KARNATAK UNIVERSITY DHARWAD

DEPARTMENT OF MATHEMATICS

IN ASSOCIATION WITH PAVATE INSTITUTE OF MATHEMATICAL SCIENCES (PMSCI.) AND PROFESSOR R. BALAKRISHNAN ENDOWMENT TRUST TIRUCHIRAPPALLI

Organizes

Prof. R. Balakrishnan Endowment Lecture And A Three Days National Level Mathematics Faculty Development Program on "MAPLE WITH COMPUTATIONAL MATHEMATICS", During 29th to 31st OCT 2025, Under Soft Component Activities of PM-UShA Scheme

PROGRAMME SCHEDULE

DAY 1: 29-10-2025 (Wednesday)

Time	Event	Resource Person	Topic of the Special Lecture
9am to 10am	REGISTRATION		
10am to 12noon	**INAUGURAL FUNCTION** **Anchor's: Jyoti Kallimani & Sushmita Siddalingayya Karlawad** Reporters: Rani Teli, Swati Joshi, Vyashak Elluru, Mallappa Mellkeri, Santosh Gwoda. Arrangement & Execution: Dr. Smt. Nafisabanu Kumbarwadi, Smt. Roopa Naikar, Dr. Smt. Priyanka Sthavarmath, Tejaswini H. Patil, Madhukar M. Kulkarni, Susama Junjappanavar, Aafiyaparveen Madaki, Vijayraj S. Kamble, Sadashiv Mang, Priyanka, Annapurna Khot, Tusshar J. Bhaskar, Lavanya Shivappa Kadadi, Vani V. Patil, Prerana S. Patil, Umme Asiya Zameeruddin Dudooke, Kumbar Veerabasappa, Geetanjali Rathod, Sadafafreen Bagali, Shivaprasad T, Sheena Yesu Chowri, Vatsala N. T., Staffey J., Suresh Athani, Abhishek Sangoli, Shakuntala B. K., Vinayak R. Pala, Savita Salotagi, Shreelekha B. K. Office Staff, Staff Members & M.Sc. Students.		
12nn to 12.15pm	TEA BREAK		
12.15pm to 2.15pm	**Prof. R. Balakrishnan Endowment Lecture** **&** **KEYNOTE ADDRESS** Session Chair: Prof. H. S. Ramane	**Prof. B. J. Gireesha** **Professor & Chairman, Department of P. G. Studies and Research in Mathematics, Jnanasahyadri-577 451, Kuvempu University,**	1. MAPLE program to solve differential equations by Finite Difference Method.

	Session Anchor : **Vatsala N. T.** **Session Reporter :** **Vyashak Elluru** **Arrangement & Execution:** **Dr. Smt. Priyanka Sthavarmath, Madhukar M. Kulkarni Sadashiv Mang, Lavanya Shivappa Kadadi, Kumbar Veerabasappa.**	**Shankaraghattta, Shimoga, Karnataka, INDIA**	**2. MAPLE program to find the numerical solution of Heat Equation by Crank-Nicolson Method.** **3. MAPLE program to find the numerical solution of Wave Equation using Finite Difference Method.**
2.15pm to 3.00pm	**LUNCH BREAK**		
3.00pm to 4.30pm	**MAPLE Programming Techniques for Computational Mathematics: Session – 1.** **Session Chair:** **Prof. P. G. Patil** **Session Anchor: Shivaprasad T.** **Session Reporter :** **Swati Joshi** **Arrangement & Execution:** **Dr. Smt. Nafisabanu Kumbarwadi, Susama Junjappanavar, Priyanka, Vani V. Patil.**	**K. J. Gowtham** **MAPLE Programmer, Department of P. G. Studies and Research in Mathematics, Jnanasahyadri-577 451, Kuvempu University, Shankaraghattta, Shimoga, Karnataka, INDIA**	**1. MAPLE Program to solve the system of linear equations by Gauss-Elimination method.** **2. MAPLE Program to solve the system of linear equations by Gauss-Jordan method.** **3. MAPLE Program to solve the system of linear equations by using LU decomposition method.** **4. MAPLE Program to solve the system of linear equations by Jacobi iterative method.** **5. MAPLE Program to solve the system of linear equations by Gauss-Seidel method.** **6. MAPLE Program to solve the system of linear equations by SOR method.**
4.30pm to 6.00pm	**MAPLE Programming Techniques for Computational Mathematics: Session – 2.** **Session Chair:** **Prof. Smt. R. S. Dyavanal** **Session Anchor :** **Mallappa Mellkeri**	**Manikantha U. L.** **MAPLE Programmer, Department of P. G. Studies and Research in Mathematics, Jnanasahyadri-577 451, Kuvempu University, Shankaraghattta,**	**1. MAPLE Program to find the root of a given equation using Fixed-Point iterative method.** **2. MAPLE Program to find the root of a given equation using the Bisection method.** **3. MAPLE Program to find the root of a given equation using the Regula-Falsi method.** **4. MAPLE Program to find the root of a given equation using the Secant method.**

