

# **KARNATAK UNIVERSITY DHARWAD**

## **DEPARTMENT OF MATHEMATICS**

**In Association with**

**PAVATE INSTITUTE OF MATHEMATICAL SCIENCES (PMSCI.) AND CoreEL TECHNOLOGIES (I) PVT. LTD. BANGALORE**

**Organizes**

**A Four Day National Level Mathematics Faculty Development Program on “MATLAB WITH COMPUTATIONAL MATHEMATICS” AND “CoreEL LED MATLAB SOFTWARE TRAINING”, During 10<sup>th</sup> to 13<sup>th</sup> MAY 2025, Under Soft Component Activities of PM-USHA Scheme**

### **PROGRAMME SCHEDULE**

**DAY 1: 10-05-2025 (SATURDAY)**

<b>Time</b>	<b>Event</b>	<b>Resource Person</b>	<b>Topic of the Special Lecture</b>
<b>9am to 10am</b>	<b>REGISTRATION</b>		
<b>10am to 11am</b>	<b>INAUGURAL FUNCTION</b> Anchor's: Miss. Shobha R. Konur & Miss. Rakshita R. Kulkarni. Reporters: Rani Teli, Swati Joshi, Vyashak Elluru, Mallappa Mellkeri, Santosh Gwoda. Arrangement & Execution: Dr. Smt. Nafisabanu Kumbarwadi, Smt. Roopa Naikar, Dr. Smt. Priyanka Sthavarmath, Madhukar M. Kulkarni, Susama Junjappanavar, Aafiyaparveen Madaki, Vijayraj S. Kamble, Geetanjali Rathod, Sadafafreen Bagali, Shivaprasad T, Sheena Yesu Chowri, Vatsala N. T., Staffey J., Suresh Athani, Abhishek Sangoli, Shakuntala B. K., Vinaya R. Pala, Savita Salotagi, Priyanka Kulkarni, Jyoti V. Chanadassar, Shreelekha B. K. Office Staff, Staff Members & M.Sc. Students.		
<b>11am to 11.15am</b>	<b>TEA BREAK</b>		
<b>11.15am to 1.15pm</b>	<b>KEYNOTE ADDRESS</b> Session Chair: Prof. H. S. Ramane Session Anchor : Vyashak Elluru	<b>Dr. Saurav Mitra</b> <b>Professor,</b> <b>Dept. of ECE,</b> <b>GIT, Belagavi.</b>	<b>1. MATLAB Program to find the coordinate matrix of a vector in a vector space of dimension 4 with respect to some basis.</b> <b>2. MATLAB Program to check whether a given vector is orthogonal to the column space of a given matrix.</b> <b>3. MATLAB Program to compute the transition matrix from one basis (T) to another basis (S).</b>

