



**INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR**  
**MHRD SCHEME : GLOBAL INITIATIVE FOR ACADEMIC NETWORKS**  
**(GIAN)**

No.IIT/GIAN/S-17/1297

Date: 28.11.2017

To  
The Vice Chancellor  
Central University of Kerala  
Tejaswini Hills,  
Kasaragod District, Periyar,  
Kerala – 671 316

Subject: Approval of courses and sanction of funds for implementation of Global Initiative for Academic Networks (GIAN) programme during the financial year 2016-17

Sir/Madam,

I am pleased to inform you the GIAN implementation committee has approved the proposals submitted from your Institute/University as detailed in the following table.

| # | Course Info                                                                                                                                                      | Start/End Date           | Amount allotted (max.)                                    |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------|
| 1 | <b>174045K02</b> : Matrix-Analytic Methods in Queueing Models<br>Coordinator: Dr. Manikandan Rangaswamy, Department of Mathematics, Central University of Kerala | 15/01/2018<br>25/01/2018 | \$ 12000 (Rs. 8.16 Lakh)<br>( for 28 lectures in 11 days) |

The validity of this approval order is subjected to fulfilling the following terms and conditions:

1. The amount allocated for each course is the maximum amount and is to be spent for (a) honorarium and travel of one foreign expert/faculty only (b) lecture note preparation (c) video recording of the course (d) contingencies and miscellaneous expenses, if any. A maximum of Rs. 1.5 lakhs (for one week course, 10-14 lectures) and Rs. 2 lakhs for (2 weeks course, 20-28 lectures) can be spent for items (b), (c) and (d) only.
2. The activities in the scheme should be limited to the extents of fund available with the grantee Institution at any given time. The grantee Institution would bear responsibility for any expenditure incurred over and above available grants and the sanctioning authority or MHRD would not be liable to reimburse the same, on a routine basis, except as per rules.
3. A statement of expenditure and utilization certificate of the fund released signed by the **appropriate financial authority** should be sent within 30 days after completion of the course. The GIAN implementation Committee will have liberty to blacklist those Institutions, which do not submit the utilization certificate within the prescribed time from any future participation in the GIAN initiative and recommend to MHRD for stringent action.
4. Each course should be video recorded and appropriate consent should be obtained from foreign faculty.

5. Institute will ensure that the course coordinator will not violate copyright of anyone knowingly or willingly for the preparation of course material.
6. Institute shall send a course completion report along with soft copy of course materials and video recording of the course within 30 days after completion of the course.
7. The account where this fund is kept shall be open to inspection by the sanctioning authority and audit, both by Comptroller and Audit General of India under provision CAG (DPC) act 1971 and internal audit by the Principal Accounts Office of MHRD, Dept of Higher education, whenever the grantee is called upon to do so.
8. Institute will advise the Course Coordinator to finalise and upload the course brochure to GIAN portal ([www.gian.iitkgp.ac.in](http://www.gian.iitkgp.ac.in)) as early as possible for wide publicity. **The sanctioned fund will be released after the submission of utilization certificates for the fund received for all previously completed courses.**

Kindly send us an acceptance of the same along with duly signed pre-stamp receipt and Bank details, for transfer of funds through RTGS.

  
National Coordinator  
Global Initiative for Academic Networks (GIAN)

Copy to :-

1. Local Coordinator, GIAN, Central University of Kerala, Kerala – 671 316
2. Shri Praveen Kumar, IAS, JS, MHRD
3. Ms. Darshana Momaya Dabral, JS & FA, MHRD
4. Registrar, IIT Kharagpur – for release of funds
5. Office copy, GIAN, IIT Kharagpur

# Matrix-Analytic Methods in Queueing Models

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## Overview

Queueing models play an important role in many industries notably in service sectors. Some of these services are offered via Web. Thus, the arrivals to the service sectors (as well as to other industries) are from different sources and hence to assume that the inter-arrival times are independent is very novice. How do we build correlation into the inter-arrival times but at the same time make the queueing models amenable to practical implementation?

Dr. Marcel Neuts laid the foundation for practical queueing models through the introduction of phase type distributions, versatile Markovian point process (now known as Markovian arrival process), computational probability, and matrix-analytic methods. The answer to the question raised earlier is “through the use of Markovian arrival process and computational probability). Since then, these concepts and methods have been used by several researchers all over the world, and the First International Conferences on Matrix-analytic Methods in Stochastic models was organized by Dr. Srinivas Chakravarthy and Dr. Attahiru Alfa in 1995. The ninth one was recently held in Budapest, Hungary, during June 2016, to point out the importance and the interests in these methods.

The purpose of this series of lectures and tutorials is to expose research scholars, teachers, and industry practitioners to the fundamentals of matrix-analytic methods concepts and tools. Since more complicated queueing models need to be considered in several practical situations, and since the industry & businesses require solutions at a fast rate, the participants of these lectures/tutorials will also be exposed to fundamentals of simulation using powerful simulation software, ARENA. The participants will be highly encouraged to bring their stochastic models to give hands-on experience during the sessions dealing with tutorials.

## Course Objectives

The primary objectives of the course are as follows:

- Expose participants to the fundamentals of queues and practical aspects of queues.
- Expose participants to fundamental concepts from Markov chains and phase type distributions.
- Expose participants to Markovian arrival process and matrix-analytic methods in stochastic models.

