

Outstation participants will be provided accommodation and boarding in visitors Block/ Hostel in the campus on payment.

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.

Outstation participants requiring accommodation and boarding facilities have to pay Rs. 4,000/- in addition to the course fee.

Account Name	GIAN NITW
Account No.	62447453600
Bank	State Bank of India
Branch	NIT Warangal (NIT Campus)
Branch Code	20149
IFSC	SBIN0020149
MICR Code	506004011
SWIFT Code	SBININBB018

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

For any queries regarding registration of the course, please contact the Coordinator

CONTACT DETAILS OF COORDINATOR

Prof. D. SRINIVASACHARYA,
Professor and Head,
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National Institute of Technology,
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Telangana State, INDIA,
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ABOUT GIAN COURSE

Ministry of Human Resource Development (MHRD), Government of India (GoI) has launched an innovative program titled “Global Initiative of Academic Networks (GIAN)” in higher Education, in order to garner 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 DEPARTMENT

The Department of Mathematics is a highly reputed Departments which functions with excellence as its motto. The Department was started in the year 1959 along with other Engineering and Science Departments and has established itself as a dynamic center for academic and research activities. In addition to the teaching of courses in Mathematics for B.Tech and M.Tech Programs, the Department offers two P.G. Programs, M.Sc (Applied Mathematics) and M.Sc (Mathematics and Scientific Computing). At present, 20 Research Scholars are working for their Ph.D. The Department has a full-fledged computation laboratory to meet the requirements of the M.Sc. students, research scholars and the faculty.

ABOUT THE INSTITUTE

The National Institute of Technology (formerly Regional Engineering College), Warangal, established in the year 1959, is the first among the 31 NIT’s in the country setup as joint venture of the Government of India and the state government. Over the years, the Institute has established itself as a premier Institution in imparting technical education of a very high standard, leading to B.Tech, M.Tech and Ph.D. programs in various specializations of Science and Engineering streams. Warangal is known for its rich historical and cultural heritage. It is situated at a distance of 140 km from Hyderabad. Warangal is well connected by road and rail. National Institute of Technology, Warangal campus is 3 km away from Kazipet railway station and 12 km away from Warangal railway station. The nearest airport is Hyderabad.



GIAN course on SEPARATION AND INSTABILITIES IN HIGH SPEED FLOWS

August 06 - 17, 2018

**Call for Registration and
Participation**

International Faculty

Prof. JITESH S. B. GAJJAR
Department of Mathematics
University of Manchester
England, U.K.

Course Coordinator
Prof. D. SRINIVASACHARYA

DEPARTMENT OF MATHEMATICS
NATIONAL INSTITUTE OF TECHNOLOGY
Warangal-506 004
Telangana State, India.

OVERVIEW OF THE COURSE

The breakdown of classical boundary-layer theory and the advent of triple-deck theory was one of the most notable successes of the use of asymptotic methods to describe laminar separated flows. The same asymptotic approaches have also been successfully used to describe the instabilities of many flows at large Reynolds numbers. In this course we will study the asymptotic analysis of fluid flow at large Reynolds numbers and trace the development of the mathematical theory of laminar separation starting with Prandtl's boundary layer theory and looking at its failure to describe separated flows with Goldstein's singularity, and then moving on to study triple-deck theory and its many applications in external and internal flows. We will also discuss the use of asymptotic methods to describe the linear and nonlinear instability of flows at large Reynolds numbers and show how the same ideas can be used for receptivity theory, and nonlinear stability analysis.

OBJECTIVES

The primary objectives of the course are as follows:

- Exposing participants to the fundamentals of double, triple and multi deck theories,
- Providing exposure to analyze the separation and instabilities of the flows at large Reynolds numbers,
- Building in confidence and capability amongst the participants in developing of the mathematical theory of laminar separation and instabilities and its applications in external and internal flows
- Enhancing the capability of the participants to identify the related problems in engineering system.
- Provide the participants with the knowledge to teach courses on stability and separation in high speed flows
- Demonstrate how double, triple and multi deck theories are developed and applied.

- Provide the participants with a strong understanding of the principles and ideas behind stability and separation in high speed flows

ABOUT INTERNATIONAL FACULTY

Professor Gajjar has over 32 years of research and teaching experience. He holds a BSc, ARCS, PhD, DIC (Mathematics) degrees from the Imperial College London, United Kingdom. He worked at the University of Exeter for about six years until he joined the University of Manchester in November 1991 as Lecturer in Applied Mathematics. Currently, he is the Professor of Applied Mathematics at the University of Manchester since 2007.

He worked and published extensively on various aspects of the linear and nonlinear development of cross flow instability in three dimensional incompressible and compressible boundary layer flows, numerical solution of the Navier-Stokes equations, nonlinear critical layer theory, instabilities in the flow over compliant surfaces. His recent research work is focussed on developing methods for computing two-dimensional and three-dimensional partial-differential eigenvalue problems for globally unstable flows. He has successfully supervised 19 PhD students and 18 M.Sc. students, His research articles have appeared in over 50 leading academic journals in applied mathematics, physics and engineering. He is the co-author of the text book "Fluid Dynamics, part – I, classical fluid dynamics" (2014) (Oxford Univ. Press) and one more book "Fluid Dynamics, part – IV, Hydrodynamic stability theory" is in preparation. He is a fellow of Royal Society of Arts. He hold several major administrative positions within and outside the institute. He regularly reviews journal articles for several leading international journals.

WHO CAN PARTICIPATE?

This course is open to all graduate students, PhD students, Post Doctoral research students and faculty working in Applied Mathematics, Mechanical Engineering, Chemical Engineering, Civil

Engineering, and Engineering Physics as well as Materials Scientists with the ideas behind the Stability and Separation in High Speed Flows.

The Faculty and Research Scientists with interests in Fluid Dynamics, High Speed Flows Laminar Separation, and Hydrodynamic Stability theory are also eligible.

HOW TO REGISTER

Stage-1: Web Portal Registration

Visit: <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. This provides the user with life time registration to enroll in any number of GIAN courses offered.

Stage-2: Course Registration

Login to the GIAN portal with the user ID and Password already created in Step 1. Click on Course Registration option at the top of Registration Form. Select the Course titled "Separation and Instabilities in High Speed Flows" from the list and click on save option. Confirm your registration by clicking on Confirm Course

REGISTRATION FEE

Faculty & Scientists from R&D Labs	Rs. 4,000/-
Participants from Industry / Training organizations/ Consultancy firms	Rs. 8,000/-
Students & Research Scholars from India	
With award of grade	Rs. 2000
Without award of grade	Rs. 3000
Participants from abroad	
For Students	USD 100
For Other participants	USD 200

The registration fee includes instructional materials, tutorials, laboratory and computer use, free internet facility, working lunch, mid sessions tea and snacks.