	<p><b>Session Reporter :</b> Vatsala N. T.</p> <p><b>Arrangement &amp; Execution:</b> Dr. Smt. Priyanka Sthavarmath, Madhukar M. Kulkarni</p>		<p>4. MATLAB Program to find the integral of a function using Trapezoidal rule.</p> <p>5. MATLAB Program to find the integral of a function using Simpson's 1/3<sup>rd</sup> rule.</p> <p>6. MATLAB Program to find the integral of a function using Simpson's 3/8<sup>th</sup> rule.</p> <p>7. MATLAB Program to find the integral of a function using Weddle's rule.</p>
<p><b>01.15pm to 2.15pm</b></p>	<p>MATLAB Programming Techniques for Computational Mathematics: Session – 1.</p> <p><b>Session Chair:</b> Prof. P. G. Patil</p> <p><b>Session Anchor :</b> Swati Joshi</p> <p><b>Session Reporter :</b> Shivaprasad T.</p> <p><b>Arrangement &amp; Execution:</b> Dr. Smt. Nafisabanu Kumbarwadi, Susama Junjappanavar.</p>	<p><b>Dr. Shrivatsa Ram Joshi</b> Assistant Professor, Dept. of Mathematics, GIT, Belagavi.</p>	<p>1. MATLAB Program to verify the linear dependency of a set of vectors.</p> <p>2. MATLAB Program to determine whether the system of linear equations <math>Ax = b</math>, where <math>A=ones(3,2)</math>, <math>b=[1;2;3]</math>, possesses an exact solution <math>x</math>.</p> <p>3. MATLAB Program to compute and print the basis and dimension of each four fundamental subspaces associated with a matrix.</p> <p>4. MATLAB Program to evaluate the polynomial using Lagrange's interpolation formula.</p> <p>5. MATLAB Program to find the value of <math>y = (x)</math> by using Newton divided difference formula.</p> <p>6. MATLAB Program to find the largest eigenvalue and the corresponding eigenvector of the given matrix using Power method.</p>
<p><b>2.15pm to 3.00pm</b></p>	<p><b>LUNCH BREAK</b></p>		
<p><b>3.00pm to 4.30pm</b></p>	<p>MATLAB Programming Techniques for Computational Mathematics: Session – 2.</p> <p><b>Session Chair:</b> Prof. Smt. R. S. Dyavanal</p> <p><b>Session Anchor :</b> Mallappa Mellkeri</p> <p><b>Session Reporter :</b> Sheena Yesu Chowri</p>	<p><b>Dr. Dhananjaya M.</b> Assistant Professor, Dept. of Mathematics, Bangalore Institute of Technology, Bangalore.</p>	<p>1. MATLAB Program to solve the system of linear equations by Gauss-elimination method.</p> <p>2. MATLAB Program to solve the system of linear equations by Gauss-Jordan method.</p> <p>3. MATLAB Program to solve the system of linear equations by using LU decomposition method.</p> <p>4. MATLAB Program to solve the system of linear equations by Jacobi iterative method.</p> <p>5. MATLAB Program to solve the system of linear equations by Gauss-Seidel method.</p>

	<b>Arrangement &amp; Execution:</b> Smt. Roopa Naikar, Aafiyaparveen Madaki.		<b>6. MATLAB Program to solve the system of linear equations by SOR method.</b>
<b>4.30pm to 6.00pm</b>	MATLAB Programming Techniques for Computational Mathematics: Session – 3. <b>Session Chair:</b> <b>Dr. Smt. Asha S. K.</b> Session Anchor : Rani Teli <b>Session Reporter :</b> <b>Sadafafreen Bagali</b> <b>Arrangement &amp; Execution:</b> Miss. Shobha R. Konur, Vijayraj S. Kamble.	<b>Dr. Chandrashekara G.</b> Assistant Professor, Dept. of Mathematics, <b>BMS College of Engineering, Bangalore.</b>	<b>1. MATLAB Program to find the root of a given equation using Fixed-Point iterative method.</b>
			<b>2. MATLAB Program to find the root of a given equation using the Bisection method.</b>
			<b>3. MATLAB Program to find the root of a given equation using the Regula-Falsi method.</b>
			<b>4. MATLAB Program to find the root of a given equation using the Secant method.</b>
			<b>5. MATLAB Program to find the root of a given equation using Newton-Raphson method.</b>
			<b>6. MATLAB Program to find the smallest positive root of the equation using Birge-Vieta method.</b>
			<b>7. MATLAB Program to find the roots of a polynomial using the Bairstow method.</b>

**DAY 2: 11-05-2025 (SUNDAY)**

<b>Time</b>	<b>Event</b>	<b>Resource Person</b>	<b>Topic of the Special Lecture</b>
<b>08am to 10am</b>	MATLAB Programming Techniques for Computational Mathematics: Session – 1. <b>Session Chair:</b> <b>Prof. H. S. Ramane</b> Session Anchor : Vyashak Elluru <b>Session Reporter :</b> <b>Vatsala N. T.</b> <b>Arrangement &amp; Execution:</b> Dr. Smt. Priyanka Sthavarmath, Madhukar M. Kulkarni	<b>Dr. Smt. Lata Lamani</b> Assistant Professor, Dept. of Mathematics, <b>SVMVV Society's SVM Arts, Science and Commerce College, Ilkal - 587125.</b>	<b>1. MATLAB Program to find the solution of the Initial Value Problems using Haar Wavelet Method.</b>
			<b>2. MATLAB Program to find the solution of the Boundary Value Problems using Haar Wavelet Method.</b>
			<b>3. MATLAB Program to find the solution of the Fredholm Integral Equations using Haar Wavelet Method.</b>
			<b>4. MATLAB Program to find the solution of the Volterra Integral Equations using Haar Wavelet Method.</b>