- Expose participants to simulation tools.
- Enhance participants the usefulness of matrix-analytic methods and simulation through practical examples and useful queueing models.
- Participants will be encouraged to bring their own (practical) queueing models and show them how to apply the tools that they are exposed.

|                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Modules</b>                           | <p>January 15-25, 2018 (10 days)<br/>         Total contact hours: 28 hours lectures and 24 hours tutorials</p> <p><b>Last date of receiving application is on or before December 20, 2017.</b><br/> <b>Number of participants for the course will be limited to thirty five.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Course Outline</b>                    | <p>Probability Theory and Markov chains, Phase type distributions and Markovian arrival process, Queuing Theory, Matrix-analytic methods in queues, Deterministic/Stochastic Inventory models, Quasi-birth-and-death process, M/G/1-type queues, GI/M/1-type queues, Simulation, Queuing-inventory Systems.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>You are eligible to attend if ...</b> | <ul style="list-style-type: none"> <li>• You are a Student, at the levels (M.Sc/M.Phil/Ph.D.) and interested in learning <b><i>Stochastic Modelling and its Analysis</i></b></li> <li>• You are a Post-doc or Faculty from academic/ technical institutions and interested in <b><i>Stochastic Modelling and its Analysis</i></b></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Fees</b>                              | <p>All prospective candidates need to do web portal registration for the course on GIAN (<a href="http://www.gian.iitkgp.ac.in/GREGN/index">http://www.gian.iitkgp.ac.in/GREGN/index</a>) by making a onetime non-refundable payment of Rs. 500/-</p> <p>After the mandatory web registration, the selected candidates will be intimated by email to register for the course by making full payment of the course registration fee.</p> <p><b>Registration Fees</b></p> <p>Participants from abroad: US \$ 500</p> <p>Participants from South Asia: US \$ 300</p> <p>Participants (Students/Post-docs) from India: Rs. 3000/-</p> <p>Participants (Faculties) from India: 3500/-</p> <p>Participants from host Institution: Rs. 1500/-</p> <p><b>The above fee is towards instructional materials, lunch, tea, snacks etc. Expenses for accommodation and the travel should be borne by participants.</b></p> |

## The Faculty



**Srinivas Chakravarthy** is Professor of Industrial Engineering in the Departments of Industrial and Manufacturing Engineering & Mathematics at Kettering University (formerly known as GMI Engineering & Management Institute), Flint, Michigan, USA. He was department head of Industrial and Manufacturing Engineering during 2013 – 2016.

Srinivas Chakravarthy's research interests are in the areas of algorithmic probability, queuing, reliability, inventory, Healthcare Modelling and simulation. He has published more than 100 papers in leading journals and made more than 90 presentations at national and international conferences. His recognitions and awards include Distinguished Faculty, 2015 (inducted into Kettering's Faculty and Alumni Honour Wall), National Science Foundation Awards, Rode's Professor, Kettering University, Kettering University Distinguished Research Award, Kettering University/GMI Alumni Outstanding Teaching Award, GMI Outstanding Research Award, and GMI Alumni Outstanding Teaching Award, and Educator of the Year Award by IEOM Society, 2016. He has significant industrial experience by consulting with GM, FORD, PCE, and UPS. His professional activities include serving as (a) Area Editor for the journal, *Simulation Modelling Theory and Practice*; (b) Advisory Editor for *Queueing Theory and Service Management*; (c) Associate Editor for the journal *IAPQR TRANSACTIONS - Indian Association for Productivity, Quality & Reliability*; (d) Advisory Board Member for several other journals and international conferences; and (e) Reviewer for many professional journals.



**Professor A. Krishnamoorthy** is an UGC Emeritus Fellow & Honorary Director of Centre for Research in Mathematics at CMS College, Kottayam and he was formerly Professor of Mathematics in the Department of Mathematics at CUSAT. He is the Principal Investigator of the Indian team in the DST sponsored Indo-Russian bilateral research collaboration (jointly with Russian Academy of Sciences). He has produced 30 PhD's and published over 130 research papers in national/international SCI/SCOPUS indexed journals. He serves as: Chief Editor of *Bulletin of Kerala Mathematical Association*, Advisory Editor of *Queueing Models and Service Management*, Deputy Editor of *Electronic Journal of Reliability: Theory & Applications* and Reviewer of many world class journals. He also serves as advisory board member for several journals and international conferences.

## Course Coordinator



**Manikandan Rangaswamy** is currently working as an Assistant Professor in the Department of Mathematics at Central University of Kerala, Kasaragod, India. He obtained his Doctoral degree from Cochin University of Science and Technology (CUSAT), Cochin, India. After obtaining his Doctoral degree he joined as a Post-Doctoral Fellow in the Department of Mathematics at Indian Institute of Science, Bangalore, India. He was also a Visiting Scientist at Indian Statistical Institute Bangalore, India. His research interests primarily lie in Stochastic Modelling & Analysis of Queuing/Inventory/Reliability Systems, Stochastic Control, Markov Decision Process and Applications of Stochastic Games in Queues.

## Course Coordinator

**Manikandan Rangaswamy, Ph.D**  
**Assistant Professor**  
**Department of Mathematics**  
**School of Physical Sciences**  
**Central University of Kerala**  
**Tejaswini Hills, Periya**  
**Kasaragod-671316, Kerala, INDIA**

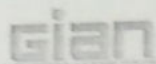
Phone: +91 467 2233522 (Office)  
+91 9447720279 (Mobile)

Email: [mani@cukerala.ac.in](mailto:mani@cukerala.ac.in)

Web: [www.cukerala.ac.in](http://www.cukerala.ac.in)

If you do not yet have a GIAN account, you are required to register paying a nominal fee Rs. 500/- at the web page :

