LECTURE PLAN

Institute/Department	UNIVERSITY INSTITUTE OF ENGINEERING (UIE)	**Program**	**Bachelor of Engineering-Automobile Engineering(AE201)**
Master Subject Coordinator Name:	Amit Kumar Gupta	**Master Subject Coordinator E-Code**:	**E13243**
Course Name	Aptitude	**Course Code**	**20TDY-302**

Lecture	Tutorial	Practical	Self Study	Credit	Subject Type
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Course Type	Course Category	Mode of Assessment	Mode of Delivery
Employability Enhancement Course	Mandatory Non-Graded (MNG)	Theory Examination (ET)	Theory (TH)

Mission of the Department	MD1. To train professional engineers with strong analytical, modelling, designing, experimental and team work skills. MD2. To provide innovative teaching practices, through excellent laboratory infrastructure and exposure to recent trends in the automotive industry. MD3. To ensure that students are molded into competent automotive engineers to meet the growing challenges of the future. MD4. To provide industry oriented skills and guidance to students for conducting industry collaborated research and educating them with futuristic skills. MD5. Inculcate societal responsibility and ethical values to address the concerns relating to the environment and overall development.
Vision of the Department	To be a Centre of Excellence in Automobile Engineering through research in emerging fields for providing globally competent Engineers equipped with the technology of the future.

Program Educational Objectives(PEOs)	
PEO1	Automobile Engineering Graduates will contribute at local, regional and global level by solving complex engineering problems in the field of Automobile and Mechanical related industries.
PEO2	To prepare graduates for successful career in the field of Automobile Engineering or a related field utilizing his/her education and contribute as an excellent professional and to encourage the spirit of entrepreneurship.
PEO3	Graduates of Automobile Engineering will be able to adapt futuristic technology and innovative skills applicable for dynamic industrial competency to achieve sustainable development goals for life-long learning and career enhancement.

Program Specific OutComes(PSOs)	
PSO1	1. Ability to apply the concepts of alternative advanced fuels, emission norms and manufacturing technologies for design, development, analysis and maintenance of mechanical systems & processes used in automotive sector.
PSO2	2. Ability to work as a professional and/or as an entrepreneur by applying engineering principles and management practices

Program OutComes(POs)	
PO1	Engineering Knowledge: Apply knowledge of mathematics, science and engineering fundamentals and Production and Industrial Engineering specialization to the solution of complex Production and Industrial Engineering problems.
PO2	Problem Analysis: Identify, formulate, research literature and analyze complex Production and Industrial Engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.
PO3	Design/ Development of Solutions: Design solutions for complex Engineering problems and design system components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal and environmental considerations.
PO4	Conduct investigations of complex Engineering problems: Use research-based knowledge and research methods including analysis, interpretation of data and synthesis of information to provide valid conclusions.
PO5	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.
PO6	The Engineer and Society: Apply contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice.

PO7	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.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.
PO9	Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings.
PO10	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.
PO11	Project Management and Finance: Demonstrate knowledge and understanding of 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.
PO12	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.

Text Books

Sr No	Title of the Book	Author Name	Volume/Edition	Publish Hours	Years
1	Acing Quantitative Aptitude for Campus Placements - Part I	Mr. Pradeep Bansal	8th	Chandigarh University	2022
2	Acing Reasoning Ability for Campus Placements	Mr. Pradeep Bansal	5th	Chandigarh University	2022
3	Deciphering Data Sufficiency for Campus Placements	Mr. Pradeep Bansal	3rd	Chandigarh University	2022
4	Interpreting Data for Campus Placements	Mr. Pradeep Bansal	5th	Chandigarh University	2022

Reference Books

Sr No	Title of the Book	Author Name	Volume/Edition	Publish Hours	Years
1	A Modern Approach to Verbal and Non Verbal Reasoning	R.S Aggarwal	7th	S.Chand Publishing Kuttab Road, New Delhi. 011-236	2010
2	Quantitative Aptitude for Competitive Examinations	Abhijit Guha	8th	Tata McGraw Hill Publication 7 West Patel Nagar, N	2018

