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2.6.1. Teachers and students are aware of the stated Programme and Course Outcomes of the Programmes offered by the institution

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Display of Vision, Mission POs, PSOs at Civil Engineering Department

Display of Vision, Mission POs, PSOs at Mechanical Engineering Department

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Display of Vision, Mission POs, PSOs at Head of Department (Civil & ECE) Office and Principal Office

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Display of Vision, Mission POs, PSOs at Workshop, Student Activity Center & Survey Lab

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Display of Vision, Mission POs, PSOs at Canteen MJCET

Display of Vision, Mission POs, PSOs on MJCET Website

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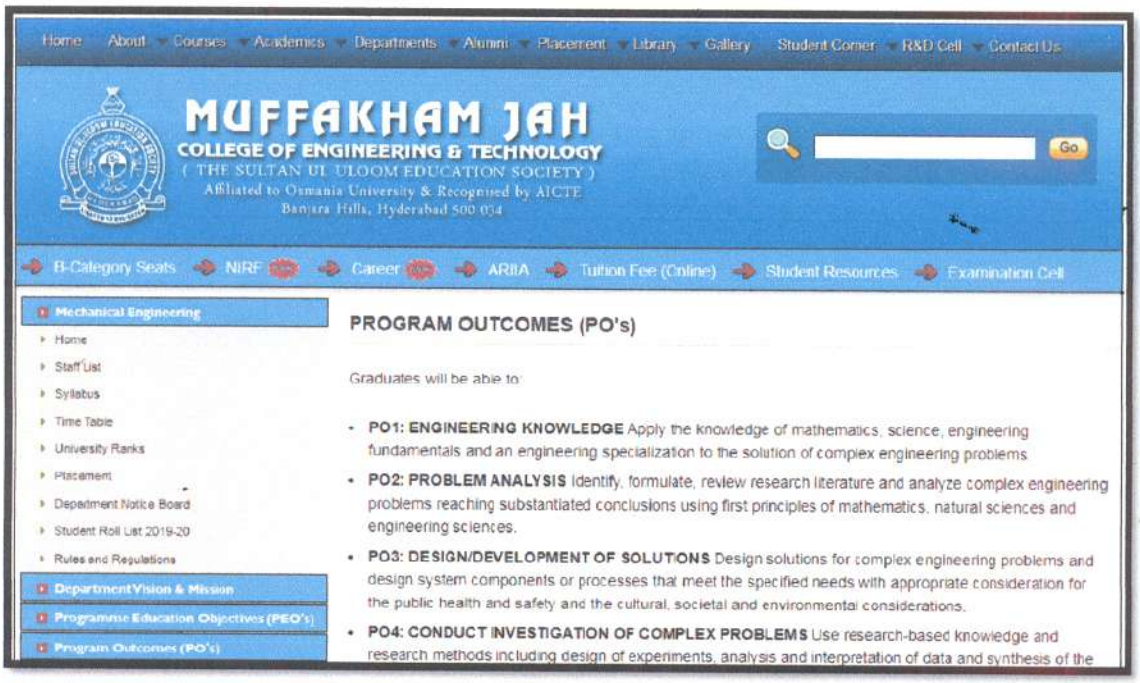

