

The registration fee includes the instructional materials, refreshments between sessions. Accommodation will be provided to the outstation participants on payment basis, subject to the availability within the campus. Separate request is to be submitted in prior, by participants for the accommodation arrangement. TA/DA will not be paid for any participants.

SELECTION AND MODE OF PAYMENT

Selected candidates will be intimated through e-mail. They have to remit the necessary course fee to the bank as per the details given below.

Participants from abroad: US \$200

Industry/ Research Organizations: INR 6000

Participants from India:

Academic Institutions: INR 4000

PhD Scholars or above: INR 2000

UG/PG students: INR 1500

Account Name: **GIAN CSE JULY 2017**

Account No: **8569101002865**

Bank: **CANARA BANK**

Branch: **REC DURGAPUR**

Branch Code: **8569**

IFSC: **CNRB0008569**

MICR Code: **713015203**

SWIFT Code: **CNRBINBCCFD**

Candidates registering early will be given preference in the short-listing process.

ABOUT THE COURSE

MHRD, Govt. of India has launched an innovative program titled "Global Initiative of Academic Networks (GIAN)" in higher education, in order to gather the best international experience. As part of this, internationally renowned academicians and scientists are invited to augment the country's academic resources accelerate the pace of quality reforms and elevate India's scientific and technological capacity to global excellence.

ABOUT THE INSTITUTE

The National Institute of Technology, Durgapur (formerly Regional Engineering College, Durgapur), was established by an Act of Parliament in 1960 as one of the eight such colleges aimed to function as a pace setter for engineering education in the country and to foster national integration. It is a fully-funded premier Technological Institution of the Government of India and is administered by an autonomous Board of Governors. The Institute is a University which awards B.Tech., M.C.A., M.Sc., M.B.A., M.Tech. and Ph.D. degrees to students after their successful completion of the specified courses.

ABOUT THE DEPARTMENT

The Department of Computer Science and Engineering (CSE) started imparting instructions with the most modern curricula and syllabus to the student's of undergraduate course since 1991 and post graduate course since July, 2004 apart from the Doctoral Degree programs on various research topics. The Department maintains an excellent teaching/learning and research environment with dedicated, qualified and dynamic faculties and well equipped laboratories. The Department embodies the university's tradition of excellence in engineering education.

CONTACT DETAILS

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GIAN Course on

Advanced Topics in Software Testing, Debugging, and Program Analysis

26 July – 31 July, 2017

Call for Registration and Participation

International Faculty

Dr. Koushik Sen

Associate Professor

Department of Electrical Engineering and
Computer Science

University of California, Berkeley, US

Course Co-ordinators

Dr. Bibhash Sen / Dr. Suchismita Roy
Department of Computer Science & Engg.
National Institute of Technology, Durgapur.

Organised by

DEPARTMENT OF COMPUTER SCIENCE &
ENGINEERING

National Institute of Technology, Durgapur.
Mahatma Gandhi Avenue,
Durgapur, West Bengal, India
Pin: 713209
www.nitdgp.ac.in

OVERVIEW OF THE COURSE

The course “Advanced Topics in Software Testing, Debugging, and Program Analysis” is organized in two modules that should be taken together. The topics in Module A will expose the participants to the advanced topics in software testing, debugging, and program analysis like Automated test generation using concolic testing and symbolic execution, Dynamic program slicing, Finding concurrency bugs using dynamic program analysis, Delta debugging, and Systematic testing and model checking of multithreaded programs. In Module B, the application of the Dynamic program analysis is emphasized. The topics in the module include Dynamic program analysis applied to JavaScript programs, Dynamic program analysis for finding memory and performance bugs in JavaScript programs.

