

CURRICULUM – WEB RESOURCES

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

Sl.No	Year I/II/III	Name of subject	Web Resources
Core Papers			
1	I	ALGEBRA & TRIGONOMETRY	<ol style="list-style-type: none"> 1. https://www.mathwarehouse.com/ 2. https://www.mathhelp.com/ 3. https://www.mathsisfun.com/
2	I	DIFFERENTIAL CALCULUS	<ol style="list-style-type: none"> 1. https://nptel.ac.in 2. https://www.mathwarehouse.com/ 3. https://www.mathhelp.com/
3	I	ANALYTICAL GEOMETRY (Two & Three Dimensions)	<ol style="list-style-type: none"> 1. https://nptel.ac.in 2. https://www.mathwarehouse.com/ 3. https://www.mathhelp.com/ 4. https://www.mathsisfun.com/
4	I	INTEGRAL CALCULUS	<ol style="list-style-type: none"> 1. https://nptel.ac.in 2. https://www.mathwarehouse.com/ 3. https://www.mathhelp.com/ 4. https://www.mathsisfun.com/
5	II	BASICS OF ANALYSIS	https://nptel.ac.in
6	II	VECTOR CALCULUS AND ITS APPLICATIONS	<ol style="list-style-type: none"> 1. https://nptel.ac.in 2. https://www.mathwarehouse.com/ 3. https://www.mathhelp.com/ 4. https://www.mathsisfun.com/
7	II	DIFFERENTIAL EQUATIONS AND APPLICATIONS	<ol style="list-style-type: none"> 1. https://nptel.ac.in 2. https://www.mathwarehouse.com/ 3. https://www.mathhelp.com/ 4. https://www.mathsisfun.com/
8	II	INDUSTRIAL STATISTICS	<ol style="list-style-type: none"> 1. https://www.openintro.org/book/stat/ - OpenIntro Statistics 2. http://spcchartsonline.com/ - Statistical Quality Control Tutorial 3. https://www.spcforexcel.com/knowledge/control-chart-basics/control-charts "Control Charts" (Online Tutorial) 4. https://www.analyticsvidhya.com/blog/2018/01/anova-analysis-of-

			variance/ - ANOVA Tutorial
9	II	ELEMENTS OF MATHEMATICAL ANALYSIS	<ol style="list-style-type: none"> 1. https://nptel.ac.in 2. https://www.mathwarehouse.com/ 3. https://www.mathhelp.com/ 4. https://www.mathsisfun.com/
10	III	MODERN ALGEBRA	https://www.open.edu/openlearn/mod/resource/view.php?id=72698
11	III	FUNDAMENTALS OF STATISTICS	<ol style="list-style-type: none"> 1. https://www.zweigmedia.com/RealWorld/Summary7.html - interactive Statistics & Probability learning 2. https://wise.cgu.edu/wp-content/uploads/2015/04/StatWISE1110p.xls (You can download this Excel workbook to have easy access to basic statistics distributions on your computer. The workbook includes Z, t, F, chi-square, and binomial distributions as well as selected computations such as estimating the median for grouped data)
12	III	STATISTICS- II	<ol style="list-style-type: none"> 1. https://www.zweigmedia.com/RealWorld/Summary7.html - interactive Statistics & Probability learning 2. https://wise.cgu.edu/wp-content/uploads/2015/04/StatWISE1110p.xls (You can download this Excel workbook to have easy access to basic statistics distributions on your computer. The workbook includes Z, t, F, chi-square, and binomial distributions as well as selected computations such as estimating the median for grouped data)
13	III	OPERATIONS RESEARCH	<ol style="list-style-type: none"> 1. https://www.linearprogramming.info/ Solve a Linear Programming model with OpenSolver- Excel Add-in that solves optimization models. 2. https://realpython.com/linear-programming-python/ Linear Programming With Python 3. https://www.princeton.edu/~rvdb/LPbook/
14	III	GRAPH THEORY	<ol style="list-style-type: none"> 1. https://d3gt.com/ - Learn Graph Theory Interactively 2. https://www.mathsisfun.com/graph/index.html 3. https://brilliant.org/courses/graph-theory-intro/ 4. http://mathworld.wolfram.com/GraphTheory.html 5. https://www.javatpoint.com/graph-theory - Graph Theory Tutorial
15	III	FUZZY SETS AND FUZZY LOGIC	<ol style="list-style-type: none"> 1. https://www.javatpoint.com/fuzzy-logic - Fuzzy Logic Tutorials 2. https://youtu.be/UQLBoCuf-GE 3. https://youtu.be/oWqXwCEfY78
16	III	NUMERICAL ANALYSIS	<ol style="list-style-type: none"> 1. https://nm.mathforcollege.com/textbook -numerical -methods-with-applications/ 2. https://ocw.mit.edu/courses/mathematics/18-336-numerical-methods-for-partial-differential-equations-spring-2009/

