SAPTHAGIRI COLLEGE OF ENGINEERING

(Affiliated to VTU, Belagavi & Approved by AICTE, New Delhi)
Accredited by NAAC with "A" Grade
#14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560 057.

DEPARTMENT OF MECHANICAL ENGINEERING

INNOVATIVE TEACHING LEARNING METHODS

Turbo machines (5th SEM MECH)

DME-I (5th SEM)

Camera Stand-Computer Aided Machine Drawing (3rd SEM)

Engineering Management & Economics (5th SEM)

Basic Thermodynamics (3rd SEM)

Use of Charts in Teaching Learning

Machine Shop (3rd SEM)

COMPUTER INTEGRATED MANUFACTURING LAB

DEMONSTRATION OF SOFTWARE

COMPUTER INTEGRATED MANUFACTURING LAB

Computer Aided Engineering Drawing

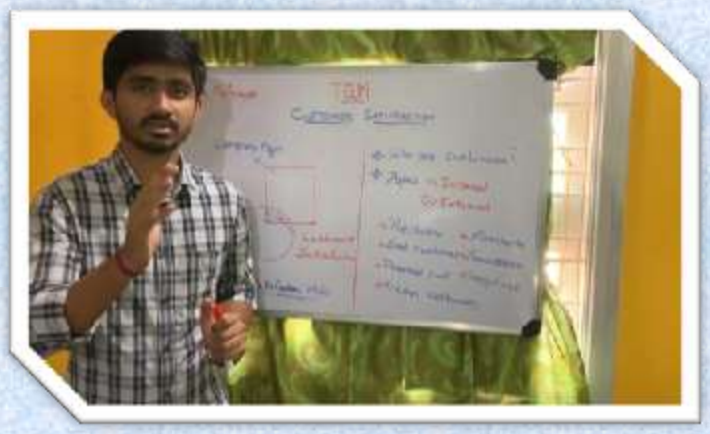
Use of PPT and Videos in class

Elements of Mechanical Engineering

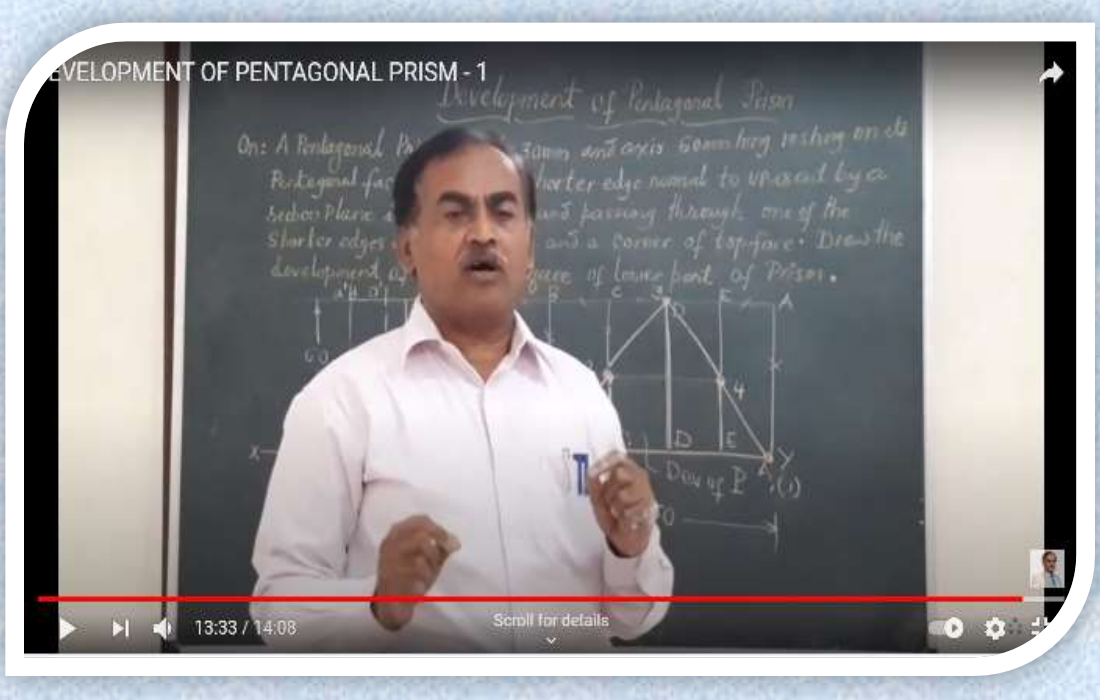
Use of Chart in Class

Elements of Mechanical Engineering

Lecture Videos Published by faculty in Teaching Learning



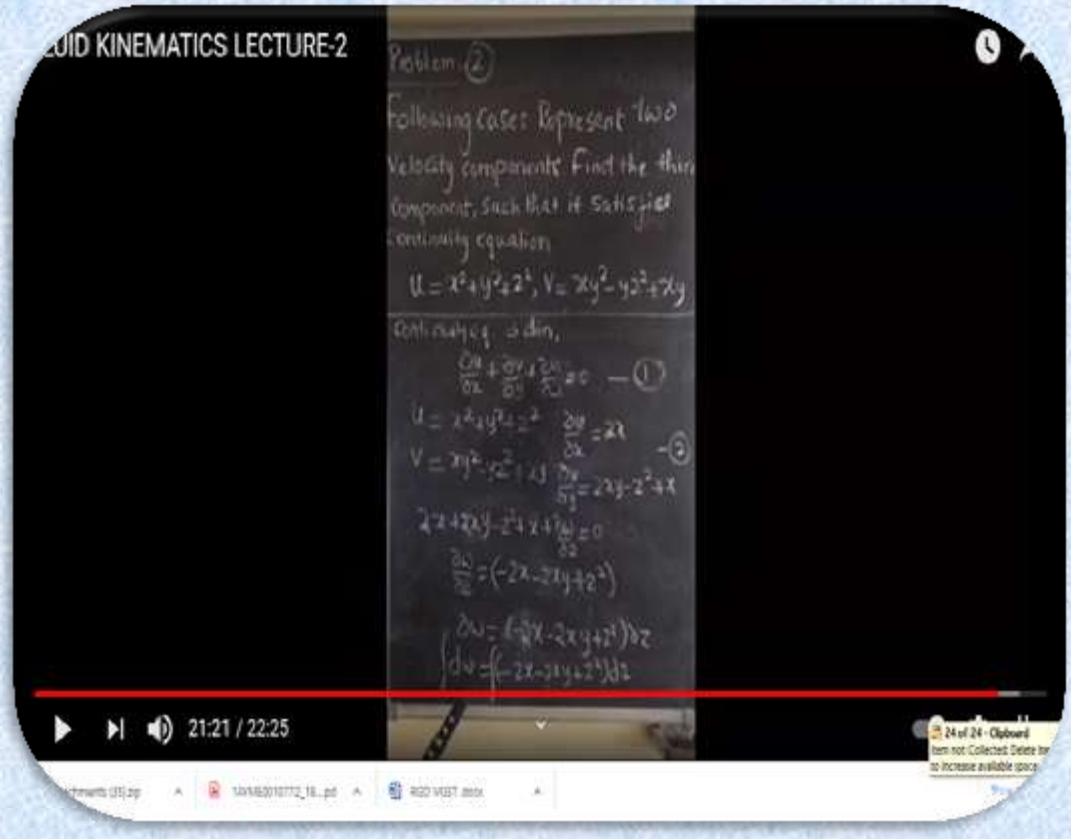
Total Quality Management
(https://youtu.be/vIKaqOfbwGw)



Engineering Graphics
(https://www.youtube.com/watch?v=8gYcFJ_Kj-4)

Mechanics of Materials-VTU – E – Learning
(https://www.youtube.com/watch?v=t6Fc7GPWw-I)