	Session Reporter : **Sheena Yesu Chowri** **Arrangement & Execution:** **Smt. Roopa Naikar, Aafiyaparveen Madaki, Annapurna Khot, Prerana S. Patil.**	**Shimoga, Karnataka, INDIA**	**5. MAPLE Program to find the root of a given equation using Newton-Raphson method.** **6. MAPLE Program to find the smallest positive root of the equation using Birge-Vieta method.** **7. MAPLE Program to find the roots of a polynomial using the Bairstow method.**

DAY 2: 30-10-2025 (Thursday)

Time	Event	Resource Person	Topic of the Special Lecture
09am to 11am	**MAPLE Programming Techniques for Computational Mathematics: Session – 3.** **Session Chair:** **Prof. H. S. Ramane** **Session Anchor:** **Vatsala N. T.** **Session Reporter:** **Vyashak Elluru** **Arrangement & Execution:** **Dr. Smt. Priyanka Sthavarmath, Madhukar M. Kulkarni, Sadashiv Mang, Lavanya Shivappa Kadadi, Kumbar Veerabasappa.**	**Dr. Shashikant** **Assistant Professor, Dept. of Mathematics, JSS BAC & SKGS College, Dharwad.**	**1. MAPLE Program to solve the system of linear equations by Jacobi iterative method.** **2. MAPLE Program to solve the system of linear equations by Gauss-Seidel method.** **3. MAPLE Program to solve the system of linear equations by SOR method.** **4. Program to find the largest eigenvalue and the corresponding eigenvector of the given matrix using Power method.** **5. MAPLE Program to find the value of y = f(x) using Newton's forward interpolation formula.** **6. MAPLE Program to find the value of y = f(x) using Newton's backward interpolation formula.** **7. MAPLE Program to find the value of y = f(x) using Lagrange's interpolation formula.**
11.00am to 12.30pm	**MAPLE Programming Techniques for Computational Mathematics: Session – 4.** **Session Chair:** **Prof. Smt. Asha S. K.** **Session Anchor:** **Rani Teli**	**Ms. Lakshmi R.** **MAPLE Programmer, Department of P. G. Studies and Research in Mathematics,**	**1. MAPLE program to find area and perimeter of a circle and triangle.** **2. MAPLE program to check whether the given year is leap or not.** **3. MAPLE Program to find the coordinate matrix of a vector in a vector space of dimension 4 with respect to some basis.** **4. MAPLE Program to check whether a given vector is orthogonal to the column space of a given matrix.**

