Course Title	Mathematics-I for Computer Science Engineering stream		
Course Code	MAT5S11	(L-T-P)	(3-1-2)4
Exam	3hours	Hours / Week	06
SEE	50 Marks	Total Hours	42L+14T+28P+36ABL=120

Course Objective: To help students understand and apply numerical methods, calculus, and Laplace transforms to solve engineering problems and real-life applications.

Course Outcomes (COs): At the end of course, student will be able to:

COs	Outcomes	POs	PSOs
CO1	Compute solutions for Algebraic and transcendental equations and Interpolationusing Numerical methods	PO1	-
CO2	Apply the knowledge of calculus to solve problems related to polar curves and also its applications in Engineering problems	PO1, PO2	-
CO3	Approximate functions of one or two variables to polynomials using concepts of Taylor and Maclaurin series, partial differentiation and Jacobians.	PO1, PO2	
CO4	Evaluate engineering problems using concept of Laplace transform.And to solve the problems in transforming the continuous signals.	PO1, PO2	-
CO5	Write the program in python for the mathematical procedures connected with differential calculus, numerical methods, and linear algebra, execute the same and provide correct output.	PO1, PO2,PO5	-

MODULE - 1	10 Hrs.

Numerical Methods: Numerical Solution of algebraic & transcendental equations by Gradient descent method , Newton Raphson method. Finite differences- Interpolation-Definition of forward, backward differences, Newton's forward and backward interpolation formulae, Lagrange's interpolation formulae.

Numerical Integration: Evaluation of a line integral by Trapezoidal rule, Simpson's 1/3rd and 3/8th rule,

Weddle's rule. Illustrative examples from engineering field.

Applications- Estimating vehicles passing through a Toll Booth, Energy consumption in a smart home , Estimating Rain water Collected.

Self Study: Bisection method, Inverse Lagrange's interpolation formula. Approximate solutions of ODE related to Computer Science Engineering.

MODULE - 2	**10 Hrs.**

Polar coordinates : Polar curves, angle between the radius vector and the tangent, angle between two curves, Pedal equations,Curvature and Radius of curvature-cartesian,polar and pedal form.

Applications: Angle Between Curves – Collision Detection in Computer Vision, Curvature – Path Smoothing in AI/ML,Curvature and Radius of Curvature -Pedal Applications in Robotics.

Self Study: Brief introduction to evolutes and involutes, Radius of curvature-Parametric form. Derivative of arc-length.

MODULE - 3	**10 Hrs.**

Introduction to series expansion: Definition of differentiability, Statement of Taylor's theorem, Taylor's series and Maclaurin's series expansion for function of one variable.

Partial differentiation: Definition of Partial derivative, Physical and geometrical interpretation of partial differentiation and Illustrative examples.. Evaluation of Jacobians. Extreme values for a functions of two variables.

Applications -Minimizing the Canvas Area for a Fixed Volume.

Self Study: Differentiation of composite function , Propertis of Jacobians, Lagrange's method of undermined multipliers.

MODULE - 4	**12 Hrs.**

Laplace Transforms: Introduction, Definition and standard functions (statement only), Properties of Laplace transform. Laplace transform of e^{at}f (t),$t^n f(t)$,$\frac{f(t)}{t}$.Laplace transform of derivatives and integrals, Laplace transform of periodic functions, unit-step functions.

Applications: Network packet transmission with delayed start, Dual-phase CPU cooling system with delayed control response.

Self-Study: Unit-impulse function, Transform of derivatives and Integrals.

Lab Components:

1. Basic Python.
2. Computation of roots using - bisection method, Newton Raphson method.
3. Lagrange's interpolation formula.
4. Numerical integration- line integral (Trapezoidal rule) .
5. Numerical integration- line integral (Simpson's 1/3rd rule , Simpson's 3/8th rule).
6. Finding angle between polar curves & computing the curvature of a given curve.
7. Finding angle between radius vector and the tangent.
8. Finding partial derivatives, Jacobians.
9. Expressing the function of one variable using Taylor's & Maclaurin's series.
10. Standard Laplace Transforms $e^{at}f(t), \frac{f(t)}{t}$.

NOTE

1.Proofs are not required for any theorems and properties.

2.There should not be any questions from self study part in semester End Examination.

