NUMBER OF SEATS
Total number of seats is limited to about 20. Further, first-come first-served basis will be used to fill these seats. Lastly, the seats will be suitably distributed among the educational institutes, Govt. R&D organizations, Public Sector Undertakings and Private Industries, as per the responses received.

PRE-REGISTRATION
Organizations / individuals desirous of participating in this course are required to pre-register by sending a communication (i.e. letter/fax/email) latest by 21st January, 2018.

REGISTRATION CONFIRMATION
Participants are required to confirm their registration by sending the completed Registration form, along with the course fees, to the course coordinator, latest by 09th February, 2018. Fees must be paid by a demand draft/Bank Transfer, in favour of “Registrar, IIT Bombay (CEP A/c)”. Kindly note that no income tax is to be deducted at source from the course fee payments as IIT Bombay is exempted from the same.

BOARDING AND LODGING
Guest House facility in the campus is available for limited number of participants on payment basis as per the actuals and with advance request. All provisionally registered participants will be kept on waiting list and will be provided accommodation subject to its availability on their arrival.

COORDINATOR’S PROFILE
Prof. Ashok Joshi has over fifteen years of experience in teaching & research in the flight mechanics of aircraft at both undergraduate and postgraduate levels.

ADDRESS FOR COMMUNICATION
Prof. Ashok Joshi, (Course Coordinator)
Dept. of Aerospace Engineering, IIT Bombay,
Powai, Mumbai - 400 076
Tel. : 022 - 2576 7113, 25767102 (O)
Fax. : 022 – 25722602
Email. : ashokj@aero.iitb.ac.in

Indian Institute of Technology, Bombay
Continuing Education & Quality Improvement Programmes

Announces a Short Term Course On
Introduction to Aircraft Flight Mechanics

During
February 26 - March 02, 2018

Course Coordinator
Prof. Ashok Joshi
Department of Aerospace Engineering
INTRODUCTION
Aerospace sector in the country has seen tremendous growth and activity over the last 15-20 years and, consequently, has thrown up requirements for manpower that has familiarity with an important discipline i.e. aircraft flight mechanics. Further, with the emergence of unmanned aerial vehicles as cost-effective tools for civilian as well as defence application, there is a segment of technologists who, while not aerospace engineers, are interested in the development of fixed wing aircraft as a viable option in this segment. Thus, there is a need to expose non-aero graduates to flight mechanics related concepts, that are integral to the design of fixed wing aircraft. The present short-term course aims to provide an exposure to applicable concepts, methodologies and principles when dealing with flight mechanics of fixed wing aircraft and is also suitable for those aerospace graduates who need a refresher of fundamental principles that govern the flight of an aircraft.

COURSE COVERAGE

Introduction: Definitions, concept of aircraft flight, axes, sign conventions for forces, moments and motion variables.

Longitudinal Motion: Lift & pitching moment models, concepts of aerodynamic centre, trim and stability of flight & role of horizontal tail. Neutral point as a design attribute. Elevator as longitudinal control option, control power estimates. Stick-free stability & stick forces, control for manoeuvres.

Lateral-Directional Motion: Sideslip, rolling and yawing actions, contributions of vertical fin, dihedral angle & wing position to stability. Rudder as directional & ailerons as lateral control devices.

Basic concept of flight dynamics: Frames of references and basic flight dynamic formulation, inertial attitude and velocity, complete flight dynamic equations, forces and moments.

Linearized Dynamic Models & Responses: Longitudinal and lateral dynamic models, Phugoid and short period approximations, Roll, Spiral and Dutch roll approximations, open loop response to control actuation.

FACULTY
Prof. Ashok Joshi (ashokj@aero.iitb.ac.in), Aerospace Engineering Department

PRE-REQUISITES
The course requires a thorough understanding of Newtonian Mechanics, apart from basic fluid mechanics. Also, familiarity with basic calculus (differential & integral) and numerical analysis techniques will be useful. Lastly, an exposure to aerodynamics of wing type geometries will be an added advantage.

FACILITIES
Participants should bring their Laptops for use during the course.

VENUE
Seminar Hall, Van Vihar Guest House

WHO MAY BENEFIT
The course is for all those non-aero graduates who are desirous of acquiring basic background in the mechanics of fixed wing aircraft flight including, trim, stability and control concepts, apart from design and operation related inputs. Aero graduates can also benefit from a refresher of the basic flight mechanics concepts methodologies.

COURSE FEES
Course fee (Inclusive of 18% GST) per participant will be as follows.
Rs. 30000/- for Educational Institutions & Govt. R&D Organizations
Rs. 40000/- for Public Sector Undertakings & Private Industries

Fee, which includes soft copies of course material, tea & working lunches on all the days, is not refundable. However, substitution of participants is possible if notified sufficiently in advance.