<http://www.gian.iitkgp.ac.in/GREGN>



Global Initiative of Academic Network (GIAN) Programme

Central University of Kerala

Tejaswini Hills, Periyar, Kasaragod

Report on Conduct of GIAN Course

|                                                                  |                                                                                                      |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Title of GIAN Course                                             | Matrix-Analytic Methods in Queueing Models                                                           |
| GIAN Course ID                                                   | 174045K02                                                                                            |
| Period of Course                                                 | 15.01.2018 to 25.01.2018                                                                             |
| Name and Department of Faculty from Central University of Kerala |                                                                                                      |
| Course Coordinator                                               |                                                                                                      |
| Name                                                             | Dr. Manikandan Rangaswamy                                                                            |
| Department                                                       | Department of Mathematics                                                                            |
| Co-host Faculty, if any                                          | NIL                                                                                                  |
| Name                                                             | Not Applicable                                                                                       |
| Department                                                       | Not Applicable                                                                                       |
| Name and Affiliation of International Faculty                    |                                                                                                      |
| Name                                                             | Professor Srinivas Chakravarthy                                                                      |
| Affiliation                                                      | Kettering University, Flint, Michigan, USA                                                           |
| Name and Affiliation of National Faculty, if any                 |                                                                                                      |
| Name                                                             | Professor A. Krishnamoorthy                                                                          |
| Affiliation                                                      | UGC Emeritus Fellow & Honorary Director of Centre for Research in Mathematics, CMS College, Kottayam |
| Structure of the Course                                          |                                                                                                      |
| Duration of course (1 week or 2 weeks)                           | 2 weeks                                                                                              |
| Number of credits (1 or 2)                                       | Not Applicable                                                                                       |
| Total number of lectures in the course                           | 32                                                                                                   |
| Number of lectures by International Faculty                      | 24                                                                                                   |
| Number of lectures by national Faculty                           | 6                                                                                                    |
| Number of lectures by Host Faculty                               | 2                                                                                                    |
| Number of hours of laboratory/tutorial sessions                  | 12                                                                                                   |
| Participants of the Course                                       |                                                                                                      |
| Number of student participants                                   | 18                                                                                                   |
| Number of participants from Industry/ Research Organisations     | NIL                                                                                                  |



|                                                    |                                                                    |
|----------------------------------------------------|--------------------------------------------------------------------|
| Number of Faculty participants                     | 11                                                                 |
| Total Number of participants                       | 29                                                                 |
| Number of participants who credited for the course | Not Applicable                                                     |
| <b>Course Generated Fund</b>                       |                                                                    |
| Sponsorship, if any (in Rs.)                       | ₹ 816000.00 (Fund provided by MHRD Govt. of India for GIAN Scheme) |
| Registration Fee Collected                         | ₹ 80500.00                                                         |
| <b>Total amount</b>                                | <b>₹ 896500.00</b>                                                 |

**Interaction with Professor Srinivas Chakravarthy, Kettering University, Flint, Michigan, USA:**

Interaction of Host Faculty, Dr. Manikandan Rangaswamy:

Professor Srinivas Chakravarthy is an expert in the field of Matrix-Analytic Methods especially in Queueing Models. We will be really benefitted with his lectures and research problem discussion. We mainly discussed about working problem "Production inventory system with catastrophe and loss". He gave some suggestions to solve this complicated problem easily, also he suggested for doing numerical analysis. His classes especially, simulation tutorials are really effective and useful for me to do further research in this field.

Interaction of other faculty members in the host institute:

Professor Srinivas Chakravarthy interacted with other faculty members in the department. He shared, working and academic culture of his university including research activities and programmes offered from Kettering University, USA. This interaction is helping us to boost up the quality teaching and research. We arranged a meeting with Professor G. Gopakumar Vice Chancellor. During the meeting, Professor Srinivas Chakravarthy expressed his willingness to sign MoU between Kettering University and Central University of Kerala. Our Vice Chancellor also accepted and he thank to Professor Chakravarthy to accept our proposal and his contribution to our university.

Interaction of faculty/researchers from other institutes/organizations

There are 11 faculty members from different colleges and 18 research scholars from different institutions including IIT-BHU, NIT Raipur, BITS-Pilani, Pondichery University and Central University of Kerala are actively participated in GIAN course. They also interacted with Professor Srinivas Chakravarthy during GIAN programme. They also discussed their own research problems and they got suggestions and clarifications from him. His spirit and motivation was a very inspiring.

Signature of Course Coordinator

20/02/18  
 Dr. MANIKANDAN R  
 सहायक आचार्य / Assistant Professor  
 गणित विभाग / Department of Mathematics  
 केरल केंद्रीय विश्वविद्यालय / Central University of Kerala  
 20-02-2018  
 Periyar P.O.-671316  
 कासरगोड, केरल / Kasaragod, Kerala

Date of submission of report





**NAME OF THE PARTICIPANT****REGISTRATION NUMBER**

|                       |               |
|-----------------------|---------------|
| GULAB PATEL           | 2015150467325 |
| MR. GOPAL KUMAR GUPTA | 2015150664734 |
| DR. RESMI VARGHESE    | 2015150965267 |
| JOMY PUNALAL          | 2015150964744 |
| SOMASUNDARAM B        | 2015150765971 |
| JJO JOY               | 2015150064940 |
| ANILKUMAR M.P.        | 2015150465032 |
| RINSY THOMAS          | 2015150265218 |
| SHRUTI                | 2015150668045 |
| ROSHLI ANIYERI        | 2015150566152 |
| DEVICHANDRIKA V       | 2015150366263 |
| SINU LAL T S          | 2015150866887 |
| SWETHA M S            | 2015150468693 |
| SHAJEEB P U           | 2015150366371 |
| AMBILY P MATHEW       | 2015150167717 |
| ANU NUTHAN JOSHUA     | 2015150965194 |
| ABDUL ROF V           | 2015150466725 |
| DR. REEJA P V         | 2015150764145 |
| SWETA DEY             | 2015150568681 |
| MANJU RAMALINGAM      | 2015150565786 |
| PRAJISHA E            | 2015150370146 |
| LAKSHMIPRIYA N        | 2015150170114 |
| SREYA V.V.            | 2015150370115 |
| JINTO JAMES           | 2015150970341 |
| SOORYA P              | 2015150870147 |
| SHINE RAJ S N         | 2015150270160 |
| ABDUL JALEEL A.P      | 2015150170141 |
| MOHAMMED SAFWAN V P   | 2015150570231 |
| BIVAS BANK            | 2015150964909 |



**Global Initiative of Academic Networks  
Indian Institute of Technology Kharagpur  
Course Evaluation Form**

Your feedback is critical for the GIAN team to ensure we are meeting your educational needs. We would appreciate if you could take a few minutes to share your opinions with us so we can serve you better.

Course Title: MATRIX ANALYTIC METHODS IN QUEUEING THEORY MODELS.

