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Technical Seminar Organized by the Department of Mechanical Engineering

TCS Academic Interface Programme on Importance of CAD/CAE in Product Life Cycle Management

The Department of Mechanical Engineering, MVJCE, organized a technical seminar on ‘TCS Academic Interface Programme on Importance of CAD/CAE in Product Life Cycle Management’. The Resource Person was Mr. Jayaprakash A J, Delivery Manager, Aerospace Vertical, Tata Consultancy Services, Bengaluru. The session was held at Rajalakshmi Seminar Hall, MVJCE, from 10.10 am to 12.30 pm, on 19.10.2019.

Participants

The Technical Seminar was attended by students of 5th and 7th Semesters, and faculty members of the Departments of Mechanical Engineering and Aerospace Engineering.

About the Speaker

Mr. Jayaprakash A J completed his Bachelors degree in Sir MVIT, Bangalore, in the year 1997, and Masters degree from BMS College of Engineering in the year 2000. He joined ISRO in 2000 and served as a scientist -SD, in ISRO Satellite Centre, Bangalore, for 6 years. Presently he is working as Delivery Manager in Aerospace Vertical at TCS. He has 19+ years of experience in Structural Analysis and Project Delivery management. He has executed various projects in the domain of aero-structure stress analysis using finite element analysis method, and numerical calculations for various components of aero engine, thrust reverser, aircraft emergency doors and various spacecraft structures. He is also an expert in Design / Analysis customization and automation. He has published Research Papers in 5 reputed International Journals, and has one Patent to his credit.

Inauguration of the Event

The Technical Seminar started with the welcoming of the Speaker and the gathering. Dr. Sunil S W introduced the Resource Speaker Mr. Jayaprakash A J, and Dr. P Mahabaleswarappa, Dean Academics - MVJCE, welcomed him with a bouquet.

Contents of the Technical Seminar – a Synopsis

The Seminar started with an introduction of the activities being carried out at TATA, and a brief overview of TATA Consultancy Services. The advances made by the Advanced Materials division at TATA, in Aerospace and Defence sectors, and their joint venture projects with Boeing Company were highlighted. The steps involved in product life cycle, with respect to market demands were discussed in details. Destructive testing of aeroplane components, how to use strain gauges to measure deflections and how to interpret experimental acquired data were discussed. Capabilities of CATIA/UG for mechanical part design (3D parts, Composites, Kinematics), Systems Engineering, Electrical system, Fluid Design, Optimization, Automation and Customization were explained in detail. The analysis types required after the modelling phase, such as Static analysis, Dynamic analysis (Free Vibration, Response Transient and Random), Buckling analysis, Crash analysis, Fatigue and damage tolerance, Computational fluid dynamics, Design iteration and classical approach for strength check were also briefly explained by the Speaker. Post processor tools like ANSYS, Hypermesh, Patran, Nastran and Abaqus were introduced to the gathering, and their capabilities were discussed.

Various standards used in aerospace part modelling, sizing procedure process automation and the role of analyst were addressed in detail. Different perspectives to understand complex problems required to analyse the components in terms of aerodynamics, production and stress levels, were explained very graphically, with existing case studies being presented.

Expectations from Trainee Engineers

The Speaker also spoke about what is expected from young Engineers joining any industry. He advised students to be strong with their basic fundamental concepts and have exposure to industries through internships. Getting recruited into core companies will depend on the elective subjects chosen and the academic projects carried out during the course. Additional knowledge

of commercial packages such as ANSYS, Nastran, Optistruct, Abaqus, CATIA, UG, PRO-E will help students get placed in core companies. The Speaker suggested to students to learn programming languages such as python, C++ etc. This will add value, and last but not the least, he requested students to hone their communication skills.



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Technical Seminar on “TCS Academic Interface Programme on Importance of CAD/CAE in Product life cycle management” organised by Department of Mechanical Engineering. The resource person Mr. Jayaprakash A.J. Delivery Manager, Aerospace Vertical, Tata Consultancy Services , Bengaluru, India is interacting with students.



Technical Seminar on “TCS Academic Interface Programme on Importance of CAD/CAE in Product life cycle management” organised by Department of Mechanical Engineering. The resource person Mr. Jayaprakash A.J. Delivery Manager, Aerospace Vertical, Tata Consultancy Services , Bengaluru, India, answering the queries raised by students.

Outcome of the Event:

The Technical Seminar enabled students to understand the importance of CAD/CAE in product life cycle. The role of commercially available software packages in the product life cycle and their capabilities were understood by students. Students got tuned into what the Industry expects from them, while joining. The Seminar has also motivated them to learn some commercially available software, apart from focusing on their curriculum, and enhance their skills.