	Session Reporter: Sadafafreen Bagali **Arrangement & Execution:** Miss. Tejaswini H. Patil, Vijayraj S. Kamble, Tusshar J. Bhaskar, Umme Asiya Zameeruddin Dudooke.	Jnanasahyadri-577 451, Kuvempu University, Shankaraghattta, Shimoga, Karnataka, INDIA	5. MAPLE Program to compute the transition matrix from one basis (T) to another basis (S). 6. MAPLE Program to find the integral of a function using Trapezoidal rule. 7. MAPLE Program to find the integral of a function using Simpson's $1/3^{rd}$ rule. 8. MAPLE Program to find the integral of a function using Simpson's $3/8^{th}$ rule. 9. MAPLE Program to find the integral of a function using Weddle's rule.
12.30pm to 12.45am	**TEA BREAK**		
12.45am to 2.15pm	**MAPLE Programming Techniques for Computational Mathematics: Session – 5.** **Session Chair:** Prof. Smt. R. S. Dyavanal **Session Anchor:** Mallappa Mellkeri **Session Reporter:** Sheena Yesu Chowri **Arrangement & Execution:** Smt. Roopa Naikar, Aafiyaparveen Madaki, Annapurna Khot, Prerana S. Patil.	**Ms. Manvitha N. V.** MAPLE Programmer, Department of P. G. Studies and Research in Mathematics, Jnanasahyadri-577 451, Kuvempu University, Shankaraghattta, Shimoga, Karnataka, INDIA	1. MAPLE program to find largest of three numbers. 2. MAPLE program to check whether the given number is even or odd. 3. MAPLE Program to verify the linear dependency of a set of vectors. 4. MAPLE Program to determine whether the system of linear equations $Ax = b$, where A=ones(3,2), b=[1;2;3], possesses an exact solution x. 5. MAPLE Program to compute and print the basis and dimension of each four fundamental subspaces associated with a matrix. 6. MAPLE Program to evaluate the polynomial using Lagrange's interpolation formula. 7. MAPLE Program to find the value of $y = (x)$ by using Newton divided difference formula. 8. MAPLE Program to find the largest eigenvalue and the corresponding eigenvector of the given matrix using Power method.
2.15pm to 3.00pm	**LUNCH BREAK**		

<table>
<tr><td rowspan="7">3.00pm
to
5.00pm</td><td rowspan="7">MAPLE Programming Techniques for Computational Mathematics: Session – 6.
Session Chair:
Prof. P. G. Patil
Session Anchor:
Shivaprasad T.
Session Reporter:
Swati Joshi
Arrangement & Execution:
Dr. Smt. Nafisabanu Kumbarwadi, Susama Junjappanavar, Priyanka, Vani V. Patil.</td><td rowspan="7">Dr. G. K. Ramesh
Assistant professor, Department of Mathematics, KLE's JT College, Gadag.</td><td>1. MAPLE Program to find the value of y = f(x) using Newton's divided difference formula.</td></tr>
<tr><td>2. MAPLE Program to find integral of a function using Trapezoidal rule.</td></tr>
<tr><td>3. MAPLE Program to find integral of a function using Simpson's (1/3) rd rule.</td></tr>
<tr><td>4. MAPLE Program to find integral of a function using Simpson's (3/8) th rule.</td></tr>
<tr><td>5. MAPLE Program to find integral of a function using Weddle's rule.</td></tr>
<tr><td>6. MAPLE Program to find integral of a function using Romberg's method.</td></tr>
<tr><td>7. MAPLE Program to find integral of a function using two-point quadrature formula.</td></tr>
<tr><td>5.00pm
to
6.00pm</td><td colspan="3">PANEL DISCUSSION</td></tr>
<tr><td>6.00pm
to
7.00pm</td><td colspan="3">CULTURAL PROGRAMME BY M.SC. STUDENTS AND RESEARCH SCHOLARS
STAFF INCHARGE: ORGANIZING SECRETARY AND JOINT ORGANIZING SECRETARY:
Prof. H. S. Ramane & Prof. P. G. Patil
Arrangement & Execution: Dr. Smt. Nafisabanu Kumbarwadi, Smt. Roopa Naikar, Dr. Smt. Priyanka Sthavarmath, Tejaswini H. Patil, Rani Teli, Swati Joshi, Vyashak Elluru, Mallappa Mellkeri, Santosh Gwoda, Madhukar M. Kulkarni, Susama Junjappanavar, Aafiyaparveen Madaki, Vijayraj S. Kamble, Sadashiv Mang, Priyanka, Annapurna Khot, Tusshar J. Bhaskar, Lavanya Shivappa Kadadi, Vani V. Patil, Prerana S. Patil, Umme Asiya Zameeruddin Dudooke, Kumbar Veerabasappa, Geetanjali Rathod, Sadafafreen Bagali, Shivaprasad T, Sheena Yesu Chowri, Vatsala N. T., Staffey J., Suresh Athani, Abhishek Sangoli, Shakuntala B. K., Vinayak R. Pala, Savita Salotagi, Shreelekha B. K. Office Staff, Staff Members & M.Sc. Students</td></tr>
</table>