Prescribed Text Books:

Sl.No	Book Title	Authors	Edition	Publisher	Year
01	Higher Engineering Mathematics	Dr. B. S. Grewal	44^{th}	Khanna	2016
02	Advanced Engineering Mathematics	Erwin Kreyszig	8^{th}	Wiley India Pvt. Ltd	2004
03	Calculus	Thomas Finney	9^{th}	Thomas Finney	2002

Reference Books:

Sl. No	Book Title	Authors	Edition	Publisher	Year
1.	Numerical methods,	R. K. Jain and S. R. K. Jain & S. R. K. Iyengar,	6th edition,	New age International p.v.t. Publishers,	2014
2.	A textbook of Engineering Mathematics, ,	N.P. Bali and Manish Goyal	Reprint,	Laxmi Publications	2010

EBooks and online course materials:

- http://nptel.ac.in/courses.phd?disciplineID=111
- http://www.class-central.com/subject/math(MOOCs)
- http://academicerath.org/

Online Courses and Video Lectures:

- **https://www.courseera.org/_____**
- **https://nptel.ac.in/courses/____**

Teaching - Learning - Evaluation Scheme :

Sl.No	Teaching and Learning Method	No.of Hours/ Week	No.of Weeks	Hours/ Semester
1	Class Room Teaching & Learning	3	14	42
2	Integrated Lab Component	2	14	28
3	Student Study Hours - Self Learning	1	14	14
3	Activity Based Learning (ABL1 & ABL2)	-	-	14+15
4	Evaluation of Learning Process	-	-	07
Total Learning Hours/Semester				**120**
ABL 1 : Lab based learning (14 Hrs)				
Designing and implementation of Pyhton programming		Manual solving		4
		Writing program		5

	Execution	3
	Required output	1
	conclusion	1
ABL 2 : Problem Solving Assignment (15 Hrs)		
Problem Solving Assignment	Problem selection	1
	Formulate the methodology	3
	Solving the problem	4
	Report writing and submission	3
	Preparation of slide and presentation	4

Proposed Assessment Plan(for 50marks of CIE):

Tool	**Remarks**	**Marks**
CIE	Three CIEs conducted for 20marks each and reduced to 10 marks	30
Activity Details	Details of activities to be conducted 1) Lab based learning 2) Problem Solving Assignment	20
Total		**50**

Evaluation of Learning Process (7Hours)

Type of Evaluation	**Hours**
CIE (1, 2 and 3)	3
Lab component	1
Semester End Exam	3
Total	**7**

Course Articulation Matrix

Course Outcomes	Program Outcomes [POs]												
COs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
CO1	3	-			-								
CO2	3	2			-								
CO3	3	2			-								
CO4	3	2			-								
CO5	3	2			1								

Course Title	Mathematics-I for Electrical and Electronics Engineering stream		
Course Code	MAT5E11	(L-T-P)	(3-1-2)4
Exam	3hours	Hours / Week	06
SEE	50 Marks	Total Hours	42L+14T+28P+36ABL=120

Course Objective: To train the students to acquire knowledge in calculus and numerical methods so as to solve basic engineering application problems.

Course Outcomes (COs): At the end of course, student will be able to:

COs	Outcomes	POs	PSOs
CO1	Use numerical methods to solve algebraic and transcendental equations, apply interpolation and finite difference techniques, and compute line integrals using different integration rules. Real-life and engineering application problems.	PO1	-
CO2	Understand and apply concepts related to the polar curves, including angles, and radius of curvature using different coordinate systems. Real-life and engineering application problems.	PO1, PO2	-
CO3	Evaluate derivatives, series expansions of single variable, extreme values for functions of two variables and apply these concepts to solve relevant mathematical problems. Real-life and engineering application problems.	PO1	
CO4	Analyze and apply suitable methods to compute probability in statistics.	PO1, PO2	-
CO5	Write the program in python for the mathematical procedures connected with calculus, numerical methods and statistics. execute the same and provide correct output.	PO1, PO2,PO5	-

MODULE - 1	10 Hrs.

Numerical Methods: Numerical Solution of algebraic & transcendental equations by Gradient descent method,Newton Raphson method, Finite differences- Interpolation-Definition of forward, backward differences, Newton's forward and backward interpolation formulae, Lagrange's interpolation formulae.

