

**Course Name: Aptitude Development**

**Course Code: SEAAP003**

**Course Instructor: Dr. Shubhra Mishra**

**Contact Hours: 01**

**Credits: 01**

**OBJECTIVES:** The sole objective of imparting aptitude training is to make students able to critically evaluate various real-life situations by resorting to an analysis of key issues and factors. This Aptitude Training helps them to demonstrate various principles involved in solving mathematical problems and thereby reducing the time taken for performing job functions.

### **Course Content**

#### **Unit A- Arithmetic and Geometric Progression**

Introduction to basic fundamentals of progression.

Elementary formulas to solve the number system problems.

Questions based on sequencing; situation-based questions promoted.

#### **Unit B – Simple and Compound Interest.**

Tips and tricks to solve the Rate, Amount, Principal, Time period.

Mathematical Approach to solve case and situation-based word problems.

#### **Unit C – Mensuration**

Solving Area, Volume, Perimeter related problem sums

That may be 2D or 3D figure.

#### **Unit D – Average**

Concepts on mathematical formulations of average. Problems based on numerical proficiency and word problems are promoted.

Introduction to Techniques of mathematical formulas used to solve the probable outcomes of certain events in daily life problems cum situations.

Introduction to concept of Set Theory and related formulas for the same.

## **COURSE OUTCOMES:**

### **Course Outcomes (CO):**

#### **Course Outcome:**

#### **1. Knowledge Outcome:**

The main objective of this course is to aware learner about international economics principles and analyzing the structure of economy by:

**SEAAP003-1:** Clarify a comprehensive understanding of basics of mathematics such as average and interest. (L2)

**SEAAP003-2:** Determine the concepts of absolute and logical questions of simplifications and calculations. (L5)

**SEAAP003-3:** Clearing the problems related to word problems and quiz. (L4)

**SEAAP003-4:** Determine and use the impact of complex mathematical operations. (L3), (L5)

**SEAAP003-5:** Identify and classify the various situation of word problems. (L1), (L2).

#### **2. Skill Outcome:**

On successful completion of the course, students will be able to achieve the following:

1. **SEAAP003-6:** Solve the real-time problems for performing job functions easily (L5)
2. **SEAAP003-7:** Enhance the Aptitude Round Clearing ability in interview process (L3), (L4).

**SEAP003-8:** Expertise in word problems and simplifications. (L6)

#### **Methodology:**

- 12 participative lectures to set in conceptual clarity
- 2 Assignments
- 2 Quizzes
- Viva
- Anything that is relevant for the course

## **Grading:**

<b>Internal assessment</b>	-	<b>70%</b>
1. Assignments	-	20%
2. Quizzes/ Surprise tests	-	20%
3. Attendance	-	5%
4. Viva	-	10%
5. Student- teacher interaction	-	15%
<b>End Term Exam</b>	-	<b>30%</b>

**Methodology\*:** Tutorials/ Lectures to discuss applications of concepts

- Case Discussion.
- Assignments.

## **Recommended Books:**

- 1) R.S. Aggarwal Quantitative Aptitude Publisher S. Chand
- 2) Adda 247 Ace Quant
- 3) Test Book Quantitative Aptitude
- 4) Quanta book by Aashish Arora
- 5) Quant IQ by Study IQ
- 6) Champion Reasoning Adda 247
- 7) Ace Reasoning Adda 247
- 8) Reasoning Ability by Test book
- 9) 200+ Puzzles by Ankush Lamba

10) Data Interpretation by Ankush Lamba

11) DI 360 by Aashish Arora

12) Data interpretation and analysis by Adda 247

### Lecture Schedule of Aptitude Development

<b>Lecture: 1</b>	
Pedagogy	<ul style="list-style-type: none"><li>· Oral and Power Point based interaction.</li><li>· White Board</li></ul>
Topics to be covered	<ul style="list-style-type: none"><li>· Introduction to course</li></ul>
Learning Outcome	<ul style="list-style-type: none"><li>· To understand the importance of course in program</li><li>· To correlate the course content with real life</li></ul>
Readings	General discussion.
Case Study/Practical	Practical examples
Assignment/Quiz/Project	-
Instructions for Next lecture	Introduction and knowledge of regression.