<b>10am to 12noon</b>	<b>MATLAB Programming Techniques for Computational Mathematics: Session – 4</b> <b>Session Chair:</b> <b>Dr. Smt. Asha S. K.</b> <b>Session Anchor :</b> <b>Mallappa Mellkeri</b> <b>Session Reporter :</b> <b>Sheena Yesu Chowri</b> <b>Arrangement &amp; Execution:</b> <b>Smt. Roopa Naikar,</b> <b>Aafiyaparveen Madaki.</b>	<b>Dr. Shashikant</b> <b>Assistant Professor,</b> <b>Dept. of</b> <b>Mathematics,</b> <b>JSS BAC &amp; SKGS</b> <b>College,</b> <b>Dharwad.</b>	1. MATLAB Program to find angle between two vectors in n-dimensional space and check the orthogonality.
			2. MATLAB Program to find the rank and nullity of a matrix through its row reduced echelon form.
			3. MATLAB Program to check whether the given vector is in the span of a set of vectors.
			4. MATLAB Program to discuss the nature of consistency for systems of linear equations.
			5. MATLAB Program to find the value of $y = f(x)$ by using Newton forward interpolation formula.
			6. MATLAB Program to find the value of $y = f(x)$ by using Newton backward interpolation formula.
<b>12.00pm to 12.15pm</b>	<b>TEA BREAK</b>		
<b>12.15pm to 2.15pm</b>	<b>MATLAB Programming Techniques for Computational Mathematics: Session – 2.</b> <b>Session Chair:</b> <b>Prof. P. G. Patil</b> <b>Session Anchor :</b> <b>Swati Joshi</b> <b>Session Reporter :</b> <b>Shivaprasad T.</b> <b>Arrangement &amp; Execution:</b> <b>Dr. Smt. Nafisabanu</b> <b>Kumbarwadi,</b> <b>Susama Junjappanavar.</b>	<b>Dr. Madhukesh J. K.</b> <b>Assistant Professor,</b> <b>GM University,</b> <b>Davangere.</b>	1. MATLAB Program to find the solution of the initial value problem using Taylor's method.
			2. MATLAB Program to find the solution of the initial value problem using Euler & Modified Euler methods.
			3. MATLAB Program to find the solution of the initial value problem using Runge-Kutta-2 <sup>nd</sup> order method.
			4. MATLAB Program to find the solution of the initial value problem using Runge-Kutta-4 <sup>th</sup> order method.
			5. MATLAB Program to find the solution of the initial value problem using Milne's Predictor-Corrector method.
			6. MATLAB Program to find the solution of the initial value problem using Adam's Predictor-Corrector method.
			7. MATLAB program to solve boundary value problems using Shooting method.
<b>2.15pm to 3.00pm</b>	<b>LUNCH BREAK</b>		

<p><b>3.00pm to 5.00pm</b></p>	<p>MATLAB Programming Techniques for Computational Mathematics: Session – 3. Session Chair: Prof. Smt. R. S. Dyavanal Session Anchor : Mallappa Mellkeri Session Reporter : Sheena Yesu Chowri Arrangement &amp; Execution: Smt. Roopa Naikar, Aafiyaparveen Madaki.</p>	<p><b>Dr. Prasannakumara B. C. Professor &amp; Chairman, Dept. of Mathematics, Davangere University, Davangere.</b></p>	<p>1. MATLAB program to solve differential equations by Finite difference method.</p> <p>2. MATLAB program to find the numerical solution of heat equation by Crank-Nicolson method.</p> <p>3. MATLAB program to find the numerical solution of wave equation using Finite difference method.</p>
<p><b>5.00pm to 6.00pm</b></p>	<p><b>PANEL DISCUSSION</b></p>		
<p><b>6.00pm to 7.00pm</b></p>	<p style="text-align: center;"><b><u>CULTURAL PROGRAMME BY M.SC. STUDENTS AND RESEARCH SCHOLARS</u></b> <b><u>STAFF INCHARGE: ORGANIZING SECRETARY AND JOINT ORGANIZING SECRETARY:</u></b> <b><u>Prof. H. S. Ramane &amp; Prof. P. G. Patil</u></b></p> <p>Arrangement &amp; Execution: Vyashak Elluru, Mallappa Mellkeri, Shivaprasad T, Vatsala N. T., Staffey J., Miss. Shobha R. Konur, Dr. Smt. Nafisabanu Kumbarwadi, Smt. Roopa Naikar, Dr. Smt. Priyanka Sthavarmath, Madhukar M. Kulkarni, Susama Junjappanavar, Aafiyaparveen Madaki, Vijayraj S. Kamble, Geetanjali Rathod, Rani Teli, Swati Joshi, Santosh Gwoda, Abhishek Sangoli, Shakuntala B. K., Vinayak R. Pala, Savita Salotagi, Priyanka Kulkarni, Jyoti V. Chanadassar, Shreelekha B. K. Sadafafreen Bagali, Sheena Yesu Chowri, Suresh Athani, Office Staff, Staff Members &amp; M.Sc. Students.</p>		