Design of Machine Elements- I
(https://www.youtube.com/watch?v=7h6EpMibnHI)



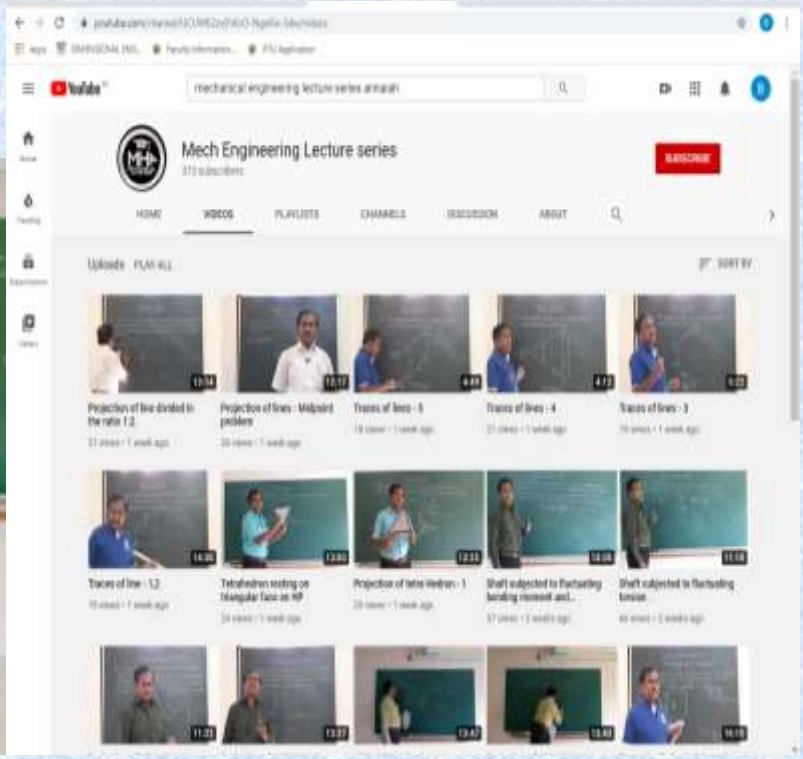
Fluid Mechanics
(https://www.youtube.com/watch?v=SFl8kVTfjRQ&t=63s&pbjreload=101)