<b>CO Covered</b>	<b>SEAAP001-1, SEAAP001-3, SEAAP001-3</b>
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<b>Lecture: 2</b>	
Pedagogy	<ul style="list-style-type: none"><li>· Power Point Presentation and discourse</li><li>· Discussion with the help of examples</li></ul>
Topics to be covered	<ul style="list-style-type: none"><li>· Introduction and important formulas</li></ul>
Learning Outcome	<ul style="list-style-type: none"><li>· Importance and role of regression in Mathematics</li></ul>
Practice	Teacher Explained examples
Case Study/Practical	Practical examples done by group of students for practice
Assignment/Quiz/Project	--

Instructions for Next lecture	Diagrammatical representation of the real-life situation, using regression.
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<b>CO Covered</b>	<b>SEAAP001-1</b>
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<b>Lecture: 3</b>	
Pedagogy	<ul style="list-style-type: none"> <li>· Power Point Presentation and White Board Based Interaction.</li> <li>· Discussion with students around the topic with practical examples</li> </ul>
Topics to be covered	<ul style="list-style-type: none"> <li>· Introduction to arithmetic regression of the real-life situation.</li> </ul>
Learning Outcome	<ul style="list-style-type: none"> <li>· Importance and role of arithmetic regression.</li> </ul>
Class Examples	Teacher explained diagrammatical representation of the real-life situation.
Case Study/Practical	Practical examples
Assignment/Quiz/Project	--
Instructions for Next lecture	More rigorous examples on arithmetic and geometric regression.

<b>CO Covered</b>	<b>SEAAP001-1</b>
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<b>Lecture: 4</b>	
Pedagogy	<ul style="list-style-type: none"> <li>· Power Point Presentation and White Board Based Interaction.</li> <li>· Discussion with students around the topic with practical examples</li> </ul>
Topics to be covered	<ul style="list-style-type: none"> <li>· Introduction to</li> </ul>
Learning Outcome	<ul style="list-style-type: none"> <li>· Importance and role of real-life problems which can be easily solved by arithmetic and geometric regression.</li> </ul>
Class Examples	The teacher explained rigours questions on arithmetic and geometric regression.

Case Study/Practical	Practical examples
Assignment/Quiz/Project	--
Instructions for Next lecture	Introduction: Average

<b>CO Covered</b>	<b>SEAAP001-2</b>
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<b>Lecture: 5</b>	
Pedagogy	<ul style="list-style-type: none"> <li>· Power Point Presentation</li> <li>· White Board based interaction</li> </ul>
Topics to be covered	<ul style="list-style-type: none"> <li>· Introduction to Average</li> </ul>
Learning Outcome	<ul style="list-style-type: none"> <li>· Importance and relevance Average</li> </ul>
Class Practice	Teacher explained examples of Average
Case Study/Practical	Practical examples for student's practice
Assignment/Quiz/Project	--
Instructions for Next lecture	<p>Interpretation and Problems based on mixed set of questions such as follows: - Easy, medium and hard average questions.</p>

<b>CO Covered</b>	<b>SEAAP001-1</b>
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<b>Lecture: 6</b>	
Pedagogy	<ul style="list-style-type: none"> <li>· Power Point Presentation</li> <li>· White Board based interaction</li> </ul>

Topics to be covered	Interpretation Problems based on mixed set of questions such as follows: - Easy, medium and hard average questions.
Learning Outcome	<ul style="list-style-type: none"> <li>· To understand the use and solution of real-life problems based/can be solved: - Average</li> <li>· Percentage</li> </ul>
Case Study/Practical	Practical example
Assignment/Quiz/Project	-
Instructions for Next lecture	Introduction of Average including other concepts such as ratio and percentage

<b>CO Covered</b>	<b>SEAAP001-1, SEAAP001-2</b>
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<b>Lecture: 7</b>	
Pedagogy	<ul style="list-style-type: none"> <li>· Power Point Presentation</li> <li>· White Board</li> </ul>
Topics to be covered	Introduction: -  Rigor question on average, ratio and percentage etc.
Learning Outcome	<ul style="list-style-type: none"> <li>· To understand the concept of average, ratio and percentage etc.</li> <li>and the different situations where these can be used effectively.</li> </ul>
Teacher explained	Examples explained by the teacher in class
Case Study/Practical	Practical example for students
Assignment/Quiz/Project	<b>ASSIGNMENT 1 TO BE ANNOUNCED</b>
Instructions for Next lecture	Simple and Compound Interest

<b>CO Covered</b>	<b>SEAAP001-8</b>
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<b>Lecture: 8</b>	
Pedagogy	<ul style="list-style-type: none"> <li>· Power Point Presentation</li> <li>· White Board</li> </ul>
Topics to be covered	<ul style="list-style-type: none"> <li>· Simple Interest, its concept and formula</li> </ul>
Learning Outcome	<ul style="list-style-type: none"> <li>· To understand the concept of simple interest and its use</li> </ul>
Teacher examples	Examples explained by the teacher in class
Case Study/Practical	Practical example for students
Assignment/Quiz/Project	-
Instructions for Next lecture	Introduction to concept of interest and related formulas for the same.