17	III	ABSTRACT ALGEBRA	https://www.open.edu/openlearn/mod/resource/view.php?id=72698
18	III	REAL ANALYSIS	https://nptel.ac.in
19	III	MATHEMATICAL MODELLING	https://nptel.ac.in
20	III	PROJECT WITH VIVA VOCE	Depends on the area of selection
21	III	LINEAR ALGEBRA	https://nptel.ac.in
22	III	COMPLEX ANALYSIS	https://nptel.ac.in
23	III	MECHANICS	https://nptel.ac.in
Elective Papers			
24	I	NUMERICAL METHODS WITH APPLICATIONS	<ol style="list-style-type: none"> 1. https://nm.mathforcollege.com/textbook -numerical -methods-with-applications/ 2. https://ocw.mit.edu/courses/mathematics/18-336-numerical-methods-for-partial-differential-equations-spring-2009/
25	I	CALCULUS OF FINITE DIFFERENCES	<ol style="list-style-type: none"> 1. https://ocw.mit.edu/courses/mathematics/18-336-numerical-methods-for-partial-differential-equations-spring-2009/ 2. https://www.mathworks.com
26	II	MATHEMATICAL STATISTICS	<ol style="list-style-type: none"> 1. https://www.zweigmedia.com/RealWorld/Summary7.html - interactive Statistics & Probability learning 2. https://wise.cgu.edu/wp-content/uploads/2015/04/StatWISE1110p.xls (You can download this Excel workbook to have easy access to basic statistics distributions on your computer. The workbook includes Z, t, F, chi-square, and binomial distributions as well as selected computations such as estimating the median for grouped data)
27	II	MATHEMATICAL STATISTICS PRACTICAL	<ol style="list-style-type: none"> 1. https://www.zweigmedia.com/RealWorld/Summary7.html - interactive Statistics & Probability learning 2. https://wise.cgu.edu/wp-content/uploads/2015/04/StatWISE1110p.xls (You can download this Excel workbook to have easy access to basic statistics distributions on your computer. The workbook includes Z, t, F, chi-square, and binomial distributions as well as selected computations such as estimating the median for grouped data)
28	II	PROGRAMMING IN JAVA	<ol style="list-style-type: none"> 1. https://www.learnjavaonline.org/ - Free Interactive Java Tutorial 2. https://www.educative.io/courses/learn-java-from-scratch - Free online tutorial
29	II	PROGRAMMING IN JAVA	<ol style="list-style-type: none"> 1. https://www.learnjavaonline.org/ - Free Interactive Java Tutorial 2. https://www.educative.io/courses/learn-java-from-scratch - Free online

