

## SEMINAR: 47

**NAME OF THE DEPARTMENT:** MATHEMATICS

**TITLE OF THE SEMINAR:** NATIONAL SEMINAR ON MATHEMATICAL EPIDEMIOLOGY

**DATE:** 16-02-2023 to 17-02-2023

The poster is a tri-fold brochure with a green and black color scheme. The right panel features the St. John's College logo (an eagle with wings spread) and the text: "ST. JOHN'S COLLEGE ANCHAL, KERALA - 691306 Re-accredited with A Grade by NAAC DEPARTMENT OF MATHEMATICS". Below this, it reads "NATIONAL SEMINAR ON MATHEMATICAL EPIDEMIOLOGY" and "16 - 17 FEBRUARY, 2023 Venue : Audio Visual Theatre". At the bottom right is the KSCSTE logo and "Co-sponsored by KSCSTE". The middle panel is titled "Registration Details" and lists: "Students : Rs 500", "Research Scholars : Rs 750", "Faculty : Rs 1000". It also includes "For registration visit: www.stjohns.ac.in/nsme" and a "Steps to Register" list: "1. Visit www.stjohns.ac.in/nsme", "2. Click on Register here", "3. Fill the google form", "4. Scan the QR code for payment", "5. Submit the google form". The left panel is titled "Course Content" and lists: "Mathematical modelling", "Basic infectious disease models", "Stability analysis of systems", "Basic reproduction number", "Control strategies", "Model fitting to real data", "Bifurcation in one and two dimension", "Limit cycles", "Bendixson-Dulac negative criterion", "Hopf bifurcation", "Poincare-Bendixson theorem", "Exploration with software", "Examples in real life". Below this is the "Speakers" section, listing "Dr. Prashant Kumar Srivastava Associate Professor Department of Mathematics Indian Institute of Technology Patna" and "Dr. B. S. R. V. Prasad Assistant Professor (Sr.) Department of Mathematics School of Advanced Sciences VIT, Vellore". At the bottom of the middle panel, it says "Paid accommodation will be provided on prior request."

**Course Content**

- Mathematical modelling
- Basic infectious disease models
- Stability analysis of systems
- Basic reproduction number
- Control strategies
- Model fitting to real data
- Bifurcation in one and two dimension
- Limit cycles
- Bendixson-Dulac negative criterion
- Hopf bifurcation
- Poincare-Bendixson theorem
- Exploration with software
- Examples in real life

**Speakers**

**Dr. Prashant Kumar Srivastava**  
Associate Professor  
Department of Mathematics  
Indian Institute of Technology  
Patna

**Dr. B. S. R. V. Prasad**  
Assistant Professor (Sr.)  
Department of Mathematics  
School of Advanced Sciences  
VIT, Vellore

**Registration Details**

Students : Rs 500  
Research Scholars : Rs 750  
Faculty : Rs 1000

For registration visit:  
[www.stjohns.ac.in/nsme](http://www.stjohns.ac.in/nsme)

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**Contact**

**Dr. Smitha Mary Mathew**  
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St. John's College, Anchal  
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Paid accommodation will be provided on prior request.

**ST. JOHN'S COLLEGE**  
ANCHAL, KERALA - 691306  
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**DEPARTMENT OF MATHEMATICS**

**NATIONAL SEMINAR**  
**ON**  
**MATHEMATICAL EPIDEMIOLOGY**

**16 - 17 FEBRUARY, 2023**  
**Venue : Audio Visual Theatre**

Co-sponsored by KSCSTE



**Kerala State Council for  
Science, Technology and Environment**

Sasthra Bhavan, Pattom P.O. Thiruvananthapuram - 695 004, Kerala State, India.

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No. KSCSTE/SSW/III/13

Thiruvananthapuram

Dated: 21/10/2022

To

**Dr. Smitha Mary Mathew**  
Assistant Professor,  
Department of Mathematics,  
St John's College, Anchal,  
Kollam

Dear Dr. Smitha,

Sub:- **KSCSTE – Scheme for promoting S&T Seminar/ Symposia/ Workshop – reg.**  
Read:- i) Your proposal entitled 'National Seminar on Mathematical Epidemiology'.  
ii) Minutes of the meeting of SSW Committee, held on 14.10.2022

This is to invite your attention to the referees report above and inform that KSCSTE is pleased to co-sponsor the two-day National Seminar by extending financial assistance of ₹ 20,000/-, subject to fulfilling the following norms.

1. Programme Brochure/ Invitation should be sent to KSCSTE well in advance.
2. The organizers should ensure that the conditions stipulated as per the KSCSTE guidelines are fulfilled.
3. As per the guidelines, at least 10% of the delegates and Resource persons shall be from outside the State in the case of National Seminar. If this condition is not satisfied, the Programme will be treated as appropriately and the co-sponsorship amount shall be as per rules.
4. The financial assistance may be utilized exclusively to cover the expenditure on Course materials, Publication of proceedings, Honoraria and TA for Resource Persons. The co-sponsorship amount from KSCSTE should not be fully utilized only for meeting the TA.
5. Utilization of the grant for any other purpose other than the approved heads shall not be entertained.
6. The financial assistance from the Council shall be in the nature of co-sponsorship, and hence KSCSTE should be properly acknowledged as either '*jointly organized by KSCSTE*' or '*Co-sponsored by KSCSTE*' in all the brochures, banners, proceedings, etc. brought out in connection with the Seminar.
7. The Souvenirs/ Proceedings brought out in connection with the National Seminar should essentially include one page advertisement about KSCSTE and the matter for advertisement shall be made available on request.
8. No change of date will be permitted under any circumstances.
9. Change of venue if any, shall be reported to the undersigned promptly.
10. This offer letter is valid for 6 months from this date. In case it fails to organize the programme within the stipulated time frame (within 6 months) this offer will be invalid and will automatically stands canceled.



## Brief Report

Inaugural function of the seminar started with a prayer song and inaugurated by the Principal of St. John's College, Anchal on 16.02.2023 at 9.30 am. The HoD Sibi C Babu, presided the function. At 9.45 am inaugural function came to an end.

First two technical session were handled by Dr. Prashant Kumar Srivastava. The first session started at 9.45 am. He gave a brief introduction to mathematical modelling of infectious diseases. Different mathematical models were discussed. The second session started at 11.30 am. Graphical representation and differential equations of those models were discussed.

Third technical session started after lunch break at 2.00 pm. Dr. B. S. R. V. Prasad handled the session. He discussed about the importance of mathematical modelling. The concepts of equilibrium point, and its stability was discussed.

Next day the fourth session started at 9.30 am and it was handled by Dr. Prashant Kumar Srivastava. He gave a historical overview and literature review of mathematical modelling of epidemiology.

The fifth session was handled by Dr. B. S. R. V. Prasad and was started at 11.15 am. He discussed about Bifurcation analysis using software winplot.

After lunch the sixth session began at 1.45 p.m and was handled by Dr. B. S. R. V. Prasad. He discussed about Lotka-Volterra model and Logistic equations.

Valedictory function started at 3.15 pm and certificates of participation are distributed during the function. The programme came to an end by 3.40 p.m.

Dr. Smitha Mary Mathew  
Signature of coordinator

PRINCIPAL  
St. John's College  
Anchal - 691306

Place: Anchal  
Date : 24/02/2023

