About the workshop:

Linear algebra is the branch of mathematics concerning vector spaces and linear mappings between such spaces. It includes the study of lines, planes, and subspaces, but is also concerned with properties common to all vector spaces.

Linear algebra is central to both pure and applied mathematics. For instance, abstract algebra arises by relaxing the axioms of a vector space, leading to a number of generalizations. Functional analysis studies the infinite-dimensional version of the theory of vector spaces. Combined with calculus, linear algebra facilitates the solution of linear systems of differential equations.

Techniques from linear algebra are also used in analytical geometry, engineering, physics, natural sciences, computer science, computer animation, advanced facial recognition algorithms and the social sciences (particularly in economics). Because linear algebra is such a well-developed theory, nonlinear mathematical models are sometimes approximated by linear models.

The subject of linear algebra is extremely important and finds numerous applications in various branches of Engineering. In practice however a computational flavor of this is what is actually used either offline (like in CT/MRI scan, Image processing) or in an embedded environment (like on a DSP/ARM processor in camera's/smart devices).

More widespread and large scale applications include the famous KALMAN filter, GPS/Satellite imaging systems, Missiles and other tracking systems. All these depend on implementing schemes and algorithms relating to computing some linear algebra concepts. Thus the skill, knowledge and information relating to Computational Linear Algebra (CLA) is a very important attribute of high value research and results.

Objectives of the program:

The course is a combination of theory and practical sessions and will cover the following

- Overview of important linear algebra concepts.

Eigen value-Eigen vector and its computation.

- Calculation and computation relating to subspaces.
- Applications of computational linear algebra algorithms in various engineering research.
- Applications of computational linear algebra in signal and image processing, Pattern reorganization, Machine learning, etc

Course contents:

- Matrix factorization techniques(LU, LUD, QR, SVD, etc)
- Numeric aspects of matrix computations (Sensitivity, Conditioning errors and approximation).
- GRAM Schmidt Ortho-normalization algorithm.

Who can participate?

Faculty/ Research Scholar from any Engineering or basic science discipline.

Registration and fees:

Registration fee is ₹. 1000.00 per participant payable by Demand Draft in favour of the Principal, SJCE, Mysuru. Filled registration form in all aspects shall be sent to the program coordinator along with Demand Draft.

Accommodation for outstation participants is available at nominal charge with prior intimation [Limited].

About SJCE:

Sri Jayachamarajendra College of Engineering, conceived in 1963, is the dream child of Jagadguru Dr. Sri Shivarathri Rajendra Mahaswamigalavaru, the 23rd pontiff of Sri Suttur Mutt. It comes under the aegis of JSS Mahavidyapeetha, which is the primary institution of many such institutions. The college was officially inaugurated by the esteemed founder of Manipal Institutes, Dr. T.M.A.Pai, the then chairman of the academy of education, Manipal, Mysore State.

The Institution serves as one of the major landmarks of the western part of Mysuru, with its sprawling 117 acres of campus and several recognizable buildings. As one of the leading institutes in India, SJCE has been recognized under the Technical Education Quality Improvement Programme (TEQIP). Acknowledging the state of the art infrastructural facilities, faculties and expertise, that have been the hallmarks of the college, the Visvesvaraya Technological University has conferred the Autonomous status to the college from the year 2007-08.

The department of E&C was established in 1970. It offers undergraduate & post graduate programmes. In addition to these, it also offers M.Sc Engineering by research & Ph.D programs which provide a platform for bright graduates and postgraduates to conduct research in state-of-the-art technologies. The Department is also a recognized center under the Quality Improvement Program (QIP) of the Government of India. The curriculum provides a strong foundation in both the analytic and technological aspects of E&C Engineering. It also provides ample opportunities to students to work on mini-projects, develop communication skills, explore internship opportunities in industry and take part in national & international design contests.

About TEQIP:

National Project Implementation Unit (NPIU) established by Ministry of Human Resource Development, Government of India, sought financial assistance from World Bank for systematic transformation of the technical education system in India. World Bank showed its willingness to assist the Government of India to launch a Technical Education Quality Improvement Programme (TEQIP). SJCE successfully completed TEQIP Phase I programme as LEAD institute. It is a great pleasure that SJCE has been awarded TEQIP Phase II funding of ₹.12.5 Crores. The main objective of this funding is to scale up post graduate education, demand driven R & D and innovations. SJCE has always been a leader and is committed to fulfil the goals. The workshop of this kind is an attempt to achieve the desired targets.

Programme Coordinators

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JSS Mahavidyapeetha

Sri Jayachamarajendra College of Engineering
(An Autonomous Institution under VTU, Belagavi)
Mysuru-570006

TEQIP – II Initiative

Faculty Development Programme on

"Computational Linear Algebra"

7th – 11th December, 2016

Venue
Seminar Hall – 1, Golden Jubilee Bhavan,
JSS TI Campus, SJCE, Mysuru

Organised by
Department of
Electronics and Communication Engineering,
Sri Jayachamarajendra College of Engineering
JSS TI Campus, Mysuru-570006

JSS MAHAVIDYAPEETHA

SRI JAYACHAMARAJENDRA COLLEGE OF ENGINEERING

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

JSS TECHNICAL INSTITUTIONS CAMPUS, MYSURU-570 006

TEQIP – II Initiative One Week Faculty Development Programme On

"Computational Linear Algebra"

7th – 11th December, 2016

REGISTRATION FORM

Name: ..... Gender [M/F]: …….....

Qualification: .....

Designation: .....

Organization: .....

Mobile Number: .....

Email Id: .....

Mailing Address: .....

.....

.....

Registration Fee details:

Demand Draft No. : ..... Date: .....

Bank: .....

Signature (Participant)

Signature with Seal (Head of the Institution)

JSS Mahavidyapeetha

Sri Jayachamarajendra College of Engineering

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

JSS TECHNICAL INSTITUTIONS CAMPUS, MYSURU-570 006

Dear sir/madam,

We are pleased to inform you that a five day Faculty Development program on ***"Computational Linear Algebra"*** is organized by Department of Electronics and Communication at ***Sri Jayachamarajendra College of Engineering, Mysuru, from 7th – 11th December, 2016.*** We request you to depute faculty members from all engineering disciplines and Basic Sciences of your esteemed institution in good number and provide them an opportunity to enrich their knowledge in this area. Please find the enclosed brochure and registration form. We look forward for your kind support to make this program a grand success.

Thanking you,

Yours faithfully

Dr.Shankaraiah

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