Date: 25-01-2018 Faculty Member (s): Dr. S.R.Chakraverty, Dr. A.Krishnamoorthy

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long
2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:
- |                            | Excellent                           | Very Good                           | Good                     | Fair                     | Poor                     |
|----------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| a. Course overall          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?
- |                          |                          |                             |                          |                                     |
|--------------------------|--------------------------|-----------------------------|--------------------------|-------------------------------------|
| Definitely not recommend | Unlikely to recommend    | Recommend with reservations | Likely to recommend      | Recommend with enthusiasm           |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

5. What are the strengths of the course?

6. How could the course be improved?

A well set up lab is required for ~~doing~~ <sup>conducting</sup> simulation sessions -  
Accommodation facility required within the campus for an effective residential programme

7. What did you most appreciate/enjoy/think was best about the course?

**Thank you!**

**Please return this form to the Course Coordinator or local support staff at the end of the course.**



Global Initiative of Academic Networks  
Indian Institute of Technology Kharagpur  
Course Evaluation Form

Your feedback is critical for the GIAN team to ensure we are meeting your educational needs. We would appreciate if you could take a few minutes to share your opinions with us so we can serve you better.

Course Title: MATRIX ANALYTICS METHODS IN QUEUEING MODELS

Date: 25/1/2018 Faculty Member (s): 1) S.R. Chakravarthy, A Krishnamoorthy, R ManiKandan

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                           | Good                     | Fair                     | Poor                     |
|----------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| a. Course overall          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

Definitely not recommend  Unlikely to recommend  Recommend with reservations  Likely to recommend  Recommend with enthusiasm

5. What are the strengths of the course?

It gives a good insight to various stochastic Models, Matrix analytic methods and simulation.

6. How could the course be improved?

Course is well executed, but ~~the~~ if the accommodation is provided inside the campus it will be more effective.

7. What did you most appreciate/enjoy/think was best about the course?

The dedicated ~~teamwork~~ attitude of Resource persons, support of Course Co-ordinator.

Thank you!

Please return this form to the Course Coordinator or local support staff at the end of the course.





**Global Initiative of Academic Networks  
Indian Institute of Technology Kharagpur  
Course Evaluation Form**

Your feedback is critical for the GIAN team to ensure we are meeting your educational needs. We would appreciate if you could take a few minutes to share your opinions with us so we can serve you better.

Course Title: MATRIX ANALYTIC METHODS IN QUEUEING MODELS.

Date: 25/01/18 Faculty Member (s): Dr. S.R. Chakravarthy, Dr. A. Krishnamoorthy, Dr. R. Manikandan.

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                           | Good                     | Fair                     | Poor                     |
|----------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| a. Course overall          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

|                             |                          |                                |                          |                              |
|-----------------------------|--------------------------|--------------------------------|--------------------------|------------------------------|
| Definitely not<br>recommend | Unlikely to<br>recommend | Recommend with<br>reservations | Likely to<br>recommend   | Recommend with<br>enthusiasm |
| <input type="checkbox"/>    | <input type="checkbox"/> | <input type="checkbox"/>       | <input type="checkbox"/> | <input type="checkbox"/>     |

5. What are the strengths of the course?

6. How could the course be improved?

7. What did you most appreciate/enjoy/think was best about the course?

**Thank you!**

**Please return this form to the Course Coordinator or local support staff at the end of the course.**





**Global Initiative of Academic Networks  
Indian Institute of Technology Kharagpur  
Course Evaluation Form**

Your feedback is critical for the GIAN team to ensure we are meeting your educational needs. We would appreciate if you could take a few minutes to share your opinions with us so we can serve you better.

Course Title: \_\_\_\_\_

Date: \_\_\_\_\_ Faculty Member (s): Dr. Srinivas R Chakravarthy

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                           | Good                     | Fair                     | Poor                     |
|----------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| a. Course overall          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

Definitely not recommend  Unlikely to recommend  Recommend with reservations  Likely to recommend  Recommend with enthusiasm

5. What are the strengths of the course?

*The course content is really structured and planned. Entire course material was covered as per the schedule*

6. How could the course be improved?

*It could be improved by adding more hands on training sessions.*

7. What did you most appreciate/enjoy/think was best about the course?

*Discussions and the tutorials involved in this section*

**Thank you!**

**Please return this form to the Course Coordinator or local support staff at the end of the course.**



**Global Initiative of Academic Networks  
Indian Institute of Technology Kharagpur  
Course Evaluation Form**

Your feedback is critical for the GIAN team to ensure we are meeting your educational needs. We would appreciate if you could take a few minutes to share your opinions with us so we can serve you better.

Course Title: Matrix to Analytic methods and Queuing models.

Date: 25-01-18 Faculty Member (s): Chakravarthy, Krishnamoorthy, Manikandan.

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                           | Good                     | Fair                     | Poor                     |
|----------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| a. Course overall          | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

Definitely not recommend  Unlikely to recommend  Recommend with reservations  Likely to recommend  Recommend with enthusiasm

5. What are the strengths of the course?

Gives good knowledge about Stochastic process.

6. How could the course be improved?

More interactive sessions.

7. What did you most appreciate/enjoy/think was best about the course?

Classes by Chakravarthy and Krishnamoorthy.

**Thank you!**

Please return this form to the Course Coordinator or local support staff at the end of the course.



Global Initiative of Academic Networks  
Indian Institute of Technology Kharagpur  
Course Evaluation Form

Your feedback is critical for the GIAN team to ensure we are meeting your educational needs. We would appreciate if you could take a few minutes to share your opinions with us so we can serve you better.

Course Title: MATRIX ANALYTIC

Date: 15/1/2018 to 25/1/2018

Faculty Member (s): Prof. Srinivas R. Chakravarthy  
Prof. A. Krishnamoorthy

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                | Good                     | Fair                     | Poor                     |
|----------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| a. Course overall          | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

Definitely not recommend     Unlikely to recommend     Recommend with reservations     Likely to recommend     Recommend with enthusiasm

5. What are the strengths of the course?

Good faculty having an exemplary mastery over the subject

6. How could the course be improved?

Improve co-ordination regarding food, stay etc.  
Lack of facilities in the venue. esp. regarding lab and so on.

