(MAJPS 18)

MODELING AND ANALYSIS OF JUST-IN-TIME PRODUCTION SYSTEMS

Organized by
DEPARTMENT OF MECHANICAL ENGINEERING
National Institute of Technology Calicut
NIT Campus P.O., Calicut - 673601 Kerala, India

Under TWINNING WITH
Govt. Engineering College Bharatpur
Bharatpur -321303
Rajasthan, India

Sponsored by TEQIP – III, MHRD

PREAMBLE

Customers' needs for variety, quality and quick response, led the producers in both the developed and the developing countries to implement new organizing principles for their production processes. Just-in-time production systems (lean production systems) address the challenge of providing a large variety of products by leveling production schedules. The just-in- time production systems use pull production control, in which schedule for the final stage of the process initiates the production in the upstream stages. Mixed-model production supports just-in-time systems to accomplish production leveling by producing a variety of products in a mixed fashion. This course aims to explore the features, the planning framework and the scheduling approaches for a production system to be just-in-time systems. The participants are able to understand concept of developing value stream mapping, models for assessing leanness, enablers of just-in-time productions, design of KANBAN based pull production system, an understanding on the planning framework, development of mixed model production sequencing and its mathematical modelling and solution procedures. Another objective of the programme involves deliberations on the topic of development of efficient algorithms to solve the sequencing problems in JIT systems which are computationally NP-hard type. Application of existing and modified evolutionary algorithms for both single and multiple objectives will also be a part of the programme outcomes.

TOPICS TO BE COVERED

- Value stream mapping and simulation modelling
- Models for assessing the "leanness"
- Basic enablers of lean production system and fundamentals of KANBAN based pull production system
- Design of JIT production systems based on KANBAN signalling system
- Design of cellular manufacturing based pull production and production levelling with uniform schedule
- Mixed model production (MMP) sequencing - mathematical models for scheduling problems in MMP systems
- Application of evolutionary algorithms for solving MMP sequencing problems
- Multi-objective algorithms for MMP sequencing

RESOURCE PERSONS

Experts from NITC, IIT, IIM, Industries and other Invited Experts from Academic/Research Institutions.

ELIGIBILITY

Faculty members from various AICTE approved Engineering Colleges/Institutions can apply.
Working professionals and practicing engineers from various research organizations and industries, and research scholars are also eligible to participate in the programme.

REGISTRATION FEE

Industry/ Research Organizations	: Rs. 5000+18% GST
Academic institutions: Faculty*	Rs. 2000+18% GST
Research scholars	: Rs. 2000+18% GST

This includes only registration materials. Boarding and lodging will be extra.

*20 faculty members selected on first-come-first-serve basis from the total applicants will be exempted from registration fee, food and accommodation charges.

HOW TO APPLY?

For registration, fill the online form at **http://qrs.ly/fw705yc** and upload the scanned copy of the signed endorsement form. (See the QR code given along with endorsement form.) The registration fee has to be paid through online transfer. The bank details are given below for online transfer.

Acc. Name: **Director NIT Calicut, Continuing education programme**, Account No: **37618269594**; Branch: **SBI NIT Calicut,** IFSC code: **SBIN0002207**

Last date for registration is **08 June 2018**.

TRAVEL EXPENSES

No TA/DA will be paid for any participant.

BOARDING & LODGING

All faculty members (except 20 selected people) and research scholars may be accommodated in the hostel /international hostel on payment basis, if they request for it. Participants from industry /research organizations may be provided lodging in the Institute Guest house on payment basis, subject to availability.
Charges:

International hostel	Rs. 450/Room
Ladies hostel	Rs. 250/Room

COORDINATORS: **Dr. V. Madhusudanan Pillai** | **Er. Rahul Srivastava**

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Boys hostel	Rs.250/Room
Guest house	Rs. 350/Room
Breakfast, lunch and dinner	Rs.250/day

ABOUT NIT CALICUT

National Institute of Technology Calicut (NITC) is fully centrally funded by MHRD and is governed by the NIT Act 2007. Institute has ten departments, three schools and nine research centers. It offers ten UG, and thirty PG programmes along with the Ph.D. programme in various fields of Science, Technology and Engineering. Faculties in the various Departments have active collaborations with universities and elite institutions within and outside India for research and have active consultancy for industries. For details, see the website: www.nitc.ac.in.