DAY 3: 31-10-2025 (Friday)

Time	Event	Resource Person	Topic of the Special Lecture
9.00am to 10.30am	MAPLE Programming Techniques for Computational Mathematics: Session – 7. Session Chair: Prof. Smt. Asha S. K. Session Anchor: Rani Teli Session Reporter: Sadafafreen Bagali Arrangement & Execution: Miss. Tejaswini H. Patil, Vijayraj S. Kamble, Tusshar J. Bhaskar, Umme Asiya Zameeruddin Dudooke.	**Dr. B. Parvathalu** Associate Professor, Dept. of Mathematics, Karnataka Science College, Dharwad.	1. MAPLE Program to find the solution of the initial value problem using Taylor's method. 2. MAPLE Program to find the solution of the initial value problem using Euler & Modified Euler methods. 3. MAPLE Program to find the solution of the initial value problem using Runge-Kutta-2nd order method. 4. MAPLE Program to find the solution of the initial value problem using Runge-Kutta-4th order method. 5. MAPLE Program to find the solution of the initial value problem using Milne's Predictor-Corrector method. 6. MAPLE Program to find the solution of the initial value problem using Adam's Predictor-Corrector method. 7. MAPLE program to solve boundary value problems using Shooting method.

10.30am to 12.00noon	**MAPLE Programming Techniques for Computational Mathematics: Session – 8.** **Session Chair:** **Prof. H. S. Ramane** **Session Anchor:** **Vatsala N. T.** **Session Reporter:** **Vyashak Elluru** **Arrangement & Execution:** **Dr. Smt. Priyanka Sthavarmath, Madhukar M. Kulkarni, Sadashiv Mang, Lavanya Shivappa Kadadi, Kumbar Veerabasappa.**	**Dr. Pavitra C. G.** **Assistant professor, Department of Mathematics, Mangalore Institute of Technology & Engineering Moodabidri-574225, Mangalore Taluk, Dakshina Kannada**	**1. MAPLE Program to Solve System of Differential Equations Using Runge Kutta Fehlberg 4-5 Method.**
			2. MAPLE Program to Solve Fluid Flow Problems using Adomian Decomposition Sumudu Transformation Method.
			3. MAPLE Programs to Solve Fluid Flow Problems using Hermite Wavelets.
			4. MAPLE Program to Solve Fluid Flow Problems using Fibonacci Wavelets.
12.00noon to 12.15pm	**TEA BREAK**		
12.15pm to 1.15pm	**MAPLE Programming Techniques for Computational Mathematics: Session – 9.** **Session Chair:** **Prof. P. G. Patil** **Session Anchor:** **Shivaprasad T.** **Session Reporter:** **Swati Joshi** **Arrangement & Execution:** **Dr. Smt. Nafisabanu Kumbarwadi,**	**Praveen J.** **MAPLE Programmer, Department of P. G. Studies and Research in Mathematics, Jnanasahyadri-577 451, Kuvempu University, Shankaraghattta, Shimoga, Karnataka, INDIA**	**1. MAPLE program to find factorial of a number.**
			2. MAPLE program to find the roots of a quadratic equation.
			3. MAPLE Program to find angle between two vectors in n-dimensional space and check the orthogonality.
			4. MAPLE Program to find the rank and nullity of a matrix through its row reduced echelon form.
			5. MAPLE Program to check whether the given vector is in the span of a set of vectors.
			6. MAPLE Program to discuss the nature of consistency for systems of linear equations.