7. What did you most appreciate/enjoy/think was best about the course?

The excellent ~~lectured~~ classes delivered by the resource persons Prof. S.R. Chakravarthy and Prof. A. Krishnamoorthy

Thank you!

Please return this form to the Course Coordinator or local support staff at the end of the course.





Global Initiative of Academic Networks  
Indian Institute of Technology Kharagpur  
Course Evaluation Form

Your feedback is critical for the GIAN team to ensure we are meeting your educational needs. We would appreciate if you could take a few minutes to share your opinions with us so we can serve you better.

Course Title: Matrix Analytic Methods in Queuing Models

Dr. Srinivas R Chakravarthy,

Date: 24/1/2018 Faculty Member (s): Dr. A. Krishnamoorthy

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                           | Good                     | Fair                     | Poor                     |
|----------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| a. Course overall          | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

Definitely not recommend  Unlikely to recommend  Recommend with reservations  Likely to recommend  Recommend with enthusiasm

5. What are the strengths of the course?

Excellent exposure to Matrix Analytic Methods & Simulation. Avenue for interaction.

6. How could the course be improved?

Better lab facilities could be provided especially for simulation classes  
Improve coordination with regard to food, stay etc.

7. What did you most appreciate/enjoy/think was best about the course?

The classes of Dr. S. Chakravarthy & Dr. A. Krishnamoorthy

Thank you!

Please return this form to the Course Coordinator or local support staff at the end of the course.



Global Initiative of Academic Networks  
Indian Institute of Technology Kharagpur  
Course Evaluation Form

Your feedback is critical for the GIAN team to ensure we are meeting your educational needs. We would appreciate if you could take a few minutes to share your opinions with us so we can serve you better.

Course Title: Mathematical Analysis Methods in Pricing Models

Date: 25/01/18 Faculty Member (s): SR C

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                           | Good                                | Fair                     | Poor                     |
|----------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|
| a. Course overall          | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?  
Definitely not recommend  Unlikely to recommend  Recommend with reservations  Likely to recommend  Recommend with enthusiasm

5. What are the strengths of the course?

Topics were taught from basics, reference & excellent resource persons.

6. How could the course be improved?

Nothing in particular

7. What did you most appreciate/enjoy/think was best about the course?

Introduction sessions

Thank you!

Please return this form to the Course Coordinator or local support staff at the end of the course.





**Global Initiative of Academic Networks  
Indian Institute of Technology Kharagpur  
Course Evaluation Form**

Your feedback is critical for the GIAN team to ensure we are meeting your educational needs. We would appreciate if you could take a few minutes to share your opinions with us so we can serve you better.

Course Title: Workshop on Matrix Analytic Methods in Queuing Models  
Date: 15/1/18 to 25/1/18 Faculty Member (s): SR Chakravarthy, A Krishnamoorthy, M. Rangaswamy

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long
2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                           | Good                     | Fair                     | Poor                     |
|----------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| a. Course overall          | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?
- | Definitely not recommend | Unlikely to recommend    | Recommend with reservations | Likely to recommend      | Recommend with enthusiasm           |
|--------------------------|--------------------------|-----------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

5. What are the strengths of the course?  
Experienced Resource Persons, Lab sessions, Tutorials

6. How could the course be improved?  
More lab sessions

7. What did you most appreciate/enjoy/think was best about the course?  
Interactions with sessions with faculty members

**Thank you!**  
Please return this form to the Course Coordinator or local support staff at the end of the course.



**Global Initiative of Academic Networks  
Indian Institute of Technology Kharagpur  
Course Evaluation Form**

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Course Title: Matrix-Analytic Methods in Query Models

Date: 25/01/18 Faculty Member (s): Prof SRC, Prof Ak, Dr. Manikandan

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                           | Good                     | Fair                     | Poor                     |
|----------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| a. Course overall          | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

Definitely not recommend  Unlikely to recommend  Recommend with reservations  Likely to recommend  Recommend with enthusiasm

5. What are the strengths of the course?

6. How could the course be improved?

7. What did you most appreciate/enjoy/think was best about the course?

**Thank you!**

**Please return this form to the Course Coordinator or local support staff at the end of the course.**



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Indian Institute of Technology Kharagpur  
Course Evaluation Form**

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Course Title: Matrix Analytic Methods in Queuing Theory

Date: 15 to 25 - 01 - 2018 Faculty Member (s): Srinivas. Rau. Chakravarthy

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                | Very Good                           | Good                                | Fair                     | Poor                     |
|----------------------------|--------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|
| a. Course overall          | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

Definitely not recommend     Unlikely to recommend     Recommend with reservations     Likely to recommend     Recommend with enthusiasm

5. What are the strengths of the course?

Interaction with students and faculty

6. How could the course be improved?

Reducing Speed

7. What did you most appreciate/enjoy/think was best about the course?

Innovative methodologies and ideas in Research field.

**Thank you!**

**Please return this form to the Course Coordinator or local support staff at the end of the course.**





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Indian Institute of Technology Kharagpur  
Course Evaluation Form**

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Course Title: MATRIX ANALYTICAL METHODS IN QUEUEING MODELS.

Date: 25.1.2018 Faculty Member (s): 1. Dr. SR. CHAKRAVARTHY, Dr. A. KRISHNA MOORTHY, Dr. MANIKA -

NATAN RANGASWAMY

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                           | Good                                | Fair                     | Poor                     |
|----------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|
| a. Course overall          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

Definitely not recommend  Unlikely to recommend  Recommend with reservations  Likely to recommend  Recommend with enthusiasm

5. What are the strengths of the course?

6. How could the course be improved?

7. What did you most appreciate/enjoy/think was best about the course?

**Thank you!**

**Please return this form to the Course Coordinator or local support staff at the end of the course.**



**Global Initiative of Academic Networks  
Indian Institute of Technology Kharagpur  
Course Evaluation Form**

Your feedback is critical for the GIAN team to ensure we are meeting your educational needs. We would appreciate if you could take a few minutes to share your opinions with us so we can serve you better.