		PRACTICAL	tutorial
30	II	TRANSFORMATION TECHNIQUES	<ol style="list-style-type: none"> 1. https://mathworld.wolfram.com/LaplaceTransform.html 2. https://mathworld.wolfram.com/FourierSeries.html
31	II	STATISTICAL METHODS	<ol style="list-style-type: none"> 1. http://home.ubalt.edu/ntsbarsh/STAT-DATA/javastat.htm - Statistics e-labs 2. https://onlinestatbook.com/stat_analysis/index.html - Statistical Analysis Lab 3. https://www.w3schools.com/statistics/index.php - Interactive Statistics Tutorial 4. https://www.open.edu/openlearn/pluginfile.php/1061809/mod_resource/content/4/Medical%20statistics%20PDF.pdf – Medical Statistics
32	III	INTRODUCTION TO MACHINE LEARNING	<ol style="list-style-type: none"> 1. https://www.nbshare.io/ - NBSHARE notebook for interactive tutorials on Machine Learning 2. https://www.simplilearn.com/introduction-to-machine-learning-guide-pdf 3. http://www.r2d3.us/visual-intro-to-machine-learning-part-1/ 4. https://www.w3schools.com/python/python_ml_getting_started.asp - ML Tutorials 5. https://www.simplilearn.com/tutorials/machine-learning-tutorial - ML Tutorials
33	III	INTRODUCTION TO MACHINE LEARNING PRACTICAL	<ol style="list-style-type: none"> 1. https://www.nbshare.io/ - NBSHARE notebook for interactive tutorials on Machine Learning 2. https://www.simplilearn.com/introduction-to-machine-learning-guide-pdf 3. http://www.r2d3.us/visual-intro-to-machine-learning-part-1/ 4. https://www.w3schools.com/python/python_ml_getting_started.asp - ML Tutorials 5. https://www.simplilearn.com/tutorials/machine-learning-tutorial - ML Tutorials
34	III	PROGRAMMING IN C	<ol style="list-style-type: none"> 1. https://publications.gbdirect.co.uk/c_book/ The C Book - a free online book on C programming 2. https://en.wikibooks.org/wiki/C_Programming C Programming Wikibook - a free online wikibook on C programming 3. https://www.w3schools.com/c/index.php - Free C Tutorial 4. https://www.geeksforgeeks.org/c-programming-language/ 5. http://visualcplus.blogspot.com/2006/02/lesson-3-data-types-in-registry.html - Free tutorial on C
35	III	PROGRAMMING	<ol style="list-style-type: none"> 1. https://publications.gbdirect.co.uk/c_book/ The C Book - a free online

		IN C PRACTICAL	<p>book on C programming</p> <ol style="list-style-type: none"> https://en.wikibooks.org/wiki/C_Programming C Programming Wikibook - a free online wikibook on C programming https://www.w3schools.com/c/index.php - Free C Tutorial https://www.geeksforgeeks.org/c-programming-language/ http://visualcplus.blogspot.com/2006/02/lesson-3-data-types-in-registry.html - Free tutorial on C
36	III	OPTIMIZATION TECHNIQUES	<ol style="list-style-type: none"> https://www.linearprogramming.info/ Solve a Linear Programming model with OpenSolver- Excel Add-in that solves optimization models. https://realpython.com/linear-programming-python/ Linear Programming With Python https://www.princeton.edu/~rvdb/LPbook/
37	III	DISCRETE MATHEMATICS	<ol style="list-style-type: none"> https://www.javatpoint.com/discrete-mathematics-tutorial - Discrete mathematics Tutorial https://www.khanacademy.org/computing/computer-science/algorithms/intro-to-algorithms/v/discrete-mathematics
38	III	PROGRAMMING IN C++	<ol style="list-style-type: none"> http://cppannotations.sourceforge.net/ https://www.cplusplus.com/doc/tutorial/ https://www.programiz.com/cpp-programming https://www.w3schools.com/cpp/default.asp - C++ free tutorial
39	III	PROGRAMMING IN C++ PRACTICAL	<ol style="list-style-type: none"> http://cppannotations.sourceforge.net/ https://www.cplusplus.com/doc/tutorial/ https://www.programiz.com/cpp-programming https://www.w3schools.com/cpp/default.asp - C++ free tutorial
40	III	PROGRAMMING IN PYTHON	<ol style="list-style-type: none"> http://do1.dr-chuck.com/pythonlearn/EN_us/pythonlearn.pdf - free Python Book https://books.trinket.io/pfe/index.html - Interactive HTML for Python https://www.geeksforgeeks.org/formatted-string-literals-f-strings-python/ https://docs.python.org/3/tutorial/index.html https://pandas.pydata.org/docs/getting_started/index.html#getting-started https://numpy.org/doc/stable/user/absolute_beginners.html https://matplotlib.org/stable/tutorials/introductory/pyplot.html#sphx-glr-tutorials-introductory-pyplot-py
41	III	PROGRAMMING IN PYTHON -	<ol style="list-style-type: none"> http://do1.dr-chuck.com/pythonlearn/EN_us/pythonlearn.pdf - free Python Book

