations : Quadratic and cubic  
Determinants  
Graphical representation of solutions of ordinary and partial differential equations.  
Numerical solutions to the system of linear equations, solution of algebraic and transcendental equations, ordinary and partial differential equations

### **Books required for the course**

- a) Advanced Engineering Mathematics with MATLAB by Thomas L . Harman , James Daboney, Norman Richert
- b)Advanced Engineering Mathematics with MATLAB by Dean G. Duffy , CRC press
- c) Exercises in Computational Mathematics with MATLAB ,by Tom Lyche , Jean-Louis Merrien , Springer publications

**Question Paper Nature**  
**Certificate course in MATLAB Software**

**Time: 2 hr**

**Total Marks: 50**

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- Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 10  
1) -----  
a)                      b)                      c)                      d)
- 2)  
3)  
4)  
5)  
6)  
7)  
8)  
9)  
10)
- Q. 2. Answer **any five** of the followings. 10  
i)  
ii)  
iii)  
iv)  
v)  
vi)
- Q. 3. A) Answer **any two** of the followings. 08  
i)  
ii)  
iii)
- Q. 4. Answer **any two** of the following. 10  
i)  
ii)  
iii)
- Q. 5. Write short note/problem/solve/draw and discuss neat diagram **any two** of the following. 12  
i)  
ii)  
iii)