Course OutCome

SrNo	OutCome
CO1	To define, understand the basic knowledge of Numbers, percentage, average, mixture alligations , set theory, Problem on ages and explain the concepts of quantitative aptitude and logical reasoning.
CO2	To apply the concept of Vedic Mathematics to find squares, cubes, roots to solve MCQs faster by the application of shortcut methods and various concepts of LCM and HCF, Unit digit and ten's digit to s
CO3	To apply the percentage fraction table for simplification, basic concepts of profit and loss, blood relation and number series.
CO4	To evaluate the data in a bar graph, pie chart and tabular column and line graph and the combination of data given in the graphical format and infer the results.
CO5	To effectively solve problems the problem of bar graphs, histograms, dot plots, remainders & factorials, letters and number series and to develop the analytical skill by analyzing the mirror image, wa

Lecture Plan Preview-Theory

Unit No	LectureNo	ChapterName	Topic	Text/ Reference Books	Pedagogical Tool**	Mapped with CO Numer (s)
1	1	Vedic Maths	Mental Calculations; How to find square root, cube root, squares, cubes ; Approximations; How to solve tough calculations in less time.	,T-Acing Quantitative Aptitude fo,R-Quantitative Aptitude for Comp	PPT	CO2
1	2	Classification of Numbers	Number Chart: Real numbers, Imaginary numbers, Rational numbers, Irrational numbers, Integers; Whole numbers & Natural numbers; Odd and Even numbers; Prime and composite numbers; Concept of co-prime pairs	,T-Acing Quantitative Aptitude fo,R-Quantitative Aptitude for Comp	PPT	CO2
1	3	Factors	To find the number of factors of a given number; To find the sum and product of factors of a given number.	,T-Acing Quantitative Aptitude fo,R-Quantitative Aptitude for Comp	PPT	CO2
1	4	LCM and HCF	Concept of LCM and HCF; multiple; Concept of LCM and HCF (GCD); Word problems based on HCF & LCM;	,T-Acing Quantitative Aptitude fo,R-Quantitative Aptitude for Comp	PPT	CO2
1	5	Divisibility and Bodmas	Concept of quotient, remainder, divisor and dividend; Rule of BODMAS; Basic problems on above	,T-Acing Quantitative Aptitude fo,R-Quantitative Aptitude for Comp	PPT	CO2
1	6	Unit,s and ten's digit of higher power	To find unit digit of higer powers of natural numbers; To find tnes digit of higher powers of natural numbers; To calculate last two digits of higer powers of natural numbers	,T-Acing Quantitative Aptitude fo,R-Quantitative Aptitude for Comp	PPT	CO2
1	7	Remainder	Concept of finding remainder of complicated index based quotients;	,T-Acing Quantitative Aptitude fo,R-Quantitative Aptitude for Comp	PPT	CO2
1	8	Factorial	Concept of factorial; Highest power of prime number and composite number in a given factorial	,T-Acing Quantitative Aptitude fo,R-Quantitative Aptitude for Comp	PPT	CO2
1	27	Revision-1 (Unit 1)	Vedic Maths, Classification of Numbers, Factors, LCM & HCF	,T-Acing Quantitative Aptitude fo,R-Quantitative Aptitude for Comp	PPT	CO2
1	28	Revision-2 (Unit 1)	Divisibility & Bodmas, Unit's and ten's digit of higher power, Remainder, Factorial	,T-Acing Quantitative Aptitude fo,R-Quantitative Aptitude for Comp	PPT	CO2
2	9	Percentage -1	Concept of percentages; Concept of percentage increasing and percentage decreasing;	,T-Acing Quantitative Aptitude fo,R-Quantitative Aptitude for Comp	PPT	CO3
2	10	Percentage -2	Concept of successive percentage, Fundamental problems based on above concepts	,T-Acing Quantitative Aptitude fo,R-Quantitative Aptitude for Comp	PPT	CO3
2	11	Profit & Loss - 1	Concept of cost price, selling price and marked price;	,T-Acing Quantitative Aptitude fo,R-Quantitative Aptitude for Comp	PPT	CO3
2	12	Profit & Loss - 2	Fundamentals of profit, loss and discount; Fundamental problems based on above concepts	,T-Acing Quantitative Aptitude fo,R-Quantitative Aptitude for Comp	PPT	CO3

