



## University of Kerala

Discipline	Mathematics				
Course Code	UK1MDCMAT100				
Course Title	Numerical Ability - I				
Type of Course	MDC				
Semester	I				
Academic Level	100-199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours per week
	3	3			3
Pre-requisites	Basic Mathematical Operations				
Course Summary	This course is primarily meant for students who have not undergone a Mathematics course beyond their secondary school. The course is expected to improve the student's basic mathematical skills and to understand the mathematics used in their respective fields better.				

### Detailed Syllabus

Module	Unit	Contents	Hrs
<b>I</b>		<b>HCF, LCM, Percentage and Average</b>	<b>11</b>
	1	Highest Common Factor, Methods of finding HCF, Least Common Multiple, Methods of finding LCM, Problems involving HCF and LCM. ( <i>Chapter 2 of Text [1]</i> )	
	2	Percentage, Problems involving percentage. ( <i>Chapter 5 of Text [1]</i> )	
	3	Average, Problems involving average. ( <i>Chapter 6 of Text [1]</i> )	
<b>II</b>		<b>Ratio and Proportion, Profit and Loss</b>	<b>12</b>
	4	Ratio, Types of Ratios, Proportion, Problems involving Ratio and Proportion. ( <i>Chapter 7 of Text [1]</i> )	

Module	Unit	Contents	Hrs
	5	Partnership, Problems involving partnership. ( <i>Chapter 8 of Text [1]</i> )	
	6	Profit and Loss, Problems involving profit and loss. ( <i>Chapter 9 of Text [1]</i> )	
<b>III</b>	<b>Time, Work and Wages, Pipes and Cisterns</b>		<b>11</b>
	7	Problems involving Time, Work and Wages. ( <i>Chapter 10 of Text [1]</i> )	
	8	Problems involving Pipes and Cisterns. ( <i>Chapter 11 of Text [1]</i> )	
<b>IV</b>	<b>Time and Distance, Boats and Streams</b>		<b>11</b>
	9	Problems involving Time and Distance. ( <i>Chapter 12 of Text [1]</i> )	
	10	Problems involving Boats and Streams. ( <i>Chapter 13 of Text [1]</i> )	
	11	Alligation Rule, Problems involving Alligation. ( <i>Chapter 15 of Text [1]</i> )	

## Textbook

1. Dinesh Khattar, *Quantitative Aptitude for Competitive Examinations*, Fourth Edition, Pearson, 2016

## References

1. H Kruglak, JT Moore, RA Mata-Toledo, *Schaum's outline of theory and problems of Basic Mathematics, with Applications to Science and Technology*, Second Edition, McGraw-Hill, 1998.
2. Rajesh Verma, *Fast Track Objective Arithmetic*, Arihant, 2018.

## Course Outcomes

CO No.	Upon completion of the course the graduate will be able to	PO/PSO	Cognitive Level	Knowledge Category	Lecture(L) Tutorial (T)	Practical (P)
CO 1	Understand basic level mathematics used in real life situations	PSO1, PSO2, PSO3, PO1, PO2, PO5	U, An, E	C, P	L	
CO 2	Do maths problems quickly using ready to use formulae	PSO3, PO2	R, Ap	P	L	
CO 3	Understand the concepts of Ratio and Percentage	PSO1, PO1, PO2, PO5	U, E	P	L	
CO 4	Understand the concepts of direct proportion and inverse proportion	PSO1, PO1	U, E	P	L	

(R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create)  
(F-Factual, C-Conceptual, P-Procedural, M-Metacognitive)

## Mapping of CO with PSOs and POs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	2	3	-	-	-	2	1	-	-	1	-	-	-
CO2	-	-	3	-	-	-	-	1	-	-	-	-	-	-
CO3	2	-	-	-	-	-	2	1	-	-	1	-	-	-
CO4	2	-	-	-	-	-	2	-	-	-	-	-	-	-

(- -Nil, 1-Slightly/Low, 2-Moderate/Medium, 3-Substantial/High)

## Assessment Rubrics

- Quiz/Assignment/Discussion/Seminar
- Midterm Exam

- Programming Assignments
- Final Exam

### Mapping of COs to Assessment Rubrics

	Internal Examination	Assignment	Project Evaluation	End Semester Exam
CO1	✓	✓		
CO2	✓			✓
CO3	✓	✓		✓
CO4	✓	✓		✓

DRAFT