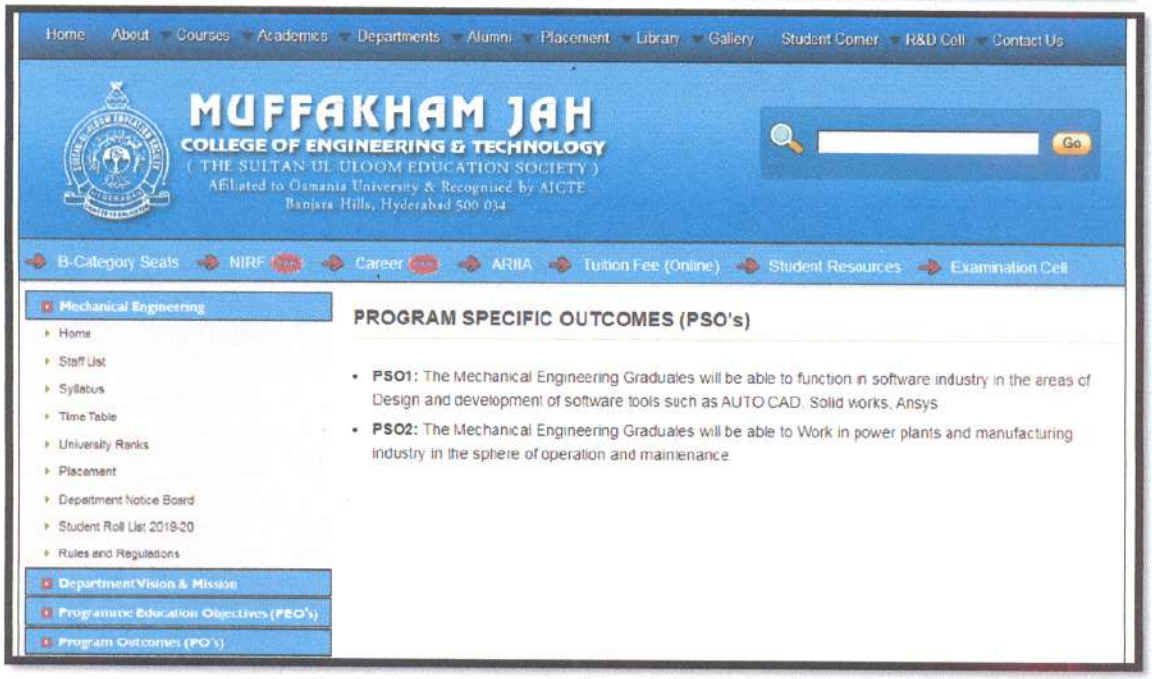

Display of Vision, Mission POs, PSOs on MJCET Website

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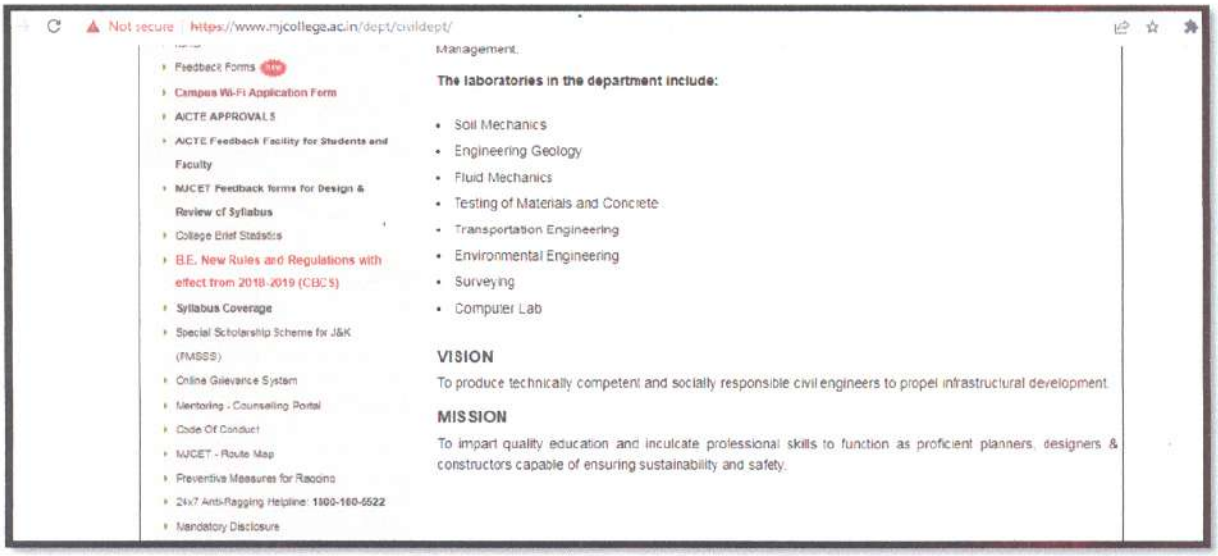

Display of Vision, Mission POs, PSOs on MJCET Website

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Sample COs of Various Subjects