Course Title: Math Analysis Methods in Queueing Models.  
 Date: 23/04/18 Faculty Member (s): Prof. Srinivas & Prof. Krishnamoorthi

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long  
 2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                           | Good                     | Fair                     | Poor                     |
|----------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| a. Course overall          | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?  
 Definitely not recommend  Unlikely to recommend  Recommend with reservations  Likely to recommend  Recommend with enthusiasm

5. What are the strengths of the course?

Classes of resource persons and (6) sessions

6. How could the course be improved?

Accommodation can be provided within the Campus

7. What did you most appreciate/enjoy/think was best about the course?

Methodology of teaching by Prof. SRC & Prof. Krishnamoorthi & Dr. Manikandan.

**Thank you!**

Please return this form to the Course Coordinator or local support staff at the end of the course.





Global Initiative of Academic Networks  
Indian Institute of Technology Kharagpur  
Course Evaluation Form

Your feedback is critical for the GIAN team to ensure we are meeting your educational needs. We would appreciate if you could take a few minutes to share your opinions with us so we can serve you better.

Course Title: A short term Course On Matrix Analytic Methods in Queueing models.

Date: 15/1/18 to 25/1/18 Faculty Member (s): Dr S R Chakravarthy  
Dr A Krishnamurthy

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                           | Good                     | Fair                     | Poor                     |
|----------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| a. Course overall          | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

Definitely not recommend  Unlikely to recommend  Recommend with reservations  Likely to recommend  Recommend with enthusiasm

5. What are the strengths of the course?

Received a lot of new informations from this course. Really this course helped me lot. very much.

6. How could the course be improved?

The course can be improved by adding more tutorials.

7. What did you most appreciate/enjoy/think was best about the course?

Discussion regarding the subject.

Thank you!

Please return this form to the Course Coordinator or local support staff at the end of the course.



Global Initiative of Academic Networks  
Indian Institute of Technology Kharagpur  
Course Evaluation Form

Your feedback is critical for the GIAN team to ensure we are meeting your educational needs. We would appreciate if you could take a few minutes to share your opinions with us so we can serve you better.

Course Title: Matrix Analytic methods in Queing models

Date: 05-01-2018 Faculty Member (s): Prof S-R Chakraverty, Prof A. Krishnamoorthy & Dr. Manikash

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                | Good                     | Fair                     | Poor                     |
|----------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| a. Course overall          | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

Definitely not recommend  Unlikely to recommend  Recommend with reservations  Likely to recommend  Recommend with enthusiasm

5. What are the strengths of the course?

Excellent classes of Prof Chakraverty Sir and Prof A-Krishnamoorthy Sir.

6. How could the course be improved?

Improving the lab facilities, accommodation and coordination.

7. What did you most appreciate/enjoy/think was best about the course?

Interaction with the faculty members.

Thank you!

Please return this form to the Course Coordinator or local support staff at the end of the course.



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Indian Institute of Technology Kharagpur  
Course Evaluation Form**

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Course Title: A Workshop on Matrix Analytic Method on Queueing Theory

Date: 25/01/18 Faculty Member (s): Srisovan R. Chakravarthy, A. Krishna Murthy, Manikandan Rangam

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                           | Good                     | Fair                     | Poor                     |
|----------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| a. Course overall          | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

|                             |                          |                                |                                     |                              |
|-----------------------------|--------------------------|--------------------------------|-------------------------------------|------------------------------|
| Definitely not<br>recommend | Unlikely to<br>recommend | Recommend with<br>reservations | Likely to<br>recommend              | Recommend with<br>enthusiasm |
| <input type="checkbox"/>    | <input type="checkbox"/> | <input type="checkbox"/>       | <input checked="" type="checkbox"/> | <input type="checkbox"/>     |

5. What are the strengths of the course?

Good Resource persons, Co-ordinator

6. How could the course be improved?

Reduce the speed of presentation and increase the duration of course. Night classes may be arranged

7. What did you most appreciate/enjoy/think was best about the course?

I enjoyed Prof. A. Krishna Murthy Sir's lecture.

**Thank you!**

Please return this form to the Course Coordinator or local support staff at the end of the course.





Global Initiative of Academic Networks  
Indian Institute of Technology Kharagpur  
Course Evaluation Form

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Course Title: MATRIX ANALYTIC METHODS IN QUEUEING THEORY

Date: 15-25, JAN 2018 Faculty Member (s): Srinivas R. Chakravarthy, Hemikandan R. A. Krishna Murthy

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                | Good                     | Fair                     | Poor                     |
|----------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| a. Course overall          | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

Definitely not recommend  Unlikely to recommend  Recommend with reservations  Likely to recommend  Recommend with enthusiasm

5. What are the strengths of the course?

Since we can learn the matrix analytic methods from one of the masters of this field.

6. How could the course be improved?

According to me this course requires no improvements. We are fully satisfied.

7. What did you most appreciate/enjoy/think was best about the course?

I appreciate the simplicity of the resource persons to interact with us.

Thank you!

Please return this form to the Course Coordinator or local support staff at the end of the course.



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Indian Institute of Technology Kharagpur  
Course Evaluation Form**

Your feedback is critical for the GIAN team to ensure we are meeting your educational needs. We would appreciate if you could take a few minutes to share your opinions with us so we can serve you better.

Course Title: Matrix-Analytic Methods in Queue Models

Date: \_\_\_\_\_ Faculty Member (s): Dr. SRC, Dr. AK, Dr. MR

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                           | Good                     | Fair                     | Poor                     |
|----------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| a. Course overall          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

Definitely not recommend  Unlikely to recommend  Recommend with reservations  Likely to recommend  Recommend with enthusiasm

5. What are the strengths of the course?

Introduction sessions and explainer form basis

6. How could the course be improved?

Improving the facilities in the Lab

7. What did you most appreciate/enjoy/think was best about the course?

Classes of SRC, AK & MR.