Use of Models

Engineering Graphics

AUTOMOBILE PARTS USED AS MODELS

LIVE CAMERA CLASS FOR DRAWING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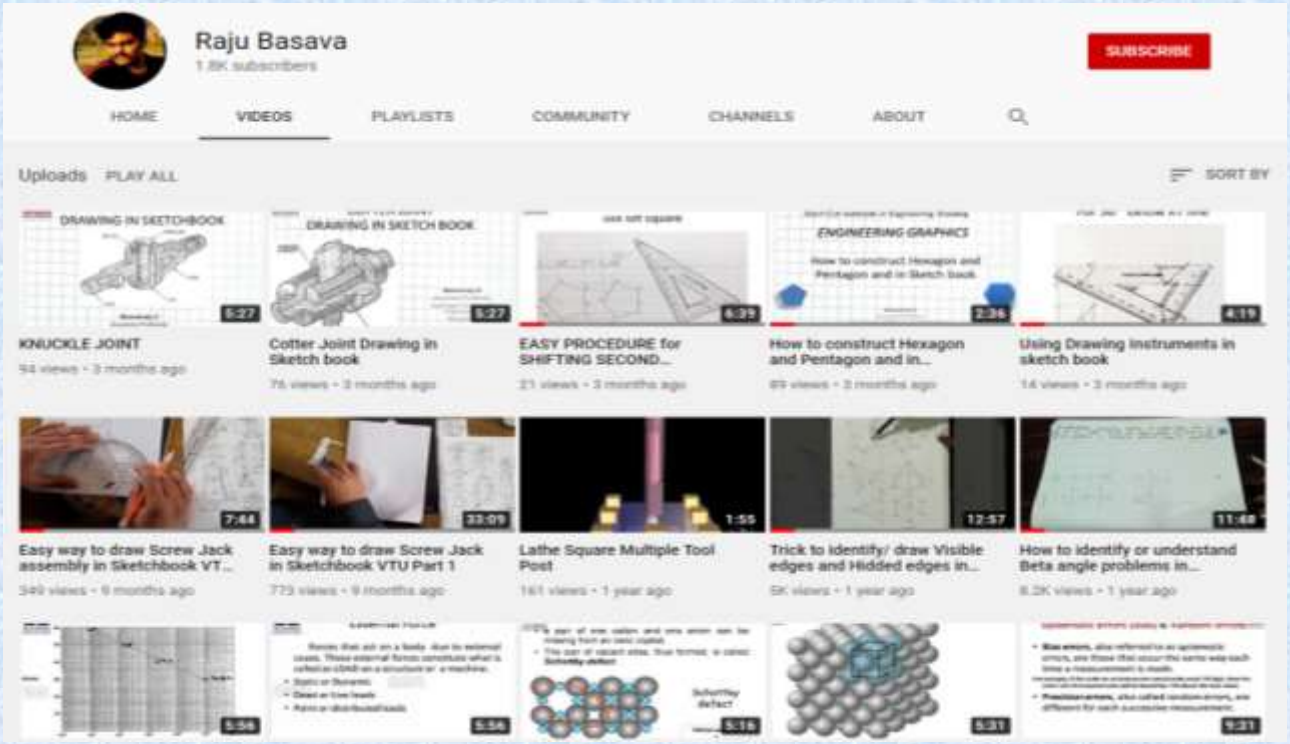
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DRAWING IN SKETCHBOOK
5:27
KNUCKLE JOINT
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Cotter Joint Drawing in Sketch book
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EASY PROCEDURE for SHIFTING SECOND...
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ENGINEERING GRAPHICS
How to construct Hexagon and Pentagon and in Sketch book
2:36
How to construct Hexagon and Pentagon and in...
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Using Drawing Instruments in sketch book