Numerical Integration: Evaluation of a line integral by Trapezoidal rule, Simpson's 1/3rd and 3/8th rule, Weddle's rule. Illustrative examples from engineering field.

Applications-Application of root finding- ion concentration.

Self Study: Bisection method,Inverse Lagrange's interpolation formula. Approximate solutions of ODE related to Electrical Engineering.

MODULE - 2	**10 Hrs.**

Differential Calculus: Definition of average growth rate and its illustrative examples. Polar coordinates, Polar curves, angle between the radius vector and the tangent, angle between two curves, Pedal equations,Curvature and Radius of curvature (Cartesian, polar and pedal form).

Applications : Extreme values of a single variable- to find the peak current in an circuit.

Self Study:Brief introduction to evolutes and involutes. Radius of curvature-Parametric form. Derivative of arc-length. Extreme values of a single variable.

MODULE - 3	**10 Hrs.**

Introduction to series expansion: Definition of differentiability, Statement of Taylor's theorem, Taylor's series and Maclaurin's series expansion for function of one variable.

Partial differentiation: Definition of Partial derivative, Physical and geometrical interpretation of partial differentiation and Illustrative examples. Differentiation of composite function. Evaluation of Jacobians. Extreme values for a functions of two variables.

Applications: Application of total derivative- controlling sag in an uniformly loaded beam.

Self Study: Differentiation of composite function , Properties of Jacobians,Lagrange's method of undermined

multifliers.

MODULE - 4	10 Hrs.

Statistics: Curve fitting- Linear, Quadratic.

Probability Theory: Mean, Standard deviation of the experimental data, Introduction to Random variables, Discrete random variables, binomial distribution , Poisson distribution.

Application - Experimental data for applications of probability in Electrical & Electronics Engineering.

Self Study: Contionous random variable. Computation of pdf,cdf,Mean and Standard Deviation.

Lab Components:

11. Basic Python.
12. Computation of roots using - bisection method, Newton Raphson method.
13. Lagrange's interpolation formula.
14. Numerical integration- line integral (Trapezoidal rule) .
15. Numerical integration- line integral (Simpson's 1/3rd rule , Simpson's 3/8th rule).
16. Finding angle between polar curves & computing the curvature of a given curve.
17. Finding angle between radius vector and the tangent.
18. Finding partial derivatives, Jacobians.
19. Expressing the function of one variable using Taylor's & Maclaurin's series.
20. To fit a curve for the data Linear/ Quadratic.

NOTE

1.Proofs are not required for any theorems and properties.

2.There should not be any questions from self study part in semester End Examination.

Prescribed Text Books:

Sl.No	BookTitle	Authors	Edition	Publisher	Year
01	Higher Engineering Mathematics	Dr. B. S. Grewal	44th	Khanna	2016

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03	Calculus	Thomas Finney	9th	Thomas Finney	2002

Reference Books:

Sl. No	Book Title	Authors	Edition	Publisher	Year
3.	Numerical methods,	R. K. Jain and S. R. K. Jain & S. R. K. Iyengar,	6th edition,	New age International p.v.t. Publishers,	2014
4.	A textbook of Engineering Mathematics, ,	N.P. Bali and Manish Goyal	Reprint,	Laxmi Publications	2010

EBooks and online course materials:

- http://nptel.ac.in/courses.phd?disciplineID=111
- http://www.class-central.com/subject/math(MOOCs)
- http://academicerath.org/

Online Courses and Video Lectures:

- **https://www.courseera.org/**
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Teaching - Learning - Evaluation Scheme :

Sl.No	Teaching and Learning Method	No.of Hours/ Week	No.of Weeks	Hours/ Semester
1	Class Room Teaching & Learning	3	14	42
2	Integrated Lab Component	2	14	28
3	Student Study Hours - Self Learning	1	14	14
3	Activity Based Learning (ABL1 & ABL2)	-	-	14+15

4	Evaluation of Learning Process	-	-	07
Total Learning Hours/Semester				**120**
ABL 1 : Lab based learning (14 Hrs)				
Designing and implementation of Pyhton programming		Manual solving		4
		Writing program		5
		Execution		3
		Required output		1
		conclusion		1
ABL 2 : Problem Solving Assignment (15 Hrs)				
Problem Solving Assignment		Problem selection		1
		Formulate the methodology		3
		Solving the problem		4
		Report writing and submission		3
		Preparation of slide and presentation		4