**Thank you!**

**Please return this form to the Course Coordinator or local support staff at the end of the course.**





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Indian Institute of Technology Kharagpur  
Course Evaluation Form**

Your feedback is critical for the GIAN team to ensure we are meeting your educational needs. We would appreciate if you could take a few minutes to share your opinions with us so we can serve you better.

Course Title: Matrix Analytic Methods in Queuing Models

Date: 25/01/2018 Faculty Member (s): Dr. S R. Chakravarthy, Dr. A. Krishamoorthy, Dr. Manikandan Rangaswamy

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                           | Good                                | Fair                     | Poor                     |
|----------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|
| a. Course overall          | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?  
 Definitely not recommend     Unlikely to recommend     Recommend with reservations     Likely to recommend     Recommend with enthusiasm

5. What are the strengths of the course?

MIGII, GI/MII and ~~Finite~~ Inventory Queuing Inventory System.

6. How could the course be improved?

7. What did you most appreciate/enjoy/think was best about the course?

It is a very good experience and I am very much grateful to the all sirs for their kind help and collaboration

**Thank you!**

**Please return this form to the Course Coordinator or local support staff at the end of the course.**



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Indian Institute of Technology Kharagpur  
Course Evaluation Form**

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Course Title: Matrix-Analytic Methods in Queueing Models

Date: 25 Jan, 2018 Faculty Member (s):  $\forall x \in A, A = \{SRC, AK, MR\}$

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long
2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                           | Good                                | Fair                     | Poor                     |
|----------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|
| a. Course overall          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

|                             |                          |                                |                                     |                              |
|-----------------------------|--------------------------|--------------------------------|-------------------------------------|------------------------------|
| Definitely not<br>recommend | Unlikely to<br>recommend | Recommend with<br>reservations | Likely to<br>recommend              | Recommend with<br>enthusiasm |
| <input type="checkbox"/>    | <input type="checkbox"/> | <input type="checkbox"/>       | <input checked="" type="checkbox"/> | <input type="checkbox"/>     |

5. What are the strengths of the course?

M/GI/I, GI/M/I, Queueing-Inventory system and ARENA.

6. How could the course be improved?

Thoroughly, courses were very fine but some lectures were fast.

7. What did you most appreciate/enjoy/think was best about the course?

It was very good experience for me. All sir were very sincere, dedicated to whole workshop.

**Thank you!**

**Please return this form to the Course Coordinator or local support staff at the end of the course.**



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Indian Institute of Technology Kharagpur  
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Course Title: MATRIX-ANALYTICAL METHODS IN BUILDING MODELS.

Date: 25-01-18 Faculty Member (s): Dr. S. R. Chakravorty, Dr. A. Krishnamoorthy.

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                           | Good                     | Fair                     | Poor                     |
|----------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| a. Course overall          | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

Definitely not recommend  Unlikely to recommend  Recommend with reservations  Likely to recommend  Recommend with enthusiasm

5. What are the strengths of the course?

6. How could the course be improved?

7. What did you most appreciate/enjoy/think was best about the course?

**Thank you!**

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Course Title: Workshop on Matrix-Analytic Methods in Queuing Models

Date: 18-25<sup>th</sup> January 2018 Faculty Member (s): SR Chakraborty, A. Krishnamoorthy, Manikandan

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long
2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced
3. Please rate the following:

|                            | Excellent                           | Very Good                           | Good                     | Fair                     | Poor                     |
|----------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| a. Course overall          | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?
- |                             |                          |                                |                          |                              |
|-----------------------------|--------------------------|--------------------------------|--------------------------|------------------------------|
| Definitely not<br>recommend | Unlikely to<br>recommend | Recommend with<br>reservations | Likely to<br>recommend   | Recommend with<br>enthusiasm |
| <input type="checkbox"/>    | <input type="checkbox"/> | <input type="checkbox"/>       | <input type="checkbox"/> | <input type="checkbox"/>     |

5. What are the strengths of the course?

MAP, BNAP, PH-type, MIAI & GIMI and Inventory Queuing systems Lab (Arena)

6. How could the course be improved?

You may schedule Lab section Conduct each day last section of Tutorial.

7. What did you most appreciate/enjoy/think was best about the course?

I enjoyed, great chance to interact and discuss with Prof and friends of GIAN course

**Thank you!**

Please return this form to the Course Coordinator or local support staff at the end of the course.



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Indian Institute of Technology Kharagpur  
Course Evaluation Form

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Course Title: Matrix - Analytic Methods in Queuing Models  
Date: 15 to 25/01/18 Faculty Member (s): Dr. Srinivas R. Chakravarthy  
Dr. A. Krishnamoorthy  
Dr. Manikandan Rangasamy

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long  
2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                | Good                     | Fair                     | Poor                     |
|----------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| a. Course overall          | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?  
Definitely not recommend  Unlikely to recommend  Recommend with reservations  Likely to recommend  Recommend with enthusiasm

5. What are the strengths of the course?  
The coordinator of this course organised without any interpretation even when there is local strike one one day. Dr. Srinivas R. Chakravarthy Sir and Dr. A. Krishnamoorthy Sir are very sincerely taking classes.

6. How could the course be improved?  
Please kindly include some more basic classes for this course.

7. What did you most appreciate/enjoy/think was best about the course?  
Enjoyed doing Simulation practicals with Dr. Srinivas R. Chakravarthy Sir.