<b>Time</b>	<b>Event</b>	<b>Resource</b>	<b>Topic of the Special Lecture</b>
<b>10am to 11am</b>	<b>MATLAB Programming Techniques for Computational Mathematics: Session – 1</b> <b>Session Chair:</b> <b>Prof. H. S. Ramane</b> <b>Session Anchor :</b> <b>Rani Teli</b> <b>Session Reporter :</b> <b>Sadafafreen Bagali</b> <b>Arrangement &amp; Execution:</b> <b>Miss. Shobha R. Konur,</b> <b>Vijayraj S. Kamble.</b>	<b>Dr. B. Parvathalu</b> <b>Assistant Professor,</b> <b>Dept. of Mathematics,</b> <b>Karnataka Science College,</b> <b>Dharwad.</b>	<b>1. MATLAB Program to find the solution of the initial value problem using Taylor’s method.</b>
			<b>2. MATLAB Program to find the solution of the initial value problem using Euler &amp; Modified Euler methods.</b>
			<b>3. MATLAB Program to find the solution of the initial value problem using Runge-Kutta-2<sup>nd</sup> order method.</b>
			<b>4. MATLAB Program to find the solution of the initial value problem using Runge-Kutta-4<sup>th</sup> order method.</b>
			<b>5. MATLAB Program to find the solution of the initial value problem using Milne’s Predictor-Corrector method.</b>
			<b>6. MATLAB Program to find the solution of the initial value problem using Adam’s Predictor-Corrector method.</b>
			<b>7. MATLAB program to solve boundary value problems using Shooting method.</b>
<b>11am to 12pm</b>	<b>CoreEL LED MATLAB SOFTWARE TRAINING: Session – 2</b> <b>Session Chair:</b> <b>Prof. P. G. Patil</b> <b>Session Anchor :</b> <b>Vyashak Elluru</b> <b>Session Reporter : Vatsala N. T.</b> <b>Arrangement &amp; Execution:</b> <b>Dr. Smt. Priyanka Sthavarmath,</b> <b>Madhukar M. Kulkarni</b>	<b>Rakshith B. S.</b> <b>Senior Application Engineer,</b> <b>CoreEL Technologies India Private Limited, Bangalore.</b>	<b>GLIMPS OF MATLAB SOFTWARE</b>