COURSE CONTENT

- Automated test generation using concolic testing and symbolic execution,
- Scaling automated test generation to large complex programs
- Finding concurrency bugs using dynamic program analysis
- Confirming concurrency bugs using active testing
- Delta debugging
- Dynamic program slicing
- Systematic testing and model checking of multithreaded programs
- Dynamic partial order reduction for scalable model checking
- Dynamic program analysis applied to JavaScript programs
- Dynamic program analysis for finding memory and performance bugs in JavaScript programs
- Problem solving session with examples
- Laboratory Session & quiz

COURSE FACULTY



Dr. Koushik Sen is an associate professor in the Department of Electrical Engineering and Computer Science at the University of California, Berkeley. research interest lies in Software Engineering,

Programming Languages and Formal methods. He is interested in developing software tools and methodologies that improve programmer productivity and software quality. He is best known for his work on “DART: Directed Automated Random Testing” and concolic testing. He has received a NSF CAREER Award in 2008, a Haifa Verification Conference (HVC) Award in 2009, a IFIP TC2 Manfred Paul Award for Excellence in Software: Theory and Practice in 2010, a Sloan Foundation Fellowship in 2011, a Professor R. Narasimhan Lecture Award in 2014, and an Okawa Foundation Research Grant in 2015. He has won several ACM SIGSOFT Distinguished Paper Awards. He received the C.L. and Jane W-S. Liu Award in 2004, the C. W. Gear Outstanding Graduate Award in 2005, and the David J. Kuck Outstanding Ph.D. Thesis Award in 2007, and a Distinguished Alumni Educator Award in 2014 from the UIUC Department of Computer Science. He holds a B. Tech from Indian Institute of Technology, Kanpur, and M.S. and Ph.D. in CS from University of Illinois at Urbana-Champaign.

WHO CAN PARTICIPATE?

This course will benefit students and teachers in familiarizing the state-of-the-art of software engineering technologies. For working engineers and scientists, this program will open up new vistas to the problems in advanced software engineering technologies that are currently faced. Students of all levels (B.E/B.Tech./M.Sc./M.E/M.Tech./MCA/Ph.D.) are encouraged to attend. Faculty members

academia, engineers and researchers from service/government organizations/ R&D laboratories are welcome to attend.

HOW TO REGISTER?

Step 1: Web Portal Registration:

Visit GIAN Website at the link: <http://www.gian.iitkgp.ac.in/GREGN/index> and create login User ID and Password. Fill up the blank registration form and do web registration by paying Rs.500/- online through Net **Banking/ Debit/ Credit Card** as per instructions given there in. This provides the user with life time registration to enroll in any number of GIAN courses offered. Skip this step, if already registered.

Step 2: Course Registration:

Login to the **GIAN portal** again with the user ID and password already created in Step1. Click on **course registration** option at the top of registration form. Select the course titled “**Advanced Topics in Software Testing, Debugging, and Program Analysis**” from the list and click on **Save** option. Confirm your registration by clicking on **Confirm Course**. **Also, send the filled-in registration form to the contact address by post/e-mail.**

IMPORTANT DATES

Last date for receiving the GIAN registration form: **14-July-2017**

Intimation to participants: **16-July-2017**

Course dates: **26th-31st July 2017**

Selection will be as per the eligibility, and on First-Come-First-Served basis.

For more details Click:

http://nitdgp.ac.in/all_pdf17/Brochure%20For_mat_final.pdf

For online registration:

Step1: *Web Portal Registration:* Visit GIAN Website at the link: <http://www.gian.iitkgp.ac.in/GREGN/index> and create login User ID and Password. Fill up the blank registration form and do the web registration by paying Rs.500/- online through Net Banking/ Debit/ Credit Card as per instructions given therein. This provides the user with lifetime registration to enrol in any number of GIAN courses offered. Skip this step, if already registered.

Step 2: *Course confirmation:* Login to the GIAN portal again with the user ID and password already created in Step1. Click on course registration option at the top of registration form. Select the course titled “Advanced Topics in Software Testing, Debugging, and Program Analysis” from the list and click on Save option. Confirm your registration by clicking on Confirm Course

Step 3: For online payment and registration:

1. Please click the link below:

<https://docs.google.com/a/cse.nitdgp.ac.in/forms/d/e/1FAIpQLSdxa5x9YJKjRAZM7Obbpa0X6ph3O2zOntUhtPB0LIZm9DHh0g/viewform>

[If unable to open the link, please copy the link and paste it on the address bar of your browser. Enter]

2. Fill up the form including the payment details and click submit.
3. A confirmation mail of registration will be sent after only receiving correct information of payment.

Payment Details:

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IFSC: CNRB0008569

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Online mode of payment is preferred.

For any query, please feel free to contact us at: gian2017@cse.nidgp.ac.in