## SVKM'S NMIMS
## Nilkamal School of Mathematics, Applied Statistics & Analytics
## B.Sc. (Applied Mathematical Computing) (Batch-2024-28)
## First Year (AY- 2024-25)

| Semester I | | | Semester II | | |
|---|---|---|---|---|---|
| Course No. | Course Title | Credits | Course No. | Course Title | Credits |
| 1 | Univariate Calculus | 3 | 1 | Differential Calculus | 3 |
| 2 | Elementary Number Theory | 3 | 2 | Mathematics of Discrete Structures | 3 |
| 3 | Exploratory Data Analysis | 3 | 3 | Statistical Methods | 3 |
| 4 | Functional Programming | 3 | 4 | Data Analysis using Python | 3 |
| 5 | Univariate Calculus and Number Theory Lab | 2 | 5 | Differential Calculus and Mathematics of Discrete Structures Lab | 2 |
| 6 | Exploratory Data Analysis Lab | 1 | 6 | Statistical Methods Lab | 1 |
| 7 | Functional Programming Lab | 1 | 7 | Data Analysis using Python Lab | 1 |
| 8 | Introduction to R | 2 | 8 | Indian Culture and Civilization | 2 |
| 9 | Effective Communication | 2 | 9 | Professional Skills | 2 |
| 10 | Ecology and Environment | 2 | 10 | Global Envrionmental Management | 2 |
| | **Total Credits** | **22** | | **Total Credits** | **22** |

## Second Year (AY-2025-26)

| Semester III | | | Semester IV | | |
|---|---|---|---|---|---|
| Course No. | Course Title | Credits | Course No. | Course Title | Credits |
| 1 | Statistical Techniques | 3 | 1 | Optimization Techniques | 3 |
| 2 | Data Management | 3 | 2 | Integral calculus | 3 |
| 3 | Statistical Techniques Lab | 1 | 3 | OptimizationTechniques Lab | 1 |
| 4 | Data Managment Lab | 1 | 4 | Integral calculus Lab | 1 |
| 5 | Linear Algebra | 3 | 5 | Multivariable Calculus | 3 |
| 6 | Differential Equations | 3 | 6 | Numerical Analysis | 3 |
| 7 | Linear Algebra & Differential Equations Lab | 2 | 7 | Multivariable Calculus & Numerical Analysis Lab | 2 |
| 8 | Introduction to Economics | 2 | 8 | Principle of Management | 2 |
| 9 | Research Methodology | 2 | 9 | Research Discourse I | 2 |
| 10 | Art of Yoga | 2 | 10 | Leadership & Personality Development | 2 |
| | **Total Credits** | **22** | | **Total Credits** | **22** |

## Third Year ( AY-2026-27)

| Semester V | | | Semester VI | | |
|---|---|---|---|---|---|
| Course No. | Course Title | Credits | Course No. | Course Title | Credits |
| 1 | Abstract Algebra | 4 | 1 | Metric Spaces | 4 |
| 2 | Advance Numerical Analysis | 3 | 2 | Numerical Linear Algebra | 3 |
| 3 | DS Elective I-Mathematical Computing (Advance Graph Theory)<br><br>DS Elective II-Financial Computing(Financial Modelling) | 3 | 3 | DS Elective I-Mathematical Computing (Mathematical Biology )<br><br>DS Elective II-Financial Computing(Stochastic Calculus) | 3 |
| 4 | Open Elective I -Network Science | 3 | 4 | Open Elective II -Applied Linear Algebra | 3 |
| 5 | Abstract Algebra & Advance Numerical Analysis Lab | 2 | 5 | Metric Spaces & Numerical Linear Algebra Lab | 2 |
| 6 | Advance Graph Theory Lab<br>Financial Modelling Lab | 1 | 6 | Mathematical Biology Lab<br>Stochastic Calculus Lab | 1 |
| 7 | Fundamental of Finance | 2 | 7 | Project Management | 2 |
| 8 | Research Discourse II | 2 | 8 | Research Discourse III | 2 |
| | **Total Credits** | **20** | | **Total Credits** | **20** |

| | SVKM'S NMIMS | | | | |
|---|---|---|---|---|---|
| | **Nilkamal  School of Mathematics, Applied Statistics & Analytics** | | | | |
| | **B.Sc. (Applied Mathematical Computing) (Batch-2024-28)** | | | | |
| | **Fourth Year  (AY- 2027-2028)** | | | | |
| | **Semester VII** | | | **Semester VIII** | |
| Course No. | Course Title | Credits | Course No. | Course Title | Credits |
| 1 | Partial Differential Equations | 4 | 1 | Elective I-Mathematical Computing(Complex Analysis) | 2 |
| 2 | Integral Transform | 3 | | Elective I-Financial Computing(Stochastic Finance) | |
| 3 | Open Elective I-Financial Computing(Financial Engineering) | 3 | 2 | Open Elective IV -Introduction to Cryptography | 2 |
| | Open Elective I-Mathematical Computing(Introduction to Quantum Computation) | | 3 | Internship/ Capstone Project | 16 |
| 4 | Open Elective III -Mathematical Modelling and Simulation | 3 | | ---- | ---- |
| 5 | Partial Differential Equations & Integral Transform  Lab | 2 | | ---- | ---- |
| 6 | Financial Engineering Lab | 1 | | ---- | ---- |
| | Quantum Computation Lab | | | ---- | ---- |
| 7 | Econometrics | 2 | | ---- | ---- |
| 8 | Research Discourse III | 2 | | ---- | ---- |
| | **Total Credits** | **20** | | **Total Credits** | **20** |

**Total Credits of the Program-168**

**Total subjects-67**