CURRICULUM – WEB RESOURCES

Name of Programme : **M.Sc. MATHEMATICS**

Sl.No	Year I/II	Name of subject	Web Resources
			Core Papers
1	I	ALGEBRAIC STRUCTURES	1. http://mathforum.org 2. http://ocw.mit.edu/ocwweb/Mathematics 3. http://www.opensource.org 4. www.algebra.com
2	I	REAL ANALYSIS I	1. http://mathforum.org 2. http://ocw.mit.edu/ocwweb/Mathematics 3. http://www.opensource.org 4. www.mathpages.com
3	I	ORDINARY DIFFERENTIAL EQUATIONS	1. http://mathforum.org 2. http://ocw.mit.edu/ocwweb/Mathematics 3. http://www.opensource.org 4. www.mathpages.com
4	I	ADVANCED ALGEBRA	1. http://mathforum.org 2. http://ocw.mit.edu/ocwweb/Mathematics 3. http://www.opensource.org 4. www.algebra.com
5	I	REAL ANALYSIS II	1. http://mathforum.org, 2. http://ocw.mit.edu/ocwweb/Mathematics 3. http://www.opensource.org
6	I	PARTIAL DIFFERENTIAL EQUATIONS	1. http://mathforum.org 2. http://ocw.mit.edu/ocwweb/Mathematics 3. http://www.opensource.org 4. www.mathpages.com
7	II	COMPLEX ANALYSIS	1. http://mathforum.org 2. http://ocw.mit.edu/ocwweb/Mathematics 3. http://www.opensource.org 4. http://en.wikipedia.org
8	II	PROBABILITY THEORY	1. http://mathforum.org 2. http://ocw.mit.edu/ocwweb/Mathematics 3. http://www.opensource.org 4. http://www.probability.net

9	II	MEASURE THEORY	1. http://mathforum.org, 2. http://ocw.mit.edu/ocwweb/Mathematics 3. http://www.opensource.org
10	II	GRAPH THEORY	1. https://www.zib.de/groetschel/teaching/WS1314/BondyMurtyGTWA.pdf 2. http://ignited.in/I/a/252519 3. https://www.mygreatlearning.com/blog/application-of-graph theory/
11	II	PROBABILITY AND STATISTICS	1. http://mathforum.org 2. http://ocw.mit.edu/ocwweb/Mathematics 3. http://mathforum.org 4. http://ocw.mit.edu/ocwweb/Mathematics 5. http://www.opensource.org
12	II	TOPOLOGY	1. http://mathforum.org 2. http://ocw.mit.edu/ocwweb/Mathematics 3. http://www.opensource.org 4. http://en.wikipedia.org
13	II	CORE INDUSTRY MODULES	1. https://math.ethz.ch/imsf 2. https://www.projectmanager.com/blog/industrial-processes
14	II	FUNCTIONAL ANALYSIS	1. http://mathforum.org 2. http://ocw.mit.edu/ocwweb/Mathematics 3. http://www.opensource.org 4. http://en.wikiepedia.org
15	II	DIFFERENTIAL GEOMETRY	1. http://mathforum.org 2. http://ocw.mit.edu/ocwweb/Mathematics 3. http://www.opensource.org 4. www.physicsforum.com
16	II	MECHANICS	1. http://mathforum.org 2. http://ocw.mit.edu/ocwweb/Mathematics 3. http://www.opensource.org 4. www.physicsforum.com
17	II	PROJECT WITH VIVA VOCE	Depends on the area of selection
Elective Papers			
18	I	NUMBER THEORY AND CRYPTOGRAPHY	1. https://www.encyclopedia.com/science/encyclopedias-almanacs-transcripts-and-maps/applications-number-theory 2. https://mathstats.uncg.edu/number-theory/ 3. https://en.wikipedia.org/wiki/Number_theory 4. https://en.wikibooks.org/wiki/Cryptography

19	I	GRAPH THEORY AND APPLICATIONS	1. https://www.zib.de/groetschel/teaching/WS1314/BondyMurtyGTWA.pdf 2. http://ignited.in/I/a/252519 3. https://www.mygreatlearning.com/blog/application-of-graph theory/ 4. https://in.coursera.org/learn/graphs 5. https://neo4j.com/blog/top-13-resources-graph-theory-algorithms/
20	I	FORMAL LANGUAGES AND AUTOMATA THEORY	1. https://en.wikipedia.org/wiki/Automata_theory 2. https://en.wikiversity.org/wiki/Automata_theory
21	I	PROGRAMMING IN C++ AND NUMERICAL METHODS	1. https://www.codesansar.com/numerical-methods 2. https://www.phindia.com/Books/BookDetail/9788120335967/numerical-methods-with-c--programming-shah 3. https://www.udemy.com/course/learn-numerical-methods-using-c
22	I	LIE GROUPS AND LIE ALGEBRAS	1. www.math.sunysb.edu/ llkirillov
23	I	MATHEMATICAL PROGRAMMING	1. www.pearsonglobaleditions.com
24	I	FUZZY SETS AND THEIR APPLICATIONS	1. https://www.javatpoint.com/fuzzy-logic - Fuzzy Logic Tutorials 2. https://youtu.be/UQLBoCuf-GE 3. https://youtu.be/oWqXwCEfY78
25	I	DISCRETE MATHEMATICS	1. https://www.javatpoint.com/discrete-mathematics-tutorial - Discrete mathematics Tutorial 2. https://www.khanacademy.org/computing/computer-science/algorithms/intro-to-algorithms/v/discrete-mathematics
26	I	ALGEBRAIC TOPOLOGY	1. https://archive.nptel.ac.in/courses/111/101/111101152/
27	I	MATHEMATICAL STATISTICS	1. http://mathforum.org 2. http://ocw.mit.edu/ocwweb/Mathematics 3. http://www.opensource.org
28	I	STATISTICAL DATA ANALYSIS USING R PROGRAMMING	1. http://www.bio.ic.ac.uk/research/mjcraw/therbook/index.html
29	I	TENSOR ANALYSIS AND RELATIVITY	1. ISBN: 978-87-7022-581-6 (Hardback) 2. 978-87-7022-580-9 (Ebook)
30	I	Wavelets	1. https://archive.nptel.ac.in/courses/108/101/108101093/
31	I	Modelling and Simulation with Excel	1. https://archive.nptel.ac.in/courses/112/107/112107214/

