Lecture Plan Name of the college: Government College of Arts, Science and Commerce, Sanquelim Name of Faculty: Vishal Gawas **Subject:** Complex Analysis Paper code:MAT 503 **Program:** MSc **Division: Academic year: 2024 - 2025** Semester: I **Total Lectures:** 60 Course Objectives: The student will learn the basic concepts in Elementary Power Series, Analytic Functions and Complex Integration **Expected Course Outcome:** On completion of the course the student will be familiar with the topics in Elementary Power Series, Analytic Functions and Complex Integration **Student Learning Outcome:** At the end of this course a student will be able to 1. Recollect and explain various concepts in Complex Analysis 2. Prove important theorems in the course 3. Apply various concepts of Complex Analysis to solve problems. 4. Correlate various concepts in Complex Analysis and use them to solve problems. **No. of lectures** Exercise/ Topic, Subtopic **Lecture To** ICT Tools Month Reference books Lecture allotted tobe covered Assignment From

| July | 01/07/2024 | 06/07/2024 | 4 | | Problem Solving | Laptop, Smart Boardand writing pad | Complex Analysis by Lars V. Ahlfors |
|------|------------|------------|---|--|--------------------|--|--|
| July | 08/07/2024 | 13/07/2024 | 4 | | Problem Solving | Laptop, Smart Boardand writing pad | Complex Analysis by Lars V. Ahlfors |
| July | 15/07/2024 | 20/07/2024 | 4 | Elementary Theory of Power Series: (Sequences, Series, Uniform Convergence, Power Series, Abel's Limit Theorem), The Exponential and Trigonometric Functions, Periodicity & Logarithm. | Problem Solving | Laptop, Smart Board and writing pad | Complex Analysis by Lars V. Ahlfors |
| July | 22/07/2024 | 27/07/2024 | 4 | Analytic Functions: | Problem Solving | Laptop, Smart Boardand writing pad | Complex Analysis by Lars V. Ahlfors |
| July | 29/07/2024 | 31/07/2024 | 2 | • | Problem Solving | Laptop, Smart Boardand writing pad | Complex Analysis by Lars V. Ahlfors |

| August | 01/09/2024 | 03/09/2024 | 2 | | Problem Solving | Laptop, Smart Boardand writing pad | Complex Analysis by Lars V. Ahlfors |
|-----------|------------|------------|---|---|--------------------|---|--|
| August | 05/08/2024 | 10/08/2024 | 4 | Analytic Functions: Oriented Circles, Families of Circles | Problem Solving | Laptop, Smart Boardand writing pad | Complex Analysis by Lars V. Ahlfors |
| August | 12/08/2024 | 17/08/2024 | 4 | • | Problem Solving | Laptop, Smart Boardand writing pad | Complex Analysis by Lars V. Ahlfors |
| August | 19/08/2024 | 24/08/2024 | 4 | Complex Integration: Line Integrals, Rectifiable Arcs, Line Integrals as Functions of Arcs | Problem Solving | Laptop, Smart Boardand writing pad | Complex Analysis by Lars V. Ahlfors |
| August | 26/08/2024 | 31/08/2024 | 4 | - I | Problem Solving | Laptop, Smart Boardand writing pad | Complex Analysis by Lars V. Ahlfors |
| September | 02/09/2024 | 05/09/2024 | 4 | 1 0 | Problem Solving | Laptop, Smart Boardand writing pad | Complex Analysis by Lars V. Ahlfors |
| September | 13/09/2024 | 14/09/2024 | 2 | - | Problem Solving | Laptop, Smart Boardand writing pad | Complex Analysis by Lars V. Ahlfors |

| September | 16/09/2024 | 21/09/2024 | 4 | Local Properties of Analytical Functions: Laurents Theorem, Zeros, and Poles, Local Mapping, | Problem Solving | Laptop, Smart Boardand writing pad | Complex Analysis by Lars V. Ahlfors |
|-----------|------------|------------|---|---|--------------------|---|--|
| September | 23/09/2024 | 28/09/2024 | 4 | Local Properties of Analytical Functions: Maximum Principle. The General Form of Cauchy's Theorem: Chains and Cycles, | Problem Solving | Laptop, Smart Boardand writing pad | Complex Analysis by Lars V. Ahlfors |
| October | 01/10/2024 | 05/10/2024 | 4 | The General Form of Cauchy's Theorem: Simple Connectivity The Calculus of Residues: The Residue Theorem, | Problem Solving | Laptop, Smart Boardand writing pad | Complex Analysis by Lars V. Ahlfors |
| October | 07/10/2024 | 12/10/2024 | 4 | The Calculus of Residues The Argument Principle | Problem Solving | Laptop, Smart Boardand writing pad | Complex Analysis by Lars V. Ahlfors |
| October | 14/10/2024 | 19/10/2024 | 4 | The Calculus of Residues Evaluation of Definite Integrals. | Problem Solving | Laptop, Smart Boardand writing pad | Complex Analysis by Lars V. Ahlfors |
| October | 21/10/2024 | 22/10/2024 | 2 | Revision | Problem Solving | Laptop, Smart Boardand writing pad | Complex Analysis by Lars V. Ahlfors |

| Component | Max Marks |
|-------------------|-----------|
| ISA 1 | 20 |
| ISA 2 | 20 |
| ISA 3 | 20 |
| ISA 4 | 20 |
| Semester End Exam | 40 |