		PRACTICAL	<ol style="list-style-type: none"> https://books.trinket.io/pfe/index.html - Interactive HTML for Python https://www.geeksforgeeks.org/formatted-string-literals-f-strings-python/ https://docs.python.org/3/tutorial/index.html https://pandas.pydata.org/docs/getting_started/index.html#getting-started https://numpy.org/doc/stable/user/absolute_beginners.html https://matplotlib.org/stable/tutorials/introductory/pyplot.html#sphx-glr-tutorials-introductory-pyplot-py
42	III	GRAPH THEORY AND APPLICATIONS	<ol style="list-style-type: none"> https://d3gt.com/ - Learn Graph Theory Interactively https://www.mathsisfun.com/graph/index.html https://brilliant.org/courses/graph-theory-intro/ http://mathworld.wolfram.com/GraphTheory.html https://www.javatpoint.com/graph-theory - Graph Theory Tutorial
43	III	FUZZY SETS AND ITS APPLICATIONS	<ol style="list-style-type: none"> https://www.javatpoint.com/fuzzy-logic - Fuzzy Logic Tutorials https://youtu.be/UQLBoCuf-GE https://youtu.be/oWqXwCEfY78
Skill Enhancement Papers			
44	I	COMPUTATIONAL MATHEMATICS	<ol style="list-style-type: none"> https://www.scilab.org/tutorials - Scilab Tutorials https://egyankosh.ac.in/bitstream/123456789/88092/1/Unit-15.pdf https://www.edx.org/course/scilab-programming-for-beginners https://www.scilab.org/sites/default/files/Scilab_beginners.pdf https://spoken-tutorial.org/tutorial-search/?search_foss=Scilab&search_language=English Scilab Spoken Tutorials
45	I	LaTeX	<ol style="list-style-type: none"> https://www.overleaf.com/ - Overleaf: https://www.sharelatex.com/ - ShareLaTeX https://en.wikibooks.org/wiki/LaTeX - LaTeXWikibook
46	II	E Commerce and Tally	<ol style="list-style-type: none"> https://www.tutorialkart.com/tally/tally-tutorial/ - Tally Tutorial https://sscstudy.com/tally-erp-9-book-pdf-free-download/ https://egyankosh.ac.in/bitstream/123456789/15151/1/Unit-7.pdf https://www.sarkarirush.com/tally-erp-9-book-pdf-download/ https://egyankosh.ac.in/bitstream/123456789/10325/1/Section-3.pdf https://tallysolutions.com/learning-hub/#gref – Tally Learning Hub https://www.tutorialkart.com/accounting/ - Basic Accounting Tutorial https://www.javatpoint.com/e-commerce-definition - E Commere Tutorial
47	II	WEB DESIGNING	<ol style="list-style-type: none"> https://digital.com/wp-content/uploads/html-cheat-sheet.pdf https://tutorial.techaltum.com/webdesigning.html - Web Designing