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Easy way to draw Screw Jack assembly in Sketchbook VT...
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Easy way to draw Screw Jack in Sketchbook VTU Part 1
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Lathe Square Multiple Tool Post
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Trick to identify/ draw Visible edges and Hidded edges in...
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How to identify or understand Beta angle problems in...
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5:56
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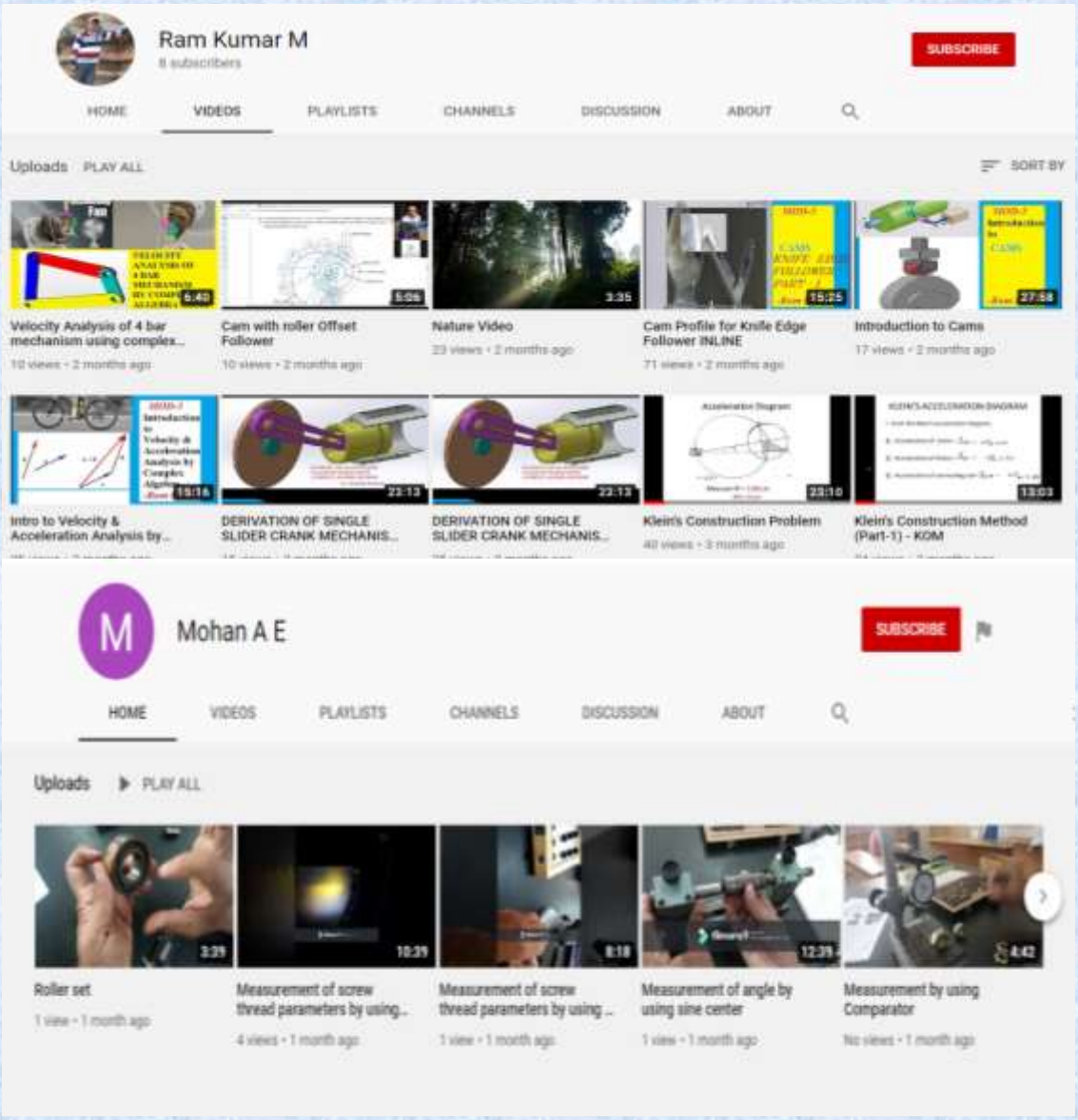
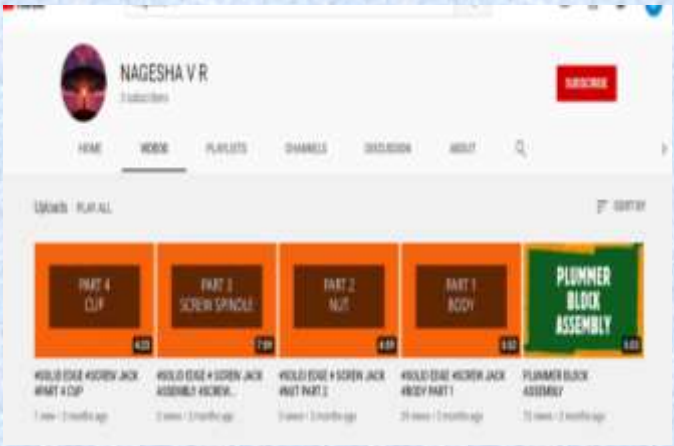
5:31
9:21