	Susama Junjappanavar, Priyanka, Vani V. Patil.		**7. MAPLE Program to find the value of $y = f(x)$ by using Newton forward interpolation formula.**
			8. MAPLE Program to find the value of $y = f(x)$ by using Newton backward interpolation formula.
1.15pm to 2.15pm	**MAPLE Programming Techniques for Computational Mathematics: Session – 10.** **Session Chair:** **Prof. Smt. R. S. Dyavanal** **Session Anchor:** **Mallappa Mellkeri** **Session Reporter:** **Sheena Yesu Chowri** **Arrangement & Execution:** **Smt. Roopa Naikar, Aafiyaparveen Madaki, Annapurna Khot, Prerana S. Patil.**	**Pavankumar P. L.** **MAPLE Programmer, Department of P. G. Studies and Research in Mathematics, Jnanasahyadri-577 451, Kuvempu University, Shankaraghattta, Shimoga, Karnataka, INDIA**	**1. MAPLE program to accept a number to display its corresponding month using switch statement.**
			2. MAPLE program to find sum, difference and product of two matrices.
			3. MAPLE Program to find the value of integral of a function using Romberg's method.
			4. MAPLE Program to find integral of a function using two-point quadrature formula.
			5. MAPLE program to solve differential equations by Finite difference method.
			6. MAPLE program to find the numerical solution of heat equation by Crank-Nicolson method.
			7. MAPLE program to find the numerical solution of wave equation using Finite difference method.
2.15pm to 3.00pm	**LUNCH BREAK**		

3.00pm to 5.00pm	**VALEDICTORY FUNCTION** **Anchor's: Chaitra Hanamant Yadwad & Sneha N. Alappanavar** **Reporters: Sadafafreen Bagali, Shivaprasad T, Sheena Yesu Chowri, Vatsala N. T., Staffey J., Suresh Athani.** **Arrangement & Execution: Dr. Smt. Nafisabanu Kumbarwadi, Smt. Roopa Naikar, Dr. Smt. Priyanka Sthavarmath, Tejaswini H. Patil, Rani Teli, Swati Joshi, Vyashak Elluru, Mallappa Mellkeri, Santosh Gwoda, Madhukar M. Kulkarni, Susama Junjappanavar, Aafiyaparveen Madaki, Vijayraj S. Kamble, Sadashiv Mang, Priyanka, Annapurna Khot, Tusshar J. Bhaskar, Lavanya Shivappa Kadadi, Vani V. Patil, Prerana S. Patil, Umme Asiya Zameeruddin Dudooke, Kumbar Veerabasappa, Geetanjali Rathod, Abhishek Sangoli, Shakuntala B. K., Vinayak R. Pala, Savita Salotagi, Shreelekha B. K. Office Staff, Staff Members & M.Sc. Students.**

Prof. R. Balakrishnan Endowment Lecture and NLM-FDP-MCM-2025 CHAIR

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Prof. R. Balakrishnan Endowment Lecture and NLM-FDP-MCM-2025 ORGANIZING COMMITTEE MEMBERS

1. **Prof. Smt. R. S. Dyavanal, Professor, Department of Mathematics, Karnatak University, Dharwad-580003.**
2. **Prof. Smt. Asha S. K., Professor, Department of Mathematics, Karnatak University, Dharwad-580003.**
3. **Dr. Smt. Nafisabanu Kumbarwadi, Part Time Guest Faculty, Department of Mathematics, Karnatak University, Dharwad-580003.**
5. **Dr. Smt. Priyanka Sthavarmath, Part Time Guest Faculty, Department of Mathematics, Karnatak University, Dharwad-580003.**
4. **Dr. Roopa Naikar, Part Time Guest Faculty, Department of Mathematics, Karnatak University, Dharwad-580003.**
6. **Miss. Tejaswini H. Patil, Part Time Guest Faculty, Department of Mathematics, Karnatak University, Dharwad-580003.**
7. **Office Staff, Research Scholars & M.Sc. Students, Department of Mathematics, Karnatak University, Dharwad-580003.**