ABOUT THE DEPARTMENT

The Department of Mechanical Engineering is one of the oldest departments in this institute. It was established at the inception stage of the Calicut Regional Engineering College (CREC) in 1961, which was the forerunner to the present National Institute of Technology Calicut (NITC). At present, the department offers two undergraduate programmes – B.Tech. (Mechanical Engineering) and B.Tech. (Production Engineering). It also offers six post graduate programmes – Industrial Engineering and Management, Thermal Sciences, Manufacturing Technology, Materials Science and Technology, Energy Engineering and Management, and Machine Design – leading to the M.Tech. degree of the Institute. The department also offers Ph.D. programme in various fields of Mechanical Engineering. The Department is a recognized QIP centre of the AICTE for both M.Tech. and Ph.D. programmes. Besides teaching, the members of the faculty are involved in research, consultancy work (Design & Development, Energy Auditing, Industrial Sickness Evaluation, Testing, etc.), sponsored research (sponsored by DST, AICTE, ARDB, etc.), and product development.

ABOUT GEC, BHARATPUR

Government Engineering College Bharatpur (GECB) is an autonomous institute under Bharatpur Society, Rajasthan, India. GECB was established in the year 2007. The college has six departments, namely, Mechanical Engineering, Civil Engineering, Electronics and Communication Engineering, Electrical Engineering, Computer Science and Information Technology, and Applied Science and Humanities. The college offers B.Tech. programmes in Civil, Mechanical, Electrical, Electrical & Electronics, and Computer Science & Engineering. For details, visit the website **http://www.ecbharatpur.ac.in.** GECB is 9 KM away from Bharatpur railway station and is on the Agra-Jaipur route. A nearby attraction is a bird sanctuary, namely, Keoladeo National Park or Keoladeo Ghana National Park formerly known as the Bharatpur Bird Sanctuary.

ABOUT TEQIP – III

Technical Education Quality Improvement Programme (TEQIP) was launched in December, 2002 by the Ministry of Human Resource Development, India with the World Bank assistance. The programme was conceived and designed as a long term project to be implemented in 10 - 12 years in 3 phases to support excellence and transformation in technical education in the country. The third phase of the programme, TEQIP – III was started in the year 2017 and will be ending in 2020. The main objective of TEQIP – III is to improve the quality of engineering education in the existing government institutions in the educationally backward states and also arrange for twinning them with other institutions like NITs and a few affiliating technical universities.

ABOUT CALICUT

Calicut is a major knowledge hub of Kerala and is the home town of institutions of national importance including NITC, IIMK, NIELIT, CWRDM, IISR, KSoM, etc. Calicut is connected by direct rail/road/air to all major cities in India. NITC is located about 22 kilometers north-east of Calicut City. Calicut, also known as Kozhikode, is designated as the city of spices. Kozhikode beach, Kappad beach where Vasco De Gama landed first, Kadalundy bird sanctuary and Tusharagiri waterfalls are the important places for tourist attraction.

COORDINATORS

COORDINATOR
Dr. V. Madhusudanan Pillai
Department of Mechanical Engineering
National Institute of Technology Calicut
NIT Campus P.O. - 673601, Calicut
Mobile: 9895367804
Office phone: 0495 2286410
Email: majps18@nitc.ac.in

CO-COORDINATOR
Er. Rahul Srivastava
Department of Mechanical Engineering
Govt. Engineering College Bharathpur
Bharatpur, Rajasthan - 321303
Mobile: 9929460850
Email: er.me.rahul@gmail.com

CONTACT for assistance or queries

For any assistance or queries, please contact
Dony S Kurian +91 99957 51237/97471 03239 (M)
Email for contact: **majps18@nitc.ac.in**

REGISTRATION FORM

Scan the QR Code for online registration and upload the signed endorsement form. Last date for registration is **08 June 2018**.

Endorsement of the Head of the Institution/Department

Certified that Mr./ Ms./ Dr. ..... is an employee of this institution and is hereby sponsored for the FDP on **MODELING AND ANALYSIS OF JUST-IN-TIME PRODUCTION SYSTEMS (MAJPS 18)** at NIT Calicut during June 18-23, 2018. He/she will be permitted to attend the course, if selected.

Place:
Date:

Name & Signature of the Sponsoring Authority
(seal of the institution)