

## ABOUT THE INSTITUTE

SRM IST is one of the top ranking Universities and most premier engineering destinations in India. It was established in 2002 by the Founder Chancellor Dr. T.R. Paarivendhar. SRM IST is functioning in four campuses located at Kattankulathur, Vadapalani and Ramapuram in Tamilnadu and a fourth campus at Modi Nagar, Ghaziabad with over 50,000 students and 3,200 faculty members. SRM IST offers a wide range of undergraduate, postgraduate and doctoral programs in Engineering, Management, Medical & Health Sciences, Law, Science & Humanities and Agricultural Science.

The Institution has grown up through international alliances and collaborative initiatives to achieve global excellence. Over 150 students per annum are sponsored for 35 foreign Universities like MIT, Carnegie Mellon, UC Davis, Warwick and Western Australia. Now the Institute enjoys an unsurpassed reputation in academic and corporate circles and remains a preferred source of human resource, thus fulfilling its vision to be a world - class learning institution. SRM IST has been placed as category A University by Ministry of Human Resource Development (MHRD); Government of India. SRM IST is accredited by NAAC with A++ Grade in the year 2018, and has been classified as category I university.

## ABOUT THE DEPARTMENT

The Department of Mechanical Engineering is one of the pioneering departments of SRMIST. The present faculty strength is 137. About 500 research papers have been published in international journals and about 700 papers in international / national conferences. The department is functionally divided into three areas of specialization: (i) Design, (ii) Manufacturing and (iii) Thermal Engineering. The National Board of Accreditation had accredited the Mechanical Engineering program in 1997, itself. The Mechanical Engineering department at Kattankulathur campus is accredited by Engineering Accreditation Commission of ABET, USA ([www.abet.org](http://www.abet.org)). The department also offers Doctoral programs in these three areas of specializations.

The following salient workshops and conferences conducted by Mechanical Department were 10th Asian symposium of visualization, 2010. National Workshop on fuel cell technology, 2008, International Conference on

Advances in Mechanical Engineering 2006, Short Course on Mechanics of Composite Materials and Structures: 2015, Workshop on Development, Manufacturing and Analysis of Advanced Composites, 2015 and short course on FEM, 2015, National Conference on Advances in Mechanical Engineering (NCAME 2016), Brain Wave Robotics, 2017, International Conference on Advances in Mechanical Engineering (ICAME 2018).

Various Research facilities available in the department are 51/2 axis CNC Machine, IRB 1410 robot, IRB 360 FlexPicker Vision ABB robot, wear and friction monitor Apparatus, thyristor controlled 64 - segment program electric furnaces, 7 Mill volt He - Ne with spatial filter, vision systems, computerized surface roughness tester, Fazo portable CMM, Carl Zeiss size CMM, six axes spine simulator, computerized IC engine test Rig, gas analyzer, Kistler Impact hammer, RPT, solar steam cooking plant and FMS systems, DSC, CFD, Stir Casting, Friction Welding, Composite Equipments.

## ABOUT THE FDP

The course is aimed to educate the participants about the fundamentals of various optimization techniques and at the same time extends to expose them to the recent advancement in this area. The main components of this new field are: Taguchi Grey Relational Approach, Taguchi technique with fuzzy, Particle Swarm Optimization, TLBO Algorithm, Harmony Search Algorithm, ABC Algorithm, Genetic Algorithm, etc.

In addition, process optimization by statistical experimental design aspects will also be covered with application to Chemical, Civil, Mechanical, Electrical, Electronics, computer science, IT and Biotechnology Engineering related problems involving parameter identification, optimal control and structural optimization. Owing to the inter-disciplinary nature of this course, participants across the disciplines will be able to attend, appreciate and augment their knowledge to keep up with the emerging advanced techniques.

