



CSSR & SRRM DEGREE & PG COLLEGE -GATEWAY TO EDUCATION- Accredited by NAAC with A Grade

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One Day Seminar on "Applications of Matlab"

(Hands on Training)

(15 April, 2024)

Report: The Department of Mathematics, organised a Seminar on Applications of MATLAB" dated on 15-04-2024, by the resource person **Dr. Ashok Kumar**, Associate Professor, Department of Mathematics, HNB Garhwal University (A Central University), Uttarakhand. The programme was started by the convenor Dr G Vinod Kumar, Department of Mathematics, by giving brief introduction on key Speaker and his Experience. Later on the session is handled by the speaker and continued for two hours. The topics that are covered in this session are Solutions of ODE & PDE in Matlab Using Spectral Method. In this session the speaker gave maximum information by theoretical and practical classes and solved examples in MATLAB tool and guided them to practise and cleared the participants doubts. Finally vote of thanks was given by Dr G Vinod Kumar.

Feedback: At the end of the Programme the feedback form was provided by the organising committee and gathered the valuable suggestions from them.

YouTube Link: <https://www.youtube.com/watch?v=CSM37piY9JI>

Pics:

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1 % Poisson equation
2 % setup of grids and Laplacian and solution
3 N=10; [D,x]=Cheb(N); y=x;
4 [xx,yy]=meshgrid(x(2:N),y(2:N));
5 xx=xx(:);yy=yy(:); % stretching 2D grids to 1D vectors
6 f=10*sin(8*xx.*(yy-1)); % the function f
7 D2=D^2;D2=D2(2:N,2:N);I=eye(N-1);
8 L=kron(I,D2)+kron(D2,I); % Laplacian
9 figure(1);
10 u=L\f;%solution of problem
11
12 %% Reshaping long 1D results onto 2D grid
13 uu=zeros(N+1,N+1);uu(2:N,2:N)=reshape(u,N-1,N-1);
14 [xxx,yyy]=meshgrid(x,y);
15 %value=uu(N/4+1,N/4+1);
16
17 %% Interpolation to finer grid and plot
18 % [xxx,yyy]=meshgrid(-1.04:1,-1.04:1);
19 % uu=interp2(xx,yy,uu,xxx,yyy,'cubic');
20 % figure(2);clf;
```