Sample COs of B.E VII Sem				
1	PC 701 CE	Structural Engineering Design and Detailing -II (Steel)	CE 701.1	Apply the principles, procedures and current code requirements to analyse and design plate girders
			CE 701.2	Design of gantry girders using current code of practice
			CE 701.3	Apply the related design procedure in design of bearings
			CE 701.4	Identify types of bridges, related code of practices principles and procedures in the design of plate girder and truss girder bridges.
2	PC 702 CE	Estimation and Specifications	CE 702.1	Estimate the quantities of materials required for the construction of buildings, roads, culverts, septic tank and earthwork of irrigation canals .
			CE 702.2	Estimate the steel quantities of materials required for the construction of slab, beams and column, footings, staircase, overhead rectangular water tank.
			CE 702.3	Prepare the rate analysis for major items of works for building and roads.
			CE 702.4	Knowledge of specification of works as per APDSS.
			CE 702.5	Ability to prepare tender, contract Documents and identify the project delivery method.

Sample COs of B.E V Sem				
3	PC 501 CE	Reinforced Cement Concrete	CE 501.1	Define the basic properties of concrete, design philosophies, and design methods.
			CE 501.2	Design singly reinforced and doubly reinforced rectangular beams & flanged sections.
			CE 501.3	Design R.C. sections for shear and torsion and analyse R.C. Members for deflection.
			CE 501.4	Design R.C. slabs and staircases.
			CE 501.5	Design R.C. Compression members and R.C. Foundations.
4	PC 502 CE	Theory of Structures -I	CE 502.1	Analyse the beams subjected to Unsymmetrical bending. (Out plane Bending)
			CE 502.2	Compute the Shear Centre of a section.
			CE 502.3	Analyse the statically indeterminate beams and frames Slope Deflection Method.
			CE 502.4	Analyse the statically indeterminate beams and frames using Moment Distribution Method
			CE 502.5	Analyse the statically indeterminate beams and frames using Kanis' Method.
			CE 502.6	Analyse the statically determinate and indeterminate beams and trusses using the concept of strain energy.

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Sample COs of III Sem				
5	PC 302 CE	Strength of Materilas -I	CE 302.1	Able to define the various elastic properties of the material
			CE 302.2	Sketch Shear force diagram and Bending moment diagram for different beams and loadings.
			CE 302.3	Compute the bending stresses and shear stresses for various cross-sections of the beam.
			CE 302.4	Compute the combined direct and bending stresses in columns
			CE 302.5	Analyze the truss analytically and graphically.
			CE 302.6	Compute hoop stress and longitudinal stress in thin and thick cylinders.
6	PC 303 CE	Fluid Mechanics-I	CE 303.1	To identify the substances based on specific gravity, density etc. and compute drag forces due to viscosity.
			CE 303.2	Apply hydrostatic law to compute the forces on surfaces.
			CE 303.3	Reproduce continuity equation and use in problems of pipe flow.
			CE 303.4	Application of Bernoulli's equation and momentum equation for real and ideal fluid flow problems.
			CE 303.5	To study the characteristics of compressible fluid.

Sample COs of III Sem Laboratory Course				
7	PC 351 CE	Engineering Geology Laboratory	CE 351.1	Conduct experiments, take measurements and analyze the data through hands on experience in order to demonstrate understanding of the concepts of Engineering Geology while working in small groups.
			CE 351.2	Demonstrate writing skills through clear laboratory reports.
			CE 351.3	Compare the experimental results with those introduced in lecture, draw relevant conclusions and substantiate them satisfactorily.
			CE 351.4	Transfer their experience to individual performance of experiments and demonstrate effective oral skills.
			CE 351.5	Transfer their experience to individual performance of experiments and demonstrate effective soft skills.
			CE 352.5	Transfer their experience to individual performance of experiments and demonstrate effective soft skills.