32	I	Machine Learning and Artificial Intelligence	1. https://onlinecourses.nptel.ac.in/noc22_cs24/preview 2. https://onlinecourses.nptel.ac.in/noc22_cs56/preview
33	I	Neural Networks	1. https://nptel.ac.in/courses/117105084
34	II	ALGEBRAIC NUMBER THEORY	1. http://mathforum.org 2. http://ocw.mit.edu/ocwweb/Mathematics 3. http://www.opensource.org 4. www.algebra.com
35	II	FLUID DYNAMICS	1. http://mathforum.org 2. http://ocw.mit.edu/ocwweb/Mathematics 3. http://www.opensource.org
36	II	STOCHASTIC PROCESSES	4. http://mathforum.org 5. http://ocw.mit.edu/ocwweb/Mathematics 6. http://www.opensource.org
37	II	MATHEMATICAL PYTHON -I	1. https://nptel.ac.in/courses/106/106/106106212/ 2. https://programming-steps.blogspot.com/2013/10/raptor-flowchart 3. https://wiki.python.org/moin/BeginnersGuide/Download 4. https://www.edx.org/learn/python
38	II	ALGEBRAIC GEOMETRY	1. **www.jmilne.org/math** 2. **https://williamtroiani.github.io/pdfs/HartshorneSolutions.pdf**
39	II	FINANCIAL MATHEMATICS	**1. https://onlinecourses.nptel.ac.in/noc19_ma26/preview** **2. https://corporatefinanceinstitute.com/resources/data-science/financial-mathematics**
40	II	RESOURCE MANAGEMENT TECHNIQUES	1. **https://www.classcentral.com/course/swayam-operations-research-14219** 2. **https://developers.google.com/optimization/support/resources**
41	II	MATHEMATICAL PYTHON -II	1. http://mathforum.org 2. http://ocw.mit.edu/ocwweb/Mathematics 3. http://www.opensource.org 4. www.algebra.com
Skill Enhancement Papers			
42	I	COMPUTATIONAL MATHEMATICS USING SageMath	1. https://onlinecourses.nptel.ac.in/noc21_ma29/preview 2. https://mosullivan.sdsu.edu/Teaching/sdsu-sage-tutorial/sageprog.html
43	I	MATHEMATICAL DOCUMENTATION USING LATEX	1. https://services.math.duke.edu/computing/tex/online.html 2. https://www.overleaf.com/learn

44	II	OFFICE AUTOMATION AND ICT TOOLS	1. https://nptel.ac.in/courses 2. https://www.coursera.org
45	II	NUMERICAL ANALYSIS USING PYTHON	1. https://www.w3schools.com/python/python_math.asp
46	II	DIFFERENTIAL EQUATIONS USING PYTHON	1. https://www.w3schools.com/python/python_math.asp
47	II	INDUSTRIAL STATISTICS WITH MINITAB	1. https://en.wikipedia.org/wiki/Minitab 2. What is MiniTab? Data Analysis Tool | Simplilearn
Ability Enhancement Papers			
48	I	PROBLEM-SOLVING	1. https://freevideolectures.com/course/4844/nptel-soft-skill-development/30 2. https://onlinecourses.nptel.ac.in/noc19_mg43/preview 3. https://www.youtube.com/watch?v=vflZuk-_Hz4
49	I	REACHING GOALS	1. https://www.uxpin.com/studio/blog/design-review-template-balancing-desirability-viability-feasibility/ 2. https://slideplayer.com/amp/15269902/
50	II	THINKING IN SYSTEMS	1. https://hbr.org/2017/05/linear-thinking-in-a-nonlinear-world
51	II	SERVICE DESIGN	https://en.wikipedia.org/wiki/Service_design
Extra Disciplinary Courses (EDC) for other Departments(not for Mathematics students)			
52	II	MATHEMATICS FOR LIFE SCIENCES	https://www.classcentral.com/course/swayam-biostatistics-and-mathematical-biology-13925
53	II	MATHEMATICS FOR SOCIAL SCIENCES	https://www.classcentral.com/course/swayam-biostatistics-and-mathematical-biology-13925
54	II	STATISTICS FOR LIFE AND SOCIAL SCIENCES	https://alison.com/course/the-fundamentals-of-statistics?utm_source=google&utm_medium=cpc&utm_campaign=Click_Courses-_Broad_&utm_adgroup=Course-2075_The-Fundamentals-of-Statistics&gclid=CjwKCAjw6IiiBhAOEiwALNqncf9ojFI3Uc738RVoW7KdG4FiGqFXcEA4OeJQLENoFw8gUYqltWh