Proposed Assessment Plan(for 50marks of CIE):

Tool	**Remarks**	**Marks**
CIE	Three CIEs conducted for 20marks each and reduced to 10 marks	30
Activity Details	Details of activities to be conducted 3) Lab based learning 4) Problem Solving Assignment	20
Total		**50**

Evaluation of Learning Process (7Hours)

Type of Evaluation	**Hours**
CIE (1, 2 and 3)	3
Lab component	1

Semester End Exam	3
Total	**7**

Course Articulation Matrix

Course Outcomes	**Program Outcomes [POs]**												
COs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
CO1	**3**												
CO2	**3**	**2**											
CO3	**3**	**-**											
CO4	**3**	**2**											
CO5	**3**	**2**			**1**								

Course Title	Mathematics-I for Mechanical Engineering stream		
Course Code	MAT5M11	(L-T-P)	(3-1-2)4
Exam	3hours	Hours / Week	06
SEE	50 Marks	Total Hours	42L+14T+28P+36ABL=120

Course Objective: Enable students to apply numerical methods to solve mathematical and engineering problems, analyze linear systems, and model real-life situations using appropriate mathematical techniques.

Course Outcomes (COs): At the end of course, student will be able to:

COs	Outcomes	POs	PSOs
CO1	Use numerical methods to solve algebraic and transcendental equations, apply interpolation and finite difference techniques, and compute line integrals using different integration rules. Real-life and engineering application problems.	PO1, PO2	-
CO2	Demonstrate the ability to analyze and solve systems of linear equations using direct and iterative methods, to compute Eigen value and Eigen vectors. Real-life and engineering application problems.	PO1, PO2	-
CO3	Understand and apply concepts related to the polar curves, including angles, and radius of curvature using different coordinate systems. Real-life and engineering application problems.	PO1, PO2	
CO4	Evaluate derivatives, series expansions of single variable, extreme values for functions of two variables and apply these concepts to solve relevant mathematical problems. Real-life and engineering application problems.	PO1, PO2	-
CO5	Write the program in python for the mathematical procedures connected with differential calculus, numerical methods, and linear algebra, execute the same and provide correct output.	PO1, PO2,PO5	-

MODULE - 1	10 Hrs.

Numerical Methods: Numerical Solution of algebraic & transcendental equations by Newton Raphson method, Gradient in decant method, Finite differences- Interpolation-Definition of forward, backward differences, Newton's forward and backward interpolation formulae, Lagrange's interpolation formulae.

Numerical Integration: Evaluation of a line integral by Trapezoidal rule, Simpson's $1/3^{rd}$ and $3/8^{th}$ rule, Weddle's rule. Illustrative examples from engineering field.

Applications - discharge of the Stream, Pressure Distribution on a Curved Turbine Blade

Self Study: Bisection method, Inverse Lagrange's interpolation formula. Approximate solutions of ODE related to Mechnaical Engineering.

MODULE - 2	**10 Hrs.**

Linear Algebra: Elementary row transformation of a marix, Rank of the matrix, Consistency and solution of system of linear equations - Gauss elimination method, Gauss seidel method, Eigen values and Eigen vectors.

Application - Application of solution of system of equations to balance the chemical equations. Traffic flow problem.

Self Study: Solution of sytem of equations by Gauss-Jacobi iterative method. Stretching of an elastic membrane.

MODULE - 3	**10 Hrs.**

Polar coordinates: Polar curves, angle between the radius vector and the tangent, angle between two curves, Pedal equations, Curvature and Radius of curvature in cartesian, polar and pedal form.

Applicaions: Vehicle Dynamics on a Superelevated Curved Road, Stiffness of a beam

Self Study: Radius of curvature in parametric form, Derivative of arc length, Brief introduction to evolutes and involutes

MODULE - 4	**10 Hrs.**

DIFFERENTIAL CALCULUS: Definition of differentiability, Statement of Taylor's theorem, Taylor's series and Maclaurin's series expansion for function of one variable.

Partial differentiation: Definition of Partial derivative, Physical and geometrical interpretation of partial differentiation and Illustrative examples. Evaluation of Jacobians. Extreme values for a functions of two

variables.