<b>12.00pm to 12.15pm</b>	<b>TEA BREAK</b>		
<b>12.15am to 2.15pm</b>	<p>CoreEL LED MATLAB SOFTWARE TRAINING: Session – 3</p> <p>Session Chair: Prof. Smt. R. S. Dyavanal</p> <p>Session Anchor : Swati Joshi</p> <p>Session Reporter : Shivaprasad T.</p> <p>Arrangement &amp; Execution: Dr. Smt. Nafisabanu Kumbarwadi, Susama Junjappanavar.</p>	<p><b>Rakshith B. S.</b> <b>Senior Application Engineer,</b> <b>CoreEL Technologies India Private Limited,</b> <b>Bangalore.</b></p>	<b>GLIMPS OF MATLAB SOFTWARE</b>
<b>2.15pm to 3.00pm</b>	<b>LUNCH BREAK</b>		
<b>3.00pm to 4.00pm</b>	<p>MATLAB Programming Techniques for Computational Mathematics: Session – 4</p> <p>Session Chair: Dr. Smt. Asha S. K.</p> <p>Session Anchor : Mallappa Mellkeri</p> <p>Session Reporter : Sheena Yesu Chowri</p> <p>Arrangement &amp; Execution: Smt. Roopa Naikar, Aafiyaparveen Madaki.</p>	<p><b>Shreenivas R. Kirsur</b> <b>Assistant Professor, Dept. of Mathematics,</b> <b>S. K. E. Society's, Govindram Seksaria Science College (Autonomous),</b> <b>Tilakwadi, Belagavi.</b></p>	<ol style="list-style-type: none"> <li>1. MATLAB Program to find the value of integral of a function using Romberg's method.</li> <li>2. MATLAB Program to find integral of a function using two-point quadrature formula.</li> <li>3. MATLAB program to solve differential equations by Finite difference method.</li> <li>4. MATLAB program to find the numerical solution of heat equation by Crank-Nicolson method.</li> <li>5. MATLAB program to find the numerical solution of wave equation using Finite difference method.</li> </ol>

<p><b>4.00pm to 5.00pm</b></p>	<p><b>CoreEL LED MATLAB SOFTWARE TRAINING:</b> Session – 5 <b>Session Chair:</b> Prof. H. S. Ramane <b>Session Anchor :</b> Rani Teli <b>Session Reporter :</b> Sadafafreen Bagali <b>Arrangement &amp; Execution:</b> Miss. Shobha R. Konur, Vijayraj S. Kamble.</p>	<p><b>Rakshith B. S.</b> <b>Senior Application Engineer, CoreEL Technologies India Private Limited, Bangalore.</b></p>	<p><b>GLIMPS OF MATLAB SOFTWARE</b></p>
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**DAY 4: 13-05-2025 (TUESDAY)**

<b>Time</b>	<b>Event</b>	<b>Resource Person</b>	<b>Topic of the Special Lecture</b>
<p><b>10.00am to 11.00am</b></p>	<p>MATLAB Programming Techniques for Computational Mathematics: Session – 1 <b>Session Chair:</b> Prof. P. G. Patil <b>Session Anchor :</b> Vyashak Elluru <b>Session Reporter :</b> Vatsala N. T. <b>Arrangement &amp; Execution:</b> Dr. Smt. Priyanka Sthavarmath, Madhukar M. Kulkarni</p>	<p><b>Dr. Nagaraja S.</b> <b>Assistant Professor, Department of Computer Science, Karnatak Science College, Dharwad.</b></p>	<ol style="list-style-type: none"> <li>1. MATLAB program to find area and perimeter of a circle and triangle.</li> <li>2. MATLAB program to check whether the given year is leap or not.</li> <li>3. MATLAB program to find largest of three numbers.</li> <li>4. MATLAB program to check whether the given number is even or odd.</li> <li>5. MATLAB program to find factorial of a number.</li> <li>6. MATLAB program to find the roots of a quadratic equation.</li> <li>7. MATLAB program to accept a number to display its corresponding month using switch statement.</li> <li>8. MATLAB program to find sum, difference and product of two matrices.</li> </ol>