VIDEOS PREPARED BY STUDENTS



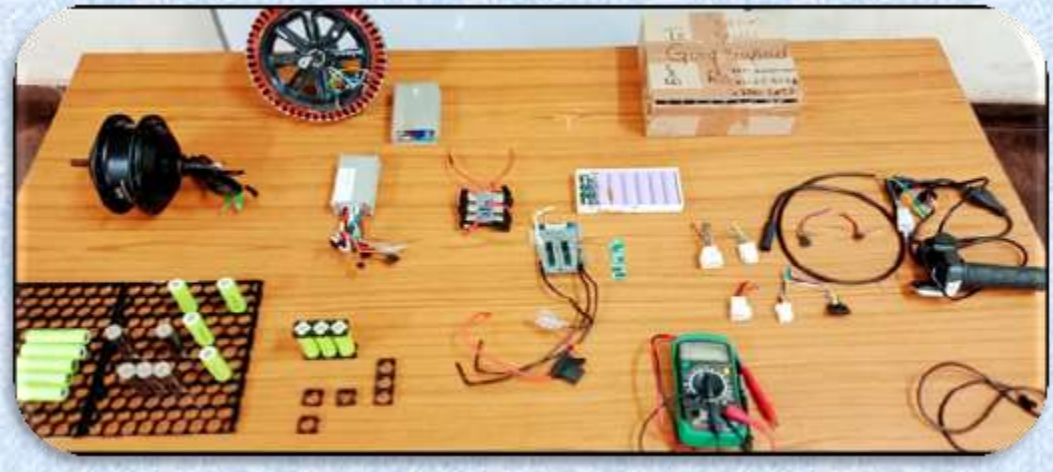
Youtube Video on Screw Jack Assembly Drawing by Nagesha.V.R. 4th Sem B.

Online Clutch engaegement of an Automobile explanation by Mr.Chethan.4th A. by Student *MAC* Club.

Engine working demo for first year students

Demo Models

INDUSTRY ESTABLISHED LAB – GRADPRO



PROJECTS

Workshop on IC Engine

Workshop on 3D printing

Peer-teaching learning

GO KART

ACE DESIGNERS INDUSTRIAL VISIT

STUDENT CENTRIC METHODS

Methods	Experienced Learning	Participative Learning	Problem Solving
Final Year Projects	✓	✓	✓
Mini Projects	✓	✓	✓
Internship	✓	✓	✓
Seminars	✓	✓	✓
Industrial Visits	✓	✓	
Guest Lectures		✓	
Peer Teaching	✓	✓	✓
Peer Learning	✓	✓	✓
Handmade models/charts	✓	✓	
Case Studies	✓	✓	✓
Quiz	✓	✓	
Puzzles	✓	✓	✓
Student Seminar in class	✓	✓	
Paper presentation/ Publications	✓	✓	✓

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DEPARTMENT OF MECHANICAL ENGINEERING

LINKS FOR VIDEOS ONLINE

Subject	Name	Title	Link
Mechanics of Materials	Dr.R.G.Deshpande	VTU e-Shikshana Programme Mechanics of Materials. 18ME32	https://www.youtube.com/watch?v=wrNCHn5O8p8
		Module 4 Lecture 4	https://www.youtube.com/watch?v=t6Fc7GPWw-I
		Module 4 Lecture 2	https://www.youtube.com/watch?v=AAXxRnWMV1c
Engineering Graphics	Dr.M.H.Annaiah	Projection of plane surfaces (laminae)	https://www.youtube.com/watch?v=l_EfUwGio1w
Engineering Graphics		Engineering Graphics - Engineering drawing	https://www.youtube.com/watch?v=0hadHMqe6V8
Engineering Graphics		Projection of pyramids	https://www.youtube.com/watch?v=odP14BQlp8g
Engineering Graphics		Projection of triangular pyramid - 1	https://www.youtube.com/watch?v=WzDzI66tXFg
Engineering Graphics		Projection of RECTANGULAR PYRAMID resting on triangular face on HP	https://www.youtube.com/watch?v=YGVfT0sdrZY
Engineering Graphics	Dr.Basavaraju.S	How to identify or understand Beta angle problems in Engineering Graphics	https://www.youtube.com/watch?v=OmFkMJQWB38&list=PLQx_u-sjffTK8iFXpkcCzzuIe_eZz-HKS
Engineering Graphics		Trick to identify/ draw Visible edges and	https://www.youtube.com/watch?v=H7cbTIHDy68&list=PLQx_u-