<b>CO Covered</b>	<b>SEAAP001-8</b>
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<b>Lecture: 9</b>	
Pedagogy	<ul style="list-style-type: none"> <li>· Power Point Presentation,</li> <li>· White Board</li> </ul>
Topics to be covered	Introduction to concept of compound interest and related formulas.
Learning Outcome	<ul style="list-style-type: none"> <li>· To understand the importance of Compound interest</li> </ul>
Teacher examples	Examples explained by the teacher in class
Case Study/Practical	Practical example for students
Assignment/Quiz/Project	-
Instructions for Next lecture	<b>REVISION</b> of units: - A, B, C

<b>CO Covered</b>	<b>SEAAP001-2, SEAAP001-8</b>
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<b>Lecture: 10</b>	
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Pedagogy	<ul style="list-style-type: none"> <li>· Power Point Presentation,</li> <li>· White Board</li> </ul>
Topics to be covered	Revision of the topics we have covered previously. <ul style="list-style-type: none"> <li>· Regression</li> <li>· Average</li> <li>· S. &amp; C Interest</li> </ul>
Case Study/Practical	Practical examples solved in the class
Assignment/Quiz/Project	<b>- Quiz #1 TO BE ANNOUNCED</b>
Instructions for Next lecture	<b>Quiz #1 next class</b>

<b>CO Covered</b>	<b>SEAAP001-1, SEAAP001-2</b>
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<b>Lecture: 11</b>	
Pedagogy	<ul style="list-style-type: none"> <li>· Power Point Presentation,</li> <li>· White Board</li> </ul>
Topics to be covered	<b>Quiz #1 in the class</b>
Learning Outcome	Evaluation and Measurement of learning of units: - A, B, C
Assignment/Quiz/Project	<b>Assignment – II to be announced</b>
Instructions for Next lecture	Introduction of: - Mensuration

<b>CO Covered</b>	<b>SEAAP001-1, SEAAP001-2</b>
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<b>Lecture: 12</b>	
Pedagogy	<ul style="list-style-type: none"> <li>· Power Point Presentation,</li> <li>· White Board</li> </ul>

Topics to be covered	Problems based on mixed set of questions such as follows: - Mensuration: - Different shapes and the formula of area and parameter
Learning Outcome	To understand the use and solution of real-life problems based/can be solved of Mensuration
Teacher examples	Examples explained by the teacher in the class
Case Study/Practical	Practical examples
Assignment/Quiz/Project	--
Instructions for Next lecture	Calculation with reference to: - Triangles, Squares, Rectangles

<b>CO Covered</b>	<b>SEAAP001-2</b>
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<b>Lecture: 13</b>	
Pedagogy	<ul style="list-style-type: none"> <li>· Power Point Presentation</li> <li>· White Board</li> </ul>
Topics to be covered	Diagrams with reference to: - Triangles, Squares, Rectangles (area and perimeter)
Learning Outcome	To understand the use and solution of real-life problems based/can be solved graphs/tables which includes, Triangles, Squares, Rectangles (area and perimeter)
Teacher examples	
Case Study/Practical	Practical examples
Assignment/Quiz/Project	<b>-- Announcement of quiz #2</b>
Instructions for Next lecture	<b>REVISION of unit B</b>

<b>CO Covered</b>	<b>SEAAP001-2</b>
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<b>Lecture: 14</b>	
Pedagogy	<ul style="list-style-type: none"> <li>· Power Point Presentation, White Board</li> </ul>

Topics to be covered	<b>REVISION of</b> <ul style="list-style-type: none"> <li>· Formulas:- Area Perimeter</li> <li>· Diagrams</li> <li>· <b>Q and A</b></li> <li>· <b>Queries</b></li> </ul>
Learning Outcome	To understand the use and solution of real-life problems based/can be solved graphs/tables which includes, <ul style="list-style-type: none"> <li>· Formulas and diagram</li> </ul>
Case Study/Practical	Practical examples in class
Assignment/Quiz/Project	<b>Quiz #2 next class</b>
Instructions for Next lecture	<b>Quiz #2 next class</b>

<b>CO Covered</b>	<b>SEAAP001-2</b>
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<b>Lecture: 15</b>	
Pedagogy	<ul style="list-style-type: none"> <li>· Power Point Presentation,</li> <li>· White Board</li> </ul>
Topics to be covered	<ul style="list-style-type: none"> <li>· Review: <ul style="list-style-type: none"> <li>● Regression</li> <li>● Average</li> <li>● S &amp; C Interest</li> </ul> </li> </ul>
Learning Outcome	
Assignment/Quiz/Project	<b>-- Quiz #2 in class</b>

<b>CO Covered</b>	<b>SEAAP001-3</b>
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