			<p>Tutorial</p> <ol style="list-style-type: none"> https://www.w3schools.com/html/ - HTML tutorial https://www.w3schools.com/css/default.asp - CSS Tutorial https://www.w3schools.com/css/default.asp - Javascript Tutorial
48	II	STATISTICS WITH R PROGRAMMING	<ol style="list-style-type: none"> https://cran.r-project.org/doc/manuals/r-release/R-intro.pdf http://wise.cgu.edu/wp-content/uploads/2016/07/Getting-Started-with-R-and-RStudio.pdf https://www.w3schools.com/r/ - R Tutorial https://www.programiz.com/r - learn R programming https://www.upgrad.com/blog/r-shiny-tutorial-make-interactive-web-applications-in-r/ R Shiny Tutorial: - How to Make Interactive Web Applications in R https://swirlstats.com/ - Easy to learn R Programming
49	II	DATA ANALYSIS USING SPSS	<ol style="list-style-type: none"> https://med.und.edu/daccota/files/pdfs/berdc_resource_pdfs/data_analysis_using_spss.pdf https://students.shu.ac.uk/lits/it/documents/pdf/analysing_data_using_spss.pdf https://www.lboro.ac.uk/media/media/schoolanddepartments/mlsc/downloads/spss-and-statistics-guide.pdf http://wise.cgu.edu/wp-content/uploads/2014/11/SPSS-Step-by-Step-Regression-Introduction.pdf https://www.javatpoint.com/spss - SPSS Tutorial https://www.open.edu/openlearn/society-politics-law/sociology/getting-started-spss/content-section-0?active-tab=description-tab - Free Course SPSS
50	II	INTRODUCTION TO DATA SCIENCE	<ol style="list-style-type: none"> https://jakevdp.github.io/PythonDataScienceHandbook/ - Python Data Science Handbook: Essential Tools for Working with Data by Jake VanderPlas https://www.cmpe.boun.edu.tr/~ethem/i2ml2e/ - An Introduction to Machine Learning by Alpaydin https://www.open.edu/openlearn/science-maths-technology/learn-code-data-analysis/content-section-overview?active-tab=content-tab - Learn to code for data analysis – Free Course https://www.w3schools.com/datascience/ - Data Science Tutorial https://www.kaggle.com/code/helgejo/an-interactive-data-science-tutorial - Free data Science Tutorial https://www.nbshare.io/ - Data science learning
51	II	MATHEMATICAL	<ol style="list-style-type: none"> https://ocw.mit.edu/courses/economics/14-03-financial-theory-fall-2008/

		FINANCE	<ul style="list-style-type: none"> - Financial Theory 2. https://www.investopedia.com/financial-education-4689775 EC - Financial Mathematics Investopedia - Financial Education: 3. https://www.edx.org/course/financial-analysis-decision-making-0
52	II	COMPUTING MATHEMATICS	<ul style="list-style-type: none"> 1. https://www.mathworks.com/ - MathWorks: 2. http://mathworld.wolfram.com/ - Wolfram MathWorld: 3. https://www.nr.com/ - Numerical Recipes: 4. https://matlabacademy.mathworks.com/ - MATLAB Academy
53	II	INTRODUCTION TO ARTIFICIAL INTELLIGENCE	<ul style="list-style-type: none"> 1. https://online-learning.harvard.edu/course/cs50s-introduction-artificial-intelligence-python 2. https://www.javatpoint.com/artificial-intelligence-ai - AI Tutorial 3. https://www.w3schools.com/ai/ - AI learning 4. https://www.nbshare.io/ - AI learning
54	III	FOURIER SERIES AND LAPLACE TRANSFORMS	<ul style="list-style-type: none"> 1. https://mathworld.wolfram.com/LaplaceTransform.html 2. https://mathworld.wolfram.com/FourierSeries.html
55	III	LOGIC AND BOOLEAN ALGEBRA	<ul style="list-style-type: none"> 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
56	III	Essential Reasoning and Quantitative Aptitude	https://tamilnaducareerservices.tn.gov.in/
Major Elective Papers			
57	I	MATHEMATICS FOR COMPETITIVE EXAMINATIONS	https://tamilnaducareerservices.tn.gov.in/
58	I	BASIC DATA ANALYSIS USING EXCEL	<ul style="list-style-type: none"> 1. https://www.w3schools.com/EXCEL/excel_sort.php - Excel Data Analysis 2. https://www.excel-easy.com - Excel Easy 3. http://home.ubalt.edu/ntsbarsh/excel/excel.htm - Excel for Data Analysis
Allied Papers			
59	I	ALLIED MATHEMATICS -	<ul style="list-style-type: none"> 1. https://www.mathwarehouse.com/ 2. https://www.mathhelp.com/

		I	3. https://www.mathsisfun.com/
60	I	ALLIED MATHEMATICS - II	1. https://www.mathwarehouse.com/ 2. https://www.mathsisfun.com/
61	II	ALLIED MATHEMATICS - III	1. https://www.mathwarehouse.com/ 2. https://www.mathhelp.com/ 3. https://www.mathsisfun.com/
62	II	ALLIED MATHEMATICS - IV	1. https://www.mathwarehouse.com/ 2. https://www.mathhelp.com/ 3. https://www.mathsisfun.com/