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Sample Copy of COs I Sem				
8	MC 106 EG	Engineering English	EG 106.1	Recognize the role of communication and clarify its different forms.
			EG 106.2	Write grammatically correct English.
			EG 106.3	Write efficiently for a variety of professional and social situations using appropriate writing styles.
			EG 106.4	Enrich their vocabulary.
			EG 106.5	Comprehend texts efficiently
9	BS 101 MT	Engineering Mathematics - I	MT 101.1	Examine the convergence and divergence of an infinite series by various methods like P test, Ratio test, and Root test.
			MT 101.2	Using limits, continuity and differentiability of a single variable to classify the mean value theorems and calculate Radius of curvature, envelope, evolutes and trace the curves.
			MT 101.3	Use partial derivatives to calculate maxima and minima of function of several variables and multiple integrals.
			MT 101.4	Compute line, surface, volume integrals and illustrate Green's, Gauss, and Stokes theorems.
			MT 101.5	Perform row and column operation to find rank and hence obtain the solution of system of simultaneous linear equations, Basis and dimension of vector spaces.
			MT 101.6	Apply Cayley Hamilton Theorem to find the inverse and powers of the Matrix.and converting Quadratic equation to canonical form.
10	BS 102 PH	Engineering Physics -I	PH 102.1	To apply the principles of Optics to calculate the wavelength of monochromatic and polychromatic light.
			PH 102.2	Using basic principles of statistical mechanics students can able to understand the materials and their properties.
			PH 102.3	Ability to understand the basic characteristics and design the semiconductor devices by using band theory of solids.
			PH 102.4	Ability to understand the arrangement of atoms and predict the defects in the crystals.
			PH 102.5	Ability to identify, distinguish and characterize the matrials and their properties related to Dielectric, Magnetic, Nano and Superconductors.

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MUFFAKHAM JAH COLLEGE OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF CIVIL ENGINEERING
COURSE HANDOUT 2020-2021

Course Code:	PE 843 CE (CBCS)
Course Title:	Advanced Reinforced Concrete Design
Class:	VIII Sem
Contact Hours per week:	3 Theory
Course Coordinator:	Toufeeq Anwar

Course Coordinator Phone: 9247822784
Course Coordinator Email: toufeeqanwar@mjcollege.ac.in/
Resource link:
Course Coordinator Location: Room 1210-C /1209-D
Course Coordinator Availability: Mr Toufeeq Anwar --- Friday **10:00 - 12:30**

Pre-requisite Courses:
CE 456 – CE 301 R.C.C

Course Description: This is the course in which students are made to acquaint with the analysis and Design of special RCC structures used in construction practice like flat slabs, pile foundation, raft foundation, curved beam, deep beams etc. These concepts learned in the subject will be useful to design of beams curved in plan, deep beam, building frames, flat slabs, pile foundation and raft foundations.

Course Outcomes:
On successful completion of this course, students will be able to:

CO- 1 Design the Beams Curved in Plan and Deep Beams
CO –2 Design the Portal Frames
CO -3 Design the Building Frame
CO -4 Design the Flat Slabs.
CO -5 Design the and Raft Foundations

Overview of Learning Activities

- *Lectures*
- *Class discussions*
- *Assignment work*
- *Tutorials*

Overview of Learning Resources

1. N.Krishna Raju Advanced Reinforced Concrete Design, CBS Publishers,
2. H.J.Shah, Reinforced Concrete, Charoter Publishers.
3. Dr.B.C.Punmia, Comprehensive R.C.C. Designs, Laxmi Pub.

Overview of Assessment

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Assessment will be done by

- *Assignments*
- *Class Tests*
- *University Exam*

COs	POs												PSO'	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
Design the Beams Curved in Plan and Deep Beams	3		3									2	1	3
Design the Portal Frames	3		3											3
Design the Building Frame	3		3									3	2	3
Design the Flat Slabs.	2		3									3	2	3
Design the Pile Foundations and Raft Foundations	2		3									2	2	3

Course Coordinator Module Coordinator Programme Coordinator

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The Program outcomes and Program Specific outcomes are listed here for ready reference. These are circulated and explained to students on the first day of class

Program Outcomes

PO 1: Engineering knowledge: *Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.*

PO 2: Problem analysis: *Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.*

PO 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.*

PO 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.*

PO 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.*

PO 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.*

PO 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.*

PO 8: Ethics: *Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.*

PO 9: Individual and team work: *Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.*

PO 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.*

PO 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.*

PO 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

PSO 1: *Function in construction industry for planning and execution of Civil Engineering projects like Multistoried buildings, Bridges and Water retaining structures etc.*

PSO 2: *Function as consultants for the design of infrastructural projects*

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