<p><b>11.00am to 12.00pm</b></p>	<p>CoreEL LED MATLAB SOFTWARE TRAINING: Session – 2 <b>Session Chair:</b> <b>Prof. Smt. R. S. Dyavanal</b> Session Anchor : Swati Joshi <b>Session Reporter :</b> <b>Shivaprasad T.</b> <b>Arrangement &amp; Execution:</b> Dr. Smt. Nafisabanu Kumbarwadi, Susama Junjappanavar.</p>	<p><b>Rakshith B. S.</b> <b>Senior Application Engineer, CoreEL Technologies India Private Limited, Bangalore.</b></p>	<p><b>GLIMPS OF MATLAB SOFTWARE</b></p>
<p><b>12.00pm to 12.15pm</b></p>	<p><b>TEA BREAK</b></p>		
<p><b>12.15pm to 2.15pm</b></p>	<p>CoreEL LED MATLAB SOFTWARE TRAINING: Session – 3 <b>Session Chair:</b> <b>Dr. Smt. Asha S. K.</b> Session Anchor : Mallappa Mellkeri Session Reporter : Sheena Yesu Chowri <b>Arrangement &amp; Execution:</b> Smt. Roopa Naikar, Aafiyaparveen Madaki.</p>	<p><b>Rakshith B. S.</b> <b>Senior Application Engineer, CoreEL Technologies India Private Limited, Bangalore.</b></p>	<p><b>GLIMPS OF MATLAB SOFTWARE</b></p>
<p><b>2.15 pm to 3.00pm</b></p>	<p><b>LUNCH BREAK</b></p>		

<b>3.00pm to 5.00pm</b>	<p style="text-align: center;"><b>VALEDICTORY FUNCTION</b></p> <p><b>Anchor's : Miss. Shobha R. Konur &amp; Miss. Srushti Kulkarni.</b></p> <p><b>Reporters: Sadafafreen Bagali, Shivaprasad T, Sheena Yesu Chowri, Vatsala N. T., Staffey J., Suresh Athani.</b></p> <p><b>Arrangement &amp; Execution: Dr. Smt. Nafisabanu Kumbarwadi, Smt. Roopa Naikar, Dr. Smt. Priyanka Sthavarmath, Madhukar M. Kulkarni, Susama Junjappanavar, Aafiyaparveen Madaki, Vijayraj S. Kamble, Geetanjali Rathod, Rani Teli, Swati Joshi, Vyashak Elluru, Mallappa Mellkeri, Santosh Gwoda, Abhishek Sangoli, Shakuntala B. K., Vinaya R. Pala, Savita Salotagi, Priyanka Kulkarni, Jyoti V. Chanadassar, Shreelekha B. K. Office Staff, Staff Members &amp; M.Sc. Students.</b></p>
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### **NLM-FDP-MCM & CLMST-2025 CHAIR**

Prof. S. C. Shiralashetti, Chairman & Director (PIMSCI.), Department of Mathematics, Karnatak University, Dharwad-580003,  
Mobile No.: +919986323159, +918762292297, Email ID: [may1cdpimsci2024@gmail.com](mailto:may1cdpimsci2024@gmail.com) .

### **NLM-FDP-MCM & CLMST-2025 ORGANIZING SECRETARY**

Prof. H. S. Ramane, Sr. Professor, Department of Mathematics, Karnatak University, Dharwad-580003,  
Mobile No.: +919945031752, +918762292297, Email ID: [may1cdpimsci2024@gmail.com](mailto:may1cdpimsci2024@gmail.com) .

### **NLM-FDP-MCM & CLMST-2025 JOINT ORGANIZING SECRETARY**

Prof. P. G. Patil, Professor, Department of Mathematics, Karnatak University, Dharwad-580003,  
Mobile No.: +919448408215, +918762292297, Email ID: [may1cdpimsci2024@gmail.com](mailto:may1cdpimsci2024@gmail.com) .

### **NLM-FDP-MCM & CLMST-2025 ORGANIZING COMMITTEE MEMBERS**

1. Prof. Smt. R. S. Dyavanal, Professor, Department of Mathematics, Karnatak University, Dharwad-580003.
2. Dr. Smt. Asha S. K. Associate Professor, Department of Mathematics, Karnatak University, Dharwad-580003.
3. Miss. Shobha R. Konur, Teaching Assistant, Department of Mathematics, Karnatak University, Dharwad-580003.
4. Dr. Smt. Nafisabanu Kumbarwadi, Teaching Assistant, Department of Mathematics, Karnatak University, Dharwad-580003.
5. Smt. Roopa Naikar, Teaching Assistant, Department of Mathematics, Karnatak University, Dharwad-580003.
6. Dr. Smt. Priyanka Sthavarmath, Guest Faculty, Department of Mathematics, Karnatak University, Dharwad-580003.
7. Office Staff, Research Scholars & M.Sc. Students, Department of Mathematics, Karnatak University, Dharwad-580003.