Applications - Applications of Optimization (extreme values of a single variable)

Self Study: Lagrange's method of undermined multifliers, composite function, properties on Jacobians.

Laboratory Plan (Integrated course) :

Sl.No.	Program Details
1	Basic Python Programs
2	Computation of roots using Newton Raphson method.
3	Lagrange's interpolation formula.
4	Numerical integration- line integral (Trapezoidal rule , **Weddle's rule**)
5	Numerical integration- line integral (Simpson's $1/3^{rd}$ rule , Simpson's $3/8^{th}$ rule)
6	Compute Rank, Eigen value and Eigen vectors of the matrix.
7	Solve the system of equations by Guass seidal method.
8	Find angle between radius vector and tangent
9	Find angle of intersection of polar curves and the radius of curvature of a given curve.
10	Express the function of one variable using Taylor's & Maclaurin's series.
11	Find partial derivatives - Jacobians

Note:

1. Proofs are not required for any theorems and properties.
2. There should not be any questions from self study part in semester End Examination.

Prescribed Text Books:

Sl.No	BookTitle	Authors	Edition	Publisher	Year
1	Higher Engineering Mathematics	Dr. B. S. Grewal	44	Khanna Publications	2016
2	Advanced Engineering Mathematics	Erwin Kreyszig	8 (Wiley student edition)	Wiley India P.v.t. Ltd	2004
3	Calculus	Thomas Finney	9	Pearson education	2002

Reference Books:

Sl. No	Book Title	Authors	Edition	Publisher	Year
1	Numerical methods	R. K. Jain and S. R. K. Jain & S. R. K. Iyengar	6	New age International p.v.t. Publishers	2014
2	A textbook of Engineering Mathematics	N.P. Bali and Manish Goyal	-	Laxmi Publications	2010

EBooks and online course materials:

1. https://www.geneseo.edu/~aguilar/public/assets/courses/233/main_notes.pdf
2. https://ocw.mit.edu/courses/res-18-001-calculus-fall-2023/pages/textbook/

Online Courses and Video Lectures:

1. https://www.coursera.org/learn/introduction-to-linear-algebra
2. https://www.coursera.org/learn/introduction-to-calculus
3. https://nptel.ac.in/courses/111104092

Teaching - Learning - Evaluation Scheme:

Sl. No	Teaching and Learning Method	No. of Hours / Week	No. of Weeks	Hours/ Semester
1	Class Room Teaching & Learning	3	14	42
2	Integrated Lab Component	2	14	28
3	Student Study Hours - Self Learning	1	14	14
3	Activity Based Learning (ABL1 & ABL2)	-	-	14+15
4	Evaluation of Learning Process	-	-	07
Total Learning Hours/Semester				**120**
ABL 1 : Lab based learning (14 Hrs)				
Designing and implementation of Pyhton programming		Manual solving		4

	Writing program	5
	Execution	3
	Required output	1
	conclusion	1
ABL 2 : Problem Solving Assignment (15 Hrs)		
Problem Solving Assignment	Problem selection	1
	Formulate the methodology	3
	Solving the problem	4
	Report writing and submission	3
	Preparation of slide and presentation	4

Proposed Assessment Plan(for 50marks of CIE):

Tool	**Remarks**	**Marks**
CIE	Three CIEs conducted for 20marks each and reduced to 10 marks	30
Activity Details	Details of activities to be conducted 5) Lab based learning 6) Problem Solving Assignment	20
Total		**50**

Evaluation of Learning Process (7Hours)

Type of Evaluation	**Hours**
CIE (1, 2 and 3)	3
Lab component	1
Semester End Exam	3
Total	**7**

Course Title	Mathematics-I for Civil Engineering stream		
Course Code	MAT5C11	**(L-T-P)**	(3-1-2)4
Exam	3hours	**Hours / Week**	06
SEE	50 Marks	**Total Hours**	42L+14T+28P+36ABL=120

Course Objective: Enable students to apply numerical methods to solve mathematical and engineering problems, analyze linear systems, and model real-life situations using appropriate mathematical techniques.