2	13	Letter and Symbol Series - 1	How to find the missing term in the jumbled series; How to find the next term in the jumbled series.	,T-Acing Reasoning Ability for Ca,R-A Modern Approach to Verbal an	PPT	CO3
2	14	Letter and Symbol Series - 2	How to find the missing term in the jumbled series; How to find the next term in the jumbled series.	,T-Acing Reasoning Ability for Ca,R-A Modern Approach to Verbal an	PPT	CO3
2	15	Blood Relation - 1	Concept of symbol representation of blood relations; Family tree based concepts;	,T-Acing Reasoning Ability for Ca,R-A Modern Approach to Verbal an	PPT	CO3
2	16	Blood Relation - 2	Basic problems on above mentioned concept.	,T-Acing Reasoning Ability for Ca,R-A Modern Approach to Verbal an	PPT	CO3
2	29	Revision-3 (Unit 2)	Percentage, Profit & Loss	,T-Acing Quantitative Aptitude fo,T-Acing Reasoning Ability for Ca,R-A Modern Approach to Verbal an,R-Quantitative Aptitude for Comp	PPT	CO3
2	30	Revision-4 (Unit 2)	Letter and Symbol Series, Blood Relation	,T-Acing Reasoning Ability for Ca,R-A Modern Approach to Verbal an	PPT	CO3
3	17	Seating Arrangements	Problem on linear arrangements; Problems on Circular arrangements	,T-Acing Reasoning Ability for Ca,R-A Modern Approach to Verbal an	PPT	CO4
3	18	Eligibility Test	To decide among the given alternatives after assessing the given data for eligibility of candidate	,T-Acing Reasoning Ability for Ca,R-A Modern Approach to Verbal an	PPT	CO4
3	19	Analytical Reasonig	To analyze the given figure; Find the mirror images and water images; Finding missing term after analyzing the given data	,T-Acing Reasoning Ability for Ca,R-A Modern Approach to Verbal an	PPT	CO4
3	20	Non Verbal Reasoning	Finding the pattern for next figure; Finding missing figure; Finding the missing images; Problems on cutting and folding paper.	,T-Acing Reasoning Ability for Ca,R-A Modern Approach to Verbal an	PPT	CO4
3	21	Input Output	Understanding the logic of given steps of input to get required output.	,T-Acing Reasoning Ability for Ca,R-A Modern Approach to Verbal an	PPT	CO4
3	22	Symboperation	Concept of inequalities; Concept of using either the real symbols or substituted symbols.	,T-Acing Reasoning Ability for Ca,R-A Modern Approach to Verbal an	PPT	CO4
3	23	Data Interpretation	Analyze data in Tabular representation, 2-D, 3-D, Venn diagram based DI questions, Miscellaneous	,T-Interpreting Data for Campus P,R-A Modern Approach to Verbal an,R-Quantitative Aptitude for Comp	PPT	CO4
3	24	Set Theory	Introduction of Venn diagrams; Application of Venn diagrams in different problems; Properties of sets and different operators	,T-Acing Reasoning Ability for Ca,R-A Modern Approach to Verbal an	PPT	CO4
3	25	Problem on Ages	Application of concept of ratio on problems of ages related to past and future; Understanding of linear equations; Application of shortcut tricks	,T-Acing Quantitative Aptitude fo,R-Quantitative Aptitude for Comp	PPT	CO4
3	26	Partnership	Dividing profit into ratio of investments; Partial time related problems	,T-Acing Quantitative Aptitude fo,R-Quantitative Aptitude for Comp	PPT	CO4

Assessment Model			
Sr No	Assessment Name	Exam Name	Max Marks
1	20EU01	External Theory	60
2	20EU01	Assignment	10
3	20EU01	Attendance Marks	2
4	20EU01	Mid-Semester Test-1	40
5	20EU01	Quiz	4
6	20EU01	Surprise Test	12
7	20EU01	Mid-Semester Test-2	40