The course will help mentors to further deliver its contents to the students and will endow budding researches with state of art tools to improvise their research. The three days FDP aims to introduce the participants to these optimization techniques and provide them with hands-on

experience, enabling them to apply the techniques in their respective fields. This FDP will bring together faculty members from different engineering and industrial fields to establish new collaborations and research to explore both sides of challenges and opportunities in the respective fields.

The program has been developed with unique approaches to convey information more effectively and enable the visualization and application of optimization process and techniques.

## COURSE CONTENTS

The FDP will cover the different aspects of recent trends in optimization, which include

- **BASICS OF DESIGN OF EXPERIMENTS**
- **INTRODUCTION TO OPTIMIZATION**
- **TAGUCHI-GREY RELATIONAL APPROACH**
- **TAGUCHI FUZZY LOGIC**
- **PARTICLE SWARM OPTIMIZATION**
- **TEACHING LEARNING BASED OPTIMIZATION ALGORITHM (TLBO)**
- **HARMONY SEARCH ALGORITHM**
- **ABC ALGORITHM**
- **GENETIC ALGORITHM**
- **HANDS ON TRAINING USING SOFTWARE**

## OBJECTIVE OF THE FDP

The three day FDP on “Recent Trends in Optimization” is organized by the Department with the following objectives:

- To bring together people (students / researchers / industries) from across India, who are working on optimization techniques for a better interaction.
- To impart basic knowledge about the various active research in recent trends in optimization.
- To expose the participants to the current scenario in optimization techniques.

**Filled in Registration form should be sent to the following address/e-mail id, on or before DEC 4<sup>th</sup> 2018. Intimation of selection will be made through e-mail only.**

**THREE DAYS FDP ON  
RECENT TRENDS IN OPTIMIZATION (RTIO)**

December 6<sup>th</sup> - 8<sup>th</sup> 2018

**REGISTRATION FORM**

Name: Mr/Ms/Mrs/Dr: \_\_\_\_\_

Academic Qualification: \_\_\_\_\_

Designation: \_\_\_\_\_

Organization: \_\_\_\_\_

Institution Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Mobile: \_\_\_\_\_

E - Mail: \_\_\_\_\_

**Registration Fee Details:**

D.D. No.: \_\_\_\_\_

Bank Name: \_\_\_\_\_

Accommodation Requirement: YES / NO

Date: \_\_\_\_\_ Signature \_\_\_\_\_

The above information along with D.D may be sent to the coordinators on or before 4<sup>th</sup> **December, 2018**

**RESOURCE PERSONS / SPEAKERS**

The resource persons for this course are from reputed institutes having rich experience in optimization techniques.

**Dr. M. SIVAKUMAR**

Principal, Sree Sowdambika College of Engineering, Aruppukottai

**Dr. A K JEEVANANTHAM,**

Professor, VIT Vellore

**Dr. SOLAI. AYYAPPAN**

Assistant Professor, GCE Salem

**Dr. R. PARAMESHWARAN**

Professor and HOD, Kongu Engineering College, Perundurai

**REGISTRATION FEE DETAILS**

Students / Research Scholars: Rs. 1000

Faculty from Academia: Rs. 1500

R&D / Industry: Rs. 3000

**FOR REGISTRATION**

<http://bit.do/RTIO>

Email id: [fdprtio2018@gmail.com](mailto:fdprtio2018@gmail.com)

DD in favour of "Mechanical Engineering Association"

**CONTACT**

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**SRM**  
INSTITUTE OF SCIENCE & TECHNOLOGY  
(Deemed to be University u/s 3 of UGC Act, 1956)

**THREE DAYS FDP ON**

**RECENT TRENDS IN  
OPTIMIZATION  
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December 6<sup>th</sup> - 8<sup>th</sup> 2018

Organized by

**MECHANICAL ENGINEERING ASSOCIATION**

Convener

**Dr. S. PRABHU**

Professor and Head  
Department of Mechanical Engineering

Co-Ordinators

**Mr. S. OLIVER NESA RAJ**

Assistant Professor

**Mr. T. GEETHAPRIYAN**

Assistant Professor

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