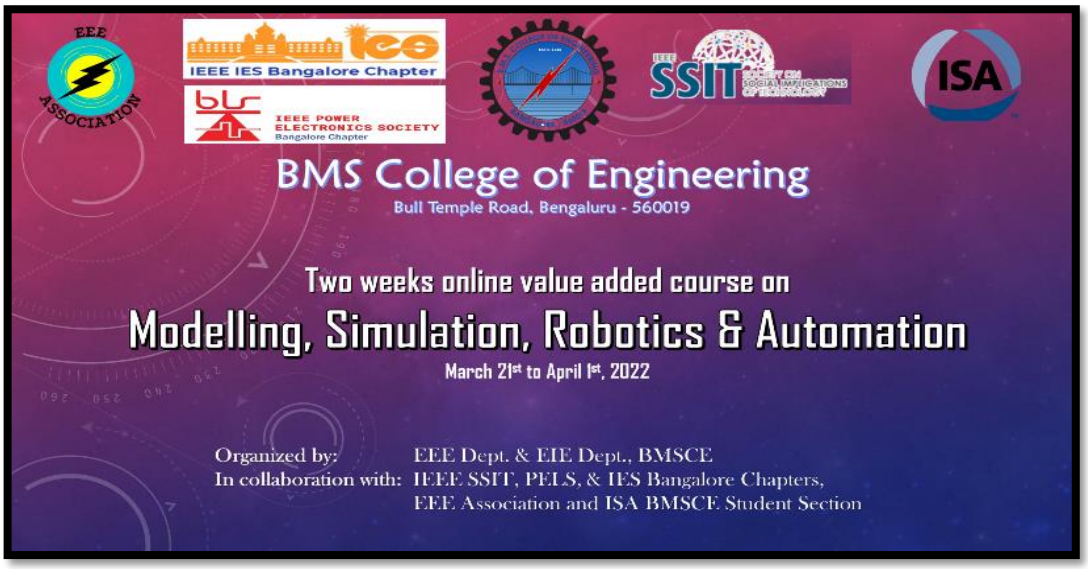
Report on **Two week Value added course on "Modelling, Simulation, Robotics & Automation", 21st March to 1st April 2022**, Organized by Department of Electrical and Electronics Engineering, Department of Electronics and Instrumentation Engineering in collaboration with IEEE SSIT, PELS & IES Bangalore Chapters, EEE Association and ISA BMSCE Student Section from 21st March 2022 to 1st April 2022.

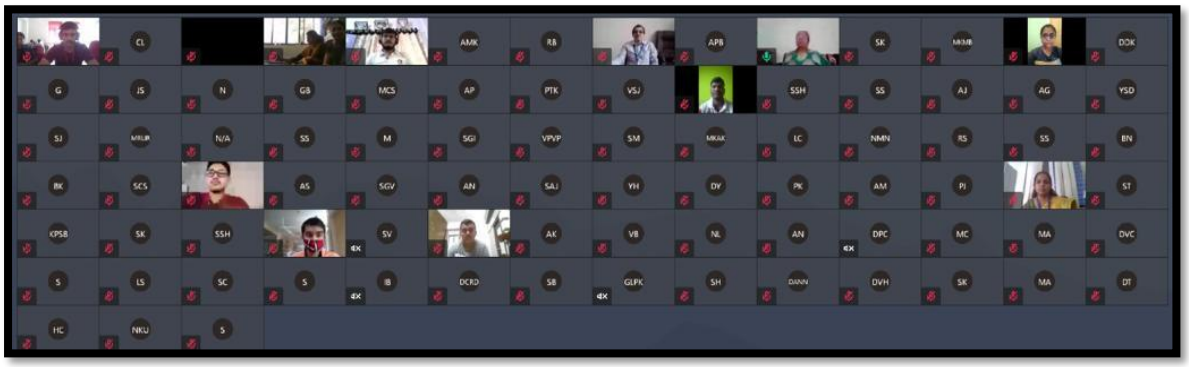


The schedule of the course was as follows:

Date	Time	Session-Topic	Resource Person
21.03.2022 Monday	1.30 p.m. – 4.30 p.m	Inaugural address	External Expert
		Introduction to MATLAB	**Dr. Dipesh kumar** , Asst. Professor, Department of EEE, BMSCE
		Mathematical modelling using MATLAB/Simulink	**Dr.R.S.Geetha** , Professor Department of EEE, BMSCE
22.03.2022 Tuesday	1.30 p.m. – 4.30 p.m	Simulink modelling applications	**Dr. Dipesh kumar** , Asst. Professor, Department of EEE, BMSCE
		Modelling of Power Electronic converters	**Prof. Divya. S,** Asst. Professor, Department of EEE, BMSCE
23.03.2022 Wednesday	1.30 p.m. – 4.30 p.m	Introduction to Control Systems tool box	**Dr. Chethan Raj D** Asst. Professor, Department of EEE, BMSCE **Dr. Santosh R Desai** Professor and Head, Department of EIE, BMSCE
24.03.2022 Thursday	1.30 p.m. – 4.30 p.m	Introduction to Robotics Types and components of a robot, Classification of robots, Kinematics systems,Degrees of Freedom	**Dr. Jyoti Bali,** Asst. professor, Department of Automation & Robotics, KLE Technological University Hubballi
25.03.2022 Friday	1.30 p.m. – 4.30 p.m	Robot Kinematics Kinematic Modelling: Translation and Rotation Representation Coordinate transformation ,DH parameters.	**Prof. Amit Talli,** Asst. professor , Department of Automation & Robotics , KLE Technological University Hubballi
26.03.2022 Saturday	1.30 p.m. – 4.30 p.m	Robot Kinematics and Dynamics Forward and inverse kinematics, Jacobian, Dynamic Modelling: Forward and inverse dynamics	**Prof. Amit Talli,** Asst. professor , Department of Automation & Robotics , KLE Technological University Hubballi
28.03.2022 Monday	1.30 p.m. – 4.30 p.m	Robot Kinematics using Robo Analyser Introduction to robo analyser, DH parameters ,Kinematic design using the robo analyser	**Prof. Chaitanya.L,** Asst. Professor, Department of EEE, BMSCE.
29.03.2022 Tuesday	1.30 p.m. – 4.30 p.m	Introduction to Fuzzy logic controllers	**Dr. Prema V.** Associate Professor, Department of EEE, BMSCE.
30.03.2022 Wednesday	1.30 p.m. – 4.30 p.m	Introduction to DSP tool box	**Dr. Veena N Hegde/ Prof. Chaitanya L.** BMSCE
		Introduction to AI techniques in power Engineering	**Dr. Lakshminarayana C** Professor ,Department of EEE, BMSCE
31.03.2022 Thursday	1.30 p.m. – 4.30 p.m	Robot Sensors and Actuators Sensors: Internal and External sensors, Actuators, Digital encoders Vision applications in robotics.	**Dr. Veena N Hegde** Professor, Department of EIE, BMSCE
01.04.2022 Friday	1.30 p.m. – 2.45 p.m	Robot Control System Linear and Non-linear controls, Design of simple manipulator controllers	**Dr. Santosh R Desai** Professor and Head, Department of EIE, BMSCE
	2.45 p.m.-4 p.m.	Renewable Energy Systems	**Dr.Madhava Ram** Asst. Professor, Department of EEE, BMSCE.
	4:00 p.m – 4.30 p.m	Valedictory	

The course witnessed the registration of whopping **126 participants** from various departments of BMS College of Engineering, Bangalore and other colleges like Malnad College of Engineering, Hassan; MIT Academy of Engineering, Pune; RNS Institute of Technology, Bangalore; Jain University, Bangalore; etc.

The course marked the beginning with an inaugural ceremony followed by a Guest Lecture from Dr Uma K Rao, ex faculty RV College of Engineering, Bangalore. The course saw a massive contribution not only from prominent internal faculties from BMS College of Engineering but also from faculties of KLE Technological University, Hubli. The course helped students to learn about copious topics ranging from basics of Mathematical Modelling to Robot Control Systems, it helped them materialise their knowledge gained from theoretical studies to be implemented using applications like MATLAB, Simulink and Robo Analyzer.



Dr Jyoti Bali and Prof. Amit Talli from KLE Technological University, Hubli took session on "Introduction to Robotics" and "Robot Kinematics & Dynamics" respectively.

The entire curriculum of the course was seen to be very interactive and kept the students engaged throughout the session at the same time letting them test their understanding through the quotidian quizzes held from the various topics covered. The highest participation for quiz was recorded on first and fourth day of the course with number of responses hitting above 90. From the entire response of the quiz, three star performers were shortlisted. First positon been held by Mr Shrayan Karkun and Mr Nishanth M Navada from 6th semester B.E. EEE, BMS College of Engineering for scoring 45/45 and second position was held by Mr Suhas M Jamakhandi from 1st semester M.Tech Power Electronics, BMS College of Engineering for scoring 42/45.

The conclusion of the grand 2 weeks online course was marked by a valedictory session where in the HoDs of departments of EEE and EIE officially marked the end to the course and presented the certificates to the star performers for their exceptional performances.

Student Coordinators:

1. Aditya Kumar Mondal , VI Sem, EEE Dept
2. Amogh P Rao, VI Sem, EEE Dept
3. Tejal Kodagali VI Sem, EIE Dept
4. Mihir P. VI Sem, EIE Dept

Faculty coordinators:

1. Dr. Veena N Hegde
2. Dr. R.S. Geetha
3. Prof. Chaitanya L.