

## **Technical Club : Mechatronics**

CORE DISCIPLINE : MECHANICAL AND ELECTRONICS ENGINEERING  
(INTERDISCIPLINARY)

MENTOR : MR. VIKAS SANGWAN, ASSISTANT PROFESSOR, MECHANICAL  
ENGG.

CO-MENTOR: MR. JITENDER SAINI, ASSOCIATE LECTURER , ECE

### **TECHNICAL BACKGROUND AND UTILITY OF THE CLUB :**

THE WORLD IS QUICKLY MOVING TOWARDS A FUTURE WHERE MANY MECHANICAL PRODUCTS CONTAIN COMPUTERS AND ELECTRONIC SYSTEMS FOR MONITORING OR CONTROL. THIS INTEGRATION OF MECHANICAL AND ELECTRONIC DEVICES , OR MECHATRONICS, MAKES IT POSSIBLE TO DESIGN INTELLIGENT, RELIABLE, VERSATILE ELECTROMECHANICAL SYSTEMS SUCH AS INDUSTRIAL ROBOTS, MEDICAL DEVICES, AIRCRAFT SIMULATORS, AUTOMATED ASSEMBLY LINES, BUILDING CONTROL SYSTEMS, AND AUTONOMOUS VEHICLES. SKILLS IN MECHATRONICS WILL BE IN HIGH DEMAND FOR MANY YEARS TO COME.

MECHATRONICS IS A MODERN DISCIPLINE THAT TRANSCENDS THE BOUNDARIES BETWEEN ELECTRONICS, MECHANICAL, ELECTRICAL, AND COMPUTER ENGINEERING. THE DEMANDS OF CURRENT AND FUTURE TECHNOLOGIES REQUIRES ENGINEERS THAT HAVE INTERDISCIPLINARY SKILLS. THE BREADTH OF EDUCATION REQUIRED BY MECHATRONICS WILL NOT ONLY PROVIDE SUCH SKILLS IN THE SHORT TERM, BUT WILL ENABLE THEM IN THE LONG TERM TO EFFECTIVELY ADAPT TO RAPIDLY SHIFTING TECHNOLOGIES.

THE ASSOCIATION WITH THIS CLUB WILL CREATE INTEREST OF STUDENTS IN THIS TECHNOLOGICAL DOMAIN AND INSPIRE THEIR CREATIVITY TO INNOVATE THROUGH PRACTICAL LEARNING AND APPLICATION ORIENTED MINDSET. UNDOUBTEDLY, THIS IS THE ASPECT MAINLY SEEN IN THE ENGINEERING PROFESSION AND THUS DEFINITELY BOOSTS THE CAREER PROSPECTS AND EMPLOYABILITY. WITH COMPETENCE IN THIS DOMAIN, STUDENTS COULD POSITIVELY LOOK FOR EXCITING CAREER IN FOLLOWING FIELDS ;

- **MANUFACTURING AUTOMATION**
- **AUTOMOTIVE INDUSTRY**
- **AERONAUTICS INDUSTRY**
- **POWER GENERATION AND DISTRIBUTION**



Fig: Image showing the use of combination of mechanical system and electronic control system for industrial application

### **ACTIVITIES TO BE CONSIDERED UNDER THE CLUB:**

THE ACTIVITIES OF THE CLUB HAVE BEEN WELL FORMULATED TO DEVELOP INTEREST AND COMPETENCE OF THE STUDENTS IN THE RELATED TECHNOLOGIES WITH EMPHASIS ON APPLICATION ASPECTS OF THE CONCEPTS. FOLLOWING ACTIVITIES HAVE BEEN CONSIDERED:

- LEARNING THROUGH TECHNICAL MAGAZINES AND JOURNALS.
- MECHATRONICS CONCEPTS STUDY CONSIDERING THE PROCESS OF MODELING, SIMULATION, VISUALIZATION AND EVALUATION AT CORE
- DESIGN AND PRACTICAL MODELING OF MECHANISMS AND ELECTRONIC CIRCUITS
- SOFTWARE SIMULATION OF THE DESIGN AND ITS PERFORMANCE EVALUATION

- PAPER WRITING AND PRESENTATION
- QUIZ AND GROUP DISCUSSIONS ON THE CLUB THEME RELATED TOPICS
- CONDUCTION OF WORKSHOPS AND PRACTICAL TRAINING SESSIONS
- INTERACTION WITH EMINENT INDUSTRIAL AND ACADEMIC EXPERTS IN THE DOMAIN OF CLUB THEME
- INDUSTRIAL AND INSTITUTIONAL TOURS
- CONSIDERING INDUSTRIAL R&D PROJECTS IN THE DOMAIN OF THE CLUB THEME