Course Outcomes (COs): At the end of course, student will be able to:

COs	Outcomes	POs	PSOs
CO1	Use numerical methods to solve algebraic and transcendental equations, apply interpolation and finite difference techniques, and compute line integrals using different integration rules. Real-life and engineering application problems.	PO1, PO2	-
CO2	Demonstrate the ability to analyze and solve systems of linear equations using direct and iterative methods, to compute Eigen value and Eigen vectors. Real-life and engineering application problems.	PO1, PO2	-
CO3	Understand and apply concepts related to the polar curves, including angles, and radius of curvature using different coordinate systems. Real-life and engineering application problems.	PO1, PO2	
CO4	Evaluate derivatives, series expansions of single variable, extreme values for functions of two variables and apply these concepts to solve relevant mathematical problems. Real-life and engineering application problems.	PO1, PO2	-
CO5	Write the program in python for the mathematical procedures connected with differential calculus, numerical methods, and linear algebra, execute the same and provide correct output.	PO1, PO2,PO5	-

MODULE - 1	**10 Hrs.**

Numerical Methods: Numerical Solution of algebraic & transcendental equations by Newton Raphson method, Gradient in decant method, Finite differences- Interpolation-Definition of forward, backward differences, Newton's forward and backward interpolation formulae, Lagrange's interpolation formulae.

Numerical Integration: Evaluation of a line integral by Trapezoidal rule, Simpson's $1/3^{rd}$ and $3/8^{th}$ rule, Weddle's rule. Illustrative examples from engineering field.

Applications - - discharge of the Stream, Rocket Launch Optimization

Self Study: Bisection method, Inverse Lagrange's interpolation formula. Approximate solutions of ODE related to Civil Engineering.

MODULE - 2	**10 Hrs.**

Linear Algebra: Elementary row transformation of a marix, Rank of the matrix, Consistency and solution of system of linear equations - Gauss elimination method, Gauss seidel method, Eigen values and Eigen vectors.

Application - Traffic flow problems, Stretching of an elastic membrane, to determine the growth of a population model.

Self Study: Solution of sytem of equations by Gauss-Jacobi iterative method. Stretching of an elastic membrane.

MODULE - 3	**10 Hrs.**

Polar coordinates: Polar curves, angle between the radius vector and the tangent, angle between two curves, Pedal equations, Curvature and Radius of curvature in cartesian, polar and pedal form.

Applicaions: Vehicle Dynamics on a Superelevated Curved Road, Stiffness of a beam

Self Study: Radius of curvature in parametric form, Derivative of arc length, Brief introduction to evolutes and involutes.

MODULE - 4	**10 Hrs.**

DIFFERENTIAL CALCULUS: Definition of differentiability, Statement of Taylor's theorem, Taylor's series and Maclaurin's series expansion for function of one variable.

Partial differentiation: Definition of Partial derivative, Physical and geometrical interpretation of partial differentiation and Illustrative examples. Evaluation of Jacobians. Extreme values for a functions of two

variables. **Applications: Soil Settlement Under a Foundation-**Foundation Differential Settlement Analysis **Self Study:** Lagrange's method of undermined multifliers, composite function, properties on Jacobians.
Note: 3. Proofs are not required for any theorems and properties. 4. There should not be any questions from self study part in semester End Examination.

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3	Student Study Hours - Self Learning	1	14	14
3	Activity Based Learning (ABL1 & ABL2)	-	-	14+15
4	Evaluation of Learning Process	-	-	07
Total Learning Hours/Semester				**120**
ABL 1 : Lab based learning (14 Hrs)				
Designing and implementation of Pyhton programming		Manual solving		4
		Writing program		5
		Execution		3
		Required output		1
		conclusion		1
ABL 2 : Problem Solving Assignment (15 Hrs)				
Problem Solving Assignment		Problem selection		1
		Formulate the methodology		3
		Solving the problem		4
		Report writing and submission		3

	Preparation of slide and presentation	4

Proposed Assessment Plan(for 50marks of CIE):

Tool	**Remarks**	**Marks**
CIE	Three CIEs conducted for 20marks each and reduced to 10 marks	30
Activity Details	Details of activities to be conducted 7) Lab based learning 8) Problem Solving Assignment	20
Total		**50**

Evaluation of Learning Process (7Hours)

Type of Evaluation	**Hours**
CIE (1, 2 and 3)	3
Lab component	1
Semester End Exam	3
Total	**7**