**Thank you!**  
Please return this form to the Course Coordinator or local support staff at the end of the course.





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Indian Institute of Technology Kharagpur  
Course Evaluation Form**

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Course Title: MATRIX-ANALYTIC METHODS IN QUEUEING MODELS

Date: 15-01-2018 to 25-01-2018 Faculty Member (s): Prof. Srinivas R. Chakravarthy, Prof. A. Krishnamoorthy, ~~Dr. Anand Kumar~~, Dr. Mani Kandan

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                           | Good                                | Fair                     | Poor                     |
|----------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|
| a. Course overall          | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

Definitely not recommend     Unlikely to recommend     Recommend with reservations     Likely to recommend     Recommend with enthusiasm

5. What are the strengths of the course?

Two way traffic, doubts clearance, discussions and covered from basic to advance (as was expecting).

6. How could the course be improved?

Though almost everything was covered with enough elaboration but if more of the practical applications/solutions can be considered. & more of the simulation work.

7. What did you most appreciate/enjoy/think was best about the course?

Learned alot, enjoyed Kerala (South India) visit, food and experienced many new things, concepts clearance, got to learn from best faculty!

**Thank you!**

**Please return this form to the Course Coordinator or local support staff at the end of the course.**





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Course Evaluation Form**

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Course Title: A Short term Course on Matrix Analytic Method on ageing Model

Date: \_\_\_\_\_ Faculty Member (s): Rashmi Aranyani SRC, AIK, MR

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                | Good                     | Fair                     | Poor                     |
|----------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| a. Course overall          | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

Definitely not recommend     Unlikely to recommend     Recommend with reservations     Likely to recommend     Recommend with enthusiasm

5. What are the strengths of the course?

It helps to attain lot of knowledge regarding Matrix Analytic Method.

6. How could the course be improved?

It ~~is~~ helps me to lot for improving my work, so to include lot of tutorial

7. What did you most appreciate/enjoy/think was best about the course?

Group discussion

**Thank you!**

**Please return this form to the Course Coordinator or local support staff at the end of the course.**



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Indian Institute of Technology Kharagpur  
Course Evaluation Form**

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Course Title: Matrix Analytic methods in queueing models.

Date: 25/1/2018 Faculty Member (s): Dr. S.R. Chakravarthy, Dr. A. Krishnamoorthy.

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                           | Good                     | Fair                     | Poor                     |
|----------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| a. Course overall          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

|                             |                          |                                |                          |                                     |
|-----------------------------|--------------------------|--------------------------------|--------------------------|-------------------------------------|
| Definitely not<br>recommend | Unlikely to<br>recommend | Recommend with<br>reservations | Likely to<br>recommend   | Recommend with<br>enthusiasm        |
| <input type="checkbox"/>    | <input type="checkbox"/> | <input type="checkbox"/>       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

5. What are the strengths of the course?

6. How could the course be improved?

7. What did you most appreciate/enjoy/think was best about the course?

**Thank you!**

**Please return this form to the Course Coordinator or local support staff at the end of the course.**



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Course Evaluation Form**

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Course Title: Matrix Analytic Methods in Queuing Models

Date: 25/1/2018 Faculty Member (s): Dr. S. R. Chakravarty, A. Krishnamoorthy

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                           | Good                                | Fair                     | Poor                     |
|----------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|
| a. Course overall          | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

|                             |                          |                                |                                     |                              |
|-----------------------------|--------------------------|--------------------------------|-------------------------------------|------------------------------|
| Definitely not<br>recommend | Unlikely to<br>recommend | Recommend with<br>reservations | Likely to<br>recommend              | Recommend with<br>enthusiasm |
| <input type="checkbox"/>    | <input type="checkbox"/> | <input type="checkbox"/>       | <input checked="" type="checkbox"/> | <input type="checkbox"/>     |

5. What are the strengths of the course?

6. How could the course be improved?

7. What did you most appreciate/enjoy/think was best about the course?

**Thank you!**

**Please return this form to the Course Coordinator or local support staff at the end of the course.**





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Indian Institute of Technology Kharagpur  
Course Evaluation Form**

Your feedback is critical for the GIAN team to ensure we are meeting your educational needs. We would appreciate if you could take a few minutes to share your opinions with us so we can serve you better.

Course Title: Matrix Analytic Methods in Queuing Theory  
Prof. Srinivas R. Chakravarty

Date: 15-25 Jan, 2018 Faculty Member (s) Prof. A. Krishnamoorthy, Dr. Manikandan, Dr. Manikandan

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                           | Very Good                | Good                     | Fair                     | Poor                     |
|----------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| a. Course overall          | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

Definitely not recommend     Unlikely to recommend     Recommend with reservations     Likely to recommend     Recommend with enthusiasm

5. What are the strengths of the course?

*The depth of knowledge in the subject, showing various ways to approach a given topic inspired us to learn the subject with vigour.*

6. How could the course be improved?

*No doubt, the course was excellent. But I feel spending 3-4 days in learning simulation would have been more effective for me.*

7. What did you most appreciate/enjoy/think was best about the course?

*Two way traffic, problem solving methods, all nice companions made my 10 days unforgettable.*

**Thank you!**

**Please return this form to the Course Coordinator or local support staff at the end of the course.**



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Course Title: Matrix Analytic Methods in Queuing theory Models.

Date: 15.01.18 to 25.01.18 Faculty Member (s): S.R. Chakravorty, A.K. Mookherjee, Dr. Mani Kandan

1. Given the topic, was this course  a. Too short  b. Right length  c. Too long

2. In your opinion, was this course:  a. Introductory  b. Intermediate  c. Advanced

3. Please rate the following:

|                            | Excellent                | Very Good                           | Good                                | Fair                     | Poor                     |
|----------------------------|--------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|
| a. Course overall          | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Course Instructor       | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Quality of Presentation | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Course Material         | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Video and Acoustics     | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Would you recommend this course?

Definitely not recommend  Unlikely to recommend  Recommend with reservations  Likely to recommend  Recommend with enthusiasm

5. What are the strengths of the course?

Excellent Course instructions, good Course timings, Excellent coordination

6. How could the course be improved?

Start from basic results & definitions so that beginners also can follow. First two days must be

7. What did you most appreciate/enjoy/think was best about the course?

Participants from different states in India

Thank you!

Please return this form to the Course Coordinator or local support staff at the end of the course.