		Hidded edges in Projections of Solids	sjffTK8iFXpkcCzzuIe_eZz-HKS&index=2
Engineering Graphics		Using Drawing Instruments in sketch book	https://www.youtube.com/watch?v=VWWz2jaiALE&list=PLQx_u-sjffTK8iFXpkcCzzuIe_eZz-HKS&index=3
Engineering Graphics		How to construct Hexagon and Pentagon and in sketchbook	https://www.youtube.com/watch?v=vKE1P4Rn6UM&list=PLQx_u-sjffTK8iFXpkcCzzuIe_eZz-HKS&index=4
Engineering Graphics		Easy Procedure For Shifting Second Position To Third Position In Engineering Graphics	https://www.youtube.com/watch?v=sJQidMWraE8&list=PLQx_u-sjffTK8iFXpkcCzzuIe_eZz-HKS&index=5
Engineering Graphics	Dr.Basavaraju.S	Easy way to draw Screw Jack in Sketchbook VTU Part 1	https://www.youtube.com/watch?v=L0mi7A-trhM&list=PLQx_u-sjffTLghqB5hjSiFyLTkC7A1cWz&index=5
Computer Aided Machine Drawing		Easy way to draw Screw Jack assembly in Sketchbook VTU Part 2	https://www.youtube.com/watch?v=jFdHTLUOVmk&list=PLQx_u-sjffTLghqB5hjSiFyLTkC7A1cWz&index=6
Fluid Mechanics	Dr.Raghavendra Deshpande	Fluid Kinematics	https://www.youtube.com/watch?v=SFl8kVTfjRQ&t=8s
Engineering Graphics	Prof.RamKumar	Projection of Solids	https://www.youtube.com/watch?v=ZnHC4G2e9Yo&feature=youtu.be
Kinematics of Machines		Klein's Construction Method (Part-1) - KOM	https://www.youtube.com/watch?v=QRLw61gQ8Bg&feature=youtu.be
		Klein's Construction Problem	https://www.youtube.com/watch?v=6dbeFITkXq4&feature=youtu.be
Total Quality Management	Prof.Satish.Y.D	Customer Satisfaction Introduction	https://www.youtube.com/watch?v=vIKaqOfbwGw&feature=youtu.be
		Customer Perception of Quality	https://www.youtube.com/watch?v=1mzp9Ql-QPA&feature=youtu.be

Vision and Mission of the Department

Vision of the Department:

To create **academically excellent** and **globally competent mechanical professionals** to serve the needs of society.

Mission of the Department:

1:To instill **strong foundation in mechanical domain** through learner-centric teaching methodology and to facilitate for higher education and research.

2:To provide opportunity and resources for **developing skills for employability, leadership & entrepreneurship** to meet the social needs.

3:To nurture **industry-academia interface** for innovative **knowledge sharing** in interaction with industry & alumni.

Program Educational Objectives (PEOs).

The expected achievements of ME graduates after 3-4 years of graduation are

PEO 01	**Apply the principles of Mathematics, Science and Engineering to lead successful career in Mechanical and interdisciplinary fields.**
PEO 02	Solve realistic problems in the allied areas of Mechanical Engineering such as Design, Thermal, Material Science and Manufacturing by addressing industry and social needs.
PEO 03	Demonstrate leadership skills with team spirit, effective communication, ethical values and environmental concern in multiple domains of engineering.
PEO 04	Engage in life-long learning through professional practice, higher studies and research in the field of Mechanical Engineering.

PROGRAM OUTCOMES (POs)

Engineering Graduates at the time of completion of degree will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs):

These outcomes are specific to ME at SCE should be able to attain the following at the time of graduation.

	PROGRAM SPECIFIC OUTCOMES
PSO1	Expertise in specialized areas of Mechanical Engineering such as Design, Thermal, Materials and Manufacturing with a focus on research and innovation.
PSO2	Apply analytical, numerical and experimental skills with awareness of societal impact for solving Mechanical Engineering problems.
PSO3	Apply modern tools and managerial skills to develop product in Mechanical and allied Engineering fields.