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ABOUT US

Veer Surendra Sai University of Technology (VSSUT), Odisha (formerly known as University College of Engineering (UCE), Burla) was formed by Odisha Act 9 of 2009 by upgrading to a Unitary State University, which came into force from 1st day of July 2009. VSSUT is located at the foothill of famous Hirakud Dam – longest in Asia. Burla is known as Intellectual Capital of Odisha with VSSUT, VSS Institute of Medical Science and Research, Sambalpur University, MCL, WESCO and IIM Sambalpur. It is located 12 KM away from Sambalpur railway station and 3 KM away from Hirakud railway station. VSSUT, Burla has carved a niche for itself among the best technical institutes in India and is a dream institute for many budding engineers. The University offers B. Tech, M.Tech, Dual Degree, M. Sc, Int. M. Sc., MCA and Ph. Ds. The university is surrounded by a large number of Government, public and private industrial sectors such as OHPC, HINDALCO, NALCO, NTPC, OPTCL, Vedanta Aluminium Ltd. and Bhusan Steel Plant. The institute has an excellent placement record with a number of top ranking companies visiting the campus every year.

The Production Engineering department was started in the year 1996 and presently is richheritage of academic excellence, innovativecurriculum, effective classroom teaching,application oriented practices, well equippedlaboratories and updated workshops, excellentplacement record, industry institute interaction andtop of the line faculty members with outstandingresearch abilities. Now, the department runs B. Tech, M. Tech. (Manufacturing Systems Engineering and Robotics and CAD/CAM) and Ph.D.

AICTE Training and Learning (ATAL) Academy sponsored

**5 Days Online
Faculty Development Program (FDP)
on**

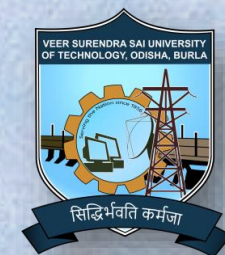## Data Driven Approaches in Manufacturing Sciences

during

16th – 20th November 2020

Coordinator
Dr. Debadutta Mishra, Professor

Co-Coordinators
Dr. T. R Mahapatra, Associate Professor
Lt. Birendra K Barik, Assistant Professor

Organized by

**Department of Production Engineering
Veer Surendra Sai University of Technology
Burla, Odisha, 768018, India.
www.vssut.ac.in**

ABOUT ATAL ACADEMY

All India Council for Technical Education (AICTE) through its newly established AICTE Training And Learning (ATAL) Academy have started unique faculty development programs in various thrust areas of modern technology. 200 such programs have already been conducted in various government institutions benefitting around 10,000 faculties, research scholars & PG students during the FY 19-20.

OBJECTIVE

Within manufacturing industries, many factors such as machine condition, process parameters. Environmental characteristics and material quality contribute significantly towards the overall performance of a process; and hence the end product. Experimentation is a frequent activity of PG students, research scholars as well as the faculties not only of production/ manufacturing engineering but of every branch of engineering as well and they usually use primitive strategies to carry on their experiments. Analyzing the data by implementing appropriate technique is very much essential to determine the relationship between factors affecting a process and the output of that process. Further, finding the best optimal parameter combination can lead towards improvement of the overall process efficiency. The performance of the process can be improved by precisely analyzing the data and applying optimization techniques with respect to its process control parameters.

The FDP on Data Science and its application is aimed at imparting Knowledge and Training on the Fundamentals of Interdisciplinary field of Data Science with its different aspects and applications. It is a Multi-Disciplinary field that uses Scientific Methods, Processes, Algorithms and Systems to extract Knowledge and Insights from Structured and Unstructured data. The main objective is to make the participants familiar with emerging field of Data Science along with the preparation of data for extracting valuable insights from vast amount of Heterogeneous Data.

COURSE CONTENT

The faculty development program (FDP) will cover but is not limited to following topics:
- Concept of Data Sciences, Probability Theory, Statistics (Hypothesis and Inference) and its application
- Design of experiments (DoE), Analysis of Variance (ANOVA), Regression using MINITAB
- Teaching-learning-based optimization (TLBO) applied to manufacturing processes
- Multi-objective optimization using Utility and TOPSIS
- Analytic Hierarchy Process (AHP)
- Python for data science
- Machine learning and metrics for data analysis/predictive analysis
- Artificial Neural Network (ANN)
- Principal Component Analysis (PCA)

Each course will be demonstrated via Case study through lab-based computer sessions and hand on practice by solving real life engineering problems pertaining to Manufacturing and/or Production engineering. Participants should attend preferably with help of Desktop/Laptop with Internet Connectivity, as there is Case study through lab-based computer sessions and hand on practice

EVENT DETAILS

The events of the online seminar include:
- ❖ Inaugural Ceremony
- ❖ 14 Technical sessions @ 2 hours/session
- ❖ Q & A with experts
- ❖ Quiz Test and Valedictory Ceremony
- ✓ All the sessions will be conducted **ONLINE** in Googlemeet platform.
- ✓ An online test will be conducted by the coordinator at the end of the program.
- ✓ E-certificates shall be issued by the ATAL Academy to participants who have attended the program with minimum 80% attendance and scored minimum 60% marks in the test.

RESOURCE PERSONS

Academicians from premier institution like IITs, NITs, IISc, Universities, and experts from Industries as well as R&D Organizations having expertise in engineering domain are invited as Resource Person for this program.

IMPORTANT GUIDELINES

- Faculty members of the AICTE approved institutions, Research scholars, PG Scholars, participants from Government, Industry (Bureaucrats/ Technicians Participants from Industry etc.) and staff of host institutions are eligible to apply for the FDP.
- Not more than 30% Faculties/research/PG scholar should be from Host Institution.
- There is no registration fee for the participants.
- Interested participants from industry, academic and research community are required to register compulsorily in the following link:
- https://www.aicte-india.org/atal   Or https://atalacademy.aicte-india.org/signup
- Seats are limited (maximum 200) and the participants are selected by organizers on first come first serve basis.
- Last date of registration: 4th November 2020

CONTACT DETAILS

For any queries regarding this programme, please contact:
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