Multibody dynamic (MBD) analysis is a study on how mechanism systems which consist of solid bodies, or links, that are connected to each other move under the influence of forces. The subjects of interests in the analysis are the kinematics and kinetics of the mechanisms. Kinematics is a study of the motion of bodies or points in terms of position, velocity and acceleration. Whilst, kinetics is a study of motion and its causes in terms of forces and torques. All of the analyses use Newton’s laws of motions.

Automated Dynamic Analysis of Mechanical System (ADAMS) /view is a multi-body dynamics software which enables engineers to create and test virtual prototypes of mechanical systems in a fraction of the time and cost required for fabrication and testing. The software incorporates real physics by simultaneously solving equations for problems related to kinematics and kinetics.

ADAMS is capable of running non-linear dynamics in a fraction of time required by FEA solutions by utilizing multi-body dynamics solution technology. ADAMS software package also includes advanced application of dynamics analyses such as ADAMS/car, ADAMS/aircraft and ADAMS/rail.

**INTRODUCTION**

The course is designed to familiarize the users with the basic functions of the ADAMS/view software. Upon completion of this course, participants will be able to:
1. Possess a good understanding of the fundamental theories of Multibody Dynamics analysis
2. Develop simplified mechanism models based on kinematics diagrams and import existing CAD models into ADAMS software
3. Apply joints, constraints, boundary conditions, motions, forces, etc. to the models
4. Simulate and analyze the results of kinematics and kinetics of the models

**OBJECTIVES**

**COURSE CONTENT**

1. Introduction to ADAMS/view module
2. Brief theory of Multibody Dynamics Analysis
3. Modelling:
   i. Creating rigid bodies such as linkages, boxes, cylinders, plates and applying properties to the rigid bodies
   ii. Applying and modifying joints or connectors
   iii. Applying and modifying motions and forces
   iv. Creating measures and design variables
   v. Multi views of models
4. Simulation:
   i. Interactive simulation
   ii. Scripted simulation
   iii. Animation control
5. Kinematics and Kinetic Analysis: Position, velocity, acceleration, Forces and Torques

**DATE:** 19th JULY 2017   **TIME:** 8.30am - 5.00pm

**VENUE:** Universiti Teknologi PETRONAS (UTP), Seri Iskandar, 32610 Tronoh, Perak.
Instructors/supervisors who are teaching/supervising courses such as Dynamics, Mechanical Engineering Design, Mechanics of Machines and Final Year Project (FYP)

Researchers

Undergraduate/Postgraduate students

Design Engineers

**COURSE INSTRUCTORS**

**Ir. Dr. Masri Bin Baharom** is a Professional Engineer and an Associate Professor at Universiti Teknologi PETRONAS. He has 7 years of experience in industry and over 15 years of academic experience in the field of Engine Design and Vehicle Dynamics modeling. He has published more than twenty peer reviewed journals and conference papers.

**AP Dr. Abdul Rahim Othman** is an Associate Professor at Universiti Teknologi PETRONAS. He has 2 years of experience in industry and over 10 years of academic experience in the field of Dynamics Systems modelling. He has published more than fifty peer reviewed journal papers.

**HOW TO APPLY**

Email to [CAPE@utp.edu.my](mailto:CAPE@utp.edu.my) for registration by **31st JUNE 2017**.

Seats are limited. A seat will be confirmed once the payment / LOU is received. Confirmed participants will be informed via email.