About the Institute:

Vishwakarma Government Engineering College (VGEC) Ahmedabad, was established in August 1994, with an objective of imparting higher education in various fields of engineering and technology. This institute is recognized by All India Council of Technical Education (AICTE), New Delhi. The college is administrated by Directorate of Technical Education, Gujarat State, Gandhinagar and is affiliated with Gujarat Technological University. VGEC shifted to its own campus at Chandkheda, Ahmedabad in the year 2004.

This Institute is located in Chandkheda which is highly developing area. The Institute campus is situated adjacent to Oil and Natural Gas Corporation, Chandkheda. Presently the institute is running 09 under graduate and 02 postgraduate courses of engineering. This Institute is considered among few best Engineering Institutes of the state. More than 700 Engineers are passing out every year from this Institute.

About Multi-Objective Optimization:

Optimization is the process of finding the best. Continuous improvement is an important feature and need for all engineering development, application and processes. Improvement of efficiency in manufacturing and engineering activities is a result of optimization of design and operations. In particular for the efficiency, a scope still exists for optimizing the current operations with the ever changing economic, energy and environmental landscape. Most engineering optimization problems are complex in nature, multi-objective and needs robust optimization methods/algorithms.

Multi-objective optimization (MOO) is a class of optimization that deals with multiple conflicting objectives. Some examples of the sets of conflicting objectives are: capital cost and operating cost, cost and features, selectivity and yield in multiple reactions, profit and environmental impact, and profit and safety cost. MOO problems with conflicting objectives will have a set of solutions (representing trade-offs among the objectives), which are called pareto optimal solutions, of which none can be said to be better than the others with respect to all the objectives.

Formal presentation of optimization problem in mathematical form is the first step for Optimization; problem formulation. Solution of optimization problem is a field of applied mathematics that deals with finding the best solutions in a domain of definition, subject to various constraints on the variable values. Analytical, Numerical and Heuristics based methods are the major classes having their strengths and limitations, which will be discussed in details along with recent developments in the area of MOO. The course also focuses on hands-on sessions to practice solution of MOO design problems.

Course Content:

- Introduction to multi-objective optimization (MOO)
- Evolutionary optimization techniques
- Performance Measures for MOO
- Non-dominated sorting
- Rank based sorting
- Evolutionary MOO algorithms
- Decomposition based algorithms
- Constrain Handling in MOO
- MOO Design Applications
- Optimal Control Applications
- Recent Developments in MOO

Objectives:

The STTP on “Multi-Objective Optimization: Theory and Applications” is organized with a view to acquaint the faculty and research scholars with this growing area of optimization. It is aimed to give exposure of MOO techniques and applications along with hands on sessions for formulation and solutions of MOO design problems. It is also aimed to provide information on some advanced MOO algorithms along with a few case studies. Computer laboratory training and demonstrations will be given to the participants to gain experience in this area. The course will be divided into theory, practical sessions and demonstrations. Though the goal is exposure to advances in MOO techniques and applications, care is taken in designing the content for participants with little or no exposure of the optimization.

Recourse Persons: Expert Faculty will be from reputed academic institutions like IITGN, VGEC, PDPU, SVNIT, DAIICT, Nirma Uni., Gujarat Uni. and practicing professionals.

Eligibility for Participation: Faculty from Engineering Colleges/Polytechnics, PG and PhD Research Scholars and persons from industry / R & D Organizations / Consultants.

Lodging, Boarding and Travel: Course fee includes working lunch, tea, kit and course material. Participants will have to bare their travel and accommodation expanses at their own. Participants from Institutes under Commissionerate of Technical Education, Government of Gujarat are eligible to draw TA/DA under TED-7 from their parent institute. (Subject to Approval from CTE)

Course Fee:

Course Fees of Rs. 500/- (non-refundable) is to be paid by all the participants including faculty of Degree/Diploma Engineering Institutes. Participant must become a member of ISTE at the time of registration, if not.

Link for Registration: https://tinyurl.com/y8khyjam

No. of Seats: **40**

Venue: Vishwakarma Government Engineering College, Chandkheda

Application Form:

Interested candidates have to submit filled application form duly signed by sponsoring authority at the time of registration. However, participants must have to apply on the above link:

Dr. N. M. Patel / Dr. A R Patel
Course Coordinator, STTP MOO:T&A - 2019
Vishwakarma Government Engineering College,
Visat-Gandhinagar Highway,
Chandkheda, Ahmedabad-382 424.

Coordinators: (M) 9426024961 (Prof. N M Patel)
(M) 9427308425 (Prof A R. Patel)
E-mail: prof.nmpatel@gmail.com hod_general@vgecg.ac.in

ISTE-GTU Sponsored

One Week Short Term Training Program

on

Multi-Objective Optimization: Theory and Applications

(MOO:T&A - 2019)

[February, 11th – 16th, 2019]

Dr. N. M. Patel
Course Coordinator
Associate Professor
Chemical Engineering Department

Dr. A. R. Patel
Course Coordinator
Associate Professor and Head
General Department

Dr. R. K. Gajjar
Principal
Patron

Organized by

Vishwakarma Government Engineering College,
Chandkheda, Ahmedabad – 382 424.
GUJARAT

ISTE-GTU Sponsored One Week STTP on

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(MOO:T&A - 2019)

[February, 11th – 16th, 2019]

Registration Form

Name: _____

Designation: _____

Name & Address of the
Institute / Organization: _____

_____

ISTE Membership No:_____(Submit proof)
Educational Qualification: _____

Experience : Academic: _____
Industrial: _____

Address for Communication: _____

_____

Phone No. (O): _____(R): _____

E-mail: _____

Date: Signature of the Applicant.
Place:

Certificate

This is to certify that Mr./Ms./ Mrs._____ is working as _____ in _____ department of this Institute. He / She will be permitted to attend this STTP, if selected.

Seal & Signature of Sponsoring Authority

Note: *Photocopy this form if required.*

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