GIRIJANANDA CHOWDHURY UNIVERSITY

Department of Economics

Regulation and Course Structure

BSc in Economics and Data Science

(FYUGP & NEP Aligned)

Introduction Year: August, 2026

Describing the Initiative:

1) Executive Summary:

The programme aims to produce learners who can meet the increasing demand for data science and data analytics professionals who are capable of analysing data and dissemination of lifelong understanding to solve real-world problems scientifically.

The objectives of this Programme–

- Apply quantitative techniques to the real-world socio-economic and business problems
- Analyse the data to recommend findings to be presented in a scientific way
- Employ cutting edge machine learning tools to use big data
- Use data mining software and algorithms to build machine intelligence
- Demonstrate knowledge of economics and data science concepts for further applicability in lifelong learning.

2) Program Overview and Strategic Rationale:

2.1. Program Description:

Programme Description: The BSc Programe in Economics and Data Science is an NEP aligned 4 Year Undergraduate Programme (FYUGP) under Girijananda Chowdhury University for the students of any stream who have passed 10+2 examination from any recognised board. The programme is designed for the students of all Arts, Science and Commerce background considering the wide applicability of data science in all fields of job market in today's world.

The Learning Outcome of the Programme –

- Identify, formulate, and analyze complex data science problems using foundational principles of mathematics/statistics, economics and computing.
- Develop predictive and prescriptive models to solve real-world problems across domains.
- Conduct independent research in emerging areas of data science, contributing to academic and industry advancements.
- Collaborate effectively in multidisciplinary teams to solve data-centric problems
- Demonstrate project planning, execution, and management skills in data science initiatives.

- Explore entrepreneurial opportunities by leveraging data science for innovative product or service development.

- Engage in continuous learning to keep pace with evolving technologies, methodologies, and industry trends.
- Pursue certifications, workshops, and advanced studies to enhance professional growth.

2.2. Alignment with GCU's Vision:

This programme is aligned with the vision of GCU toward its ambition of emerging as Northeast India's premier provider of high-quality, premium education. By integrating Economics with Data Science, the department of Economics, GCU positions itself as an innovation hub, fostering research collaborations, global accreditations, and a reputation for producing industry-ready graduates. It differentiates Department of Economics GCU from regional peers by providing a more industry based NEP oriented Curriculum.

2.3 Market Demand for Data Science Skills:

The market demand for data science skills combined with economics is booming, driven by the need for data-driven decision-making in finance, policy-making, and market research. Economists with expertise in data science can analyze large datasets, identify trends, and make predictions, making them highly valuable in industries like finance, healthcare, and e-commerce. Skills like Python, R, machine learning, statistics, and data visualization are in high demand, and professionals with this combination can expect lucrative career opportunities. As companies increasingly rely on data to inform their strategies, the demand for economists with data science skills is expected to grow, making it a promising career path. With the increasing use of big data, this combination is likely to remain a key differentiator in the job market, offering a wide range of opportunities for those who upskill in data science and economics. This trend is expected to continue in 2026 and beyond, making it an exciting time to explore this field.

3. Admission Criteria /Eligibility

10+2 (any stream) or equivalent degree from a recognized board/university.

Students without having any course on Mathematics/Statistics/ Quantitative Theory/Application/Techniques in HS level will take a bridge course on - Basic Mathematics and Statistics. This is a Non-Credit course and students will learn the course simultaneously with first semester courses.

4. Assessment Pattern: Continuous & Comprehensive Assessment

The assessment of the courses incorporates both **Formative** (40% weightage) and **Summative** (60% weightage) evaluation methods. Formative assessment is carried out continuously during the learning process to monitor student progress and provide timely feedback. Summative assessment is conducted at the end to evaluate overall student achievement. The final course evaluation is based on a combination of both these assessment types.

Formative Assessment – 40percent Continuous Evaluation will be assigned based on Presentation, Class participation, Case study, Quiz, Assignment, Class tests, Term Paper etc.

5. Credit Distribution:

Sl. No.	Subject/Courses	Total credit after 3 years
1	Economics(Core)	36
2	Economics (Elective)	12
	Economics (Total)	48
3	Data Science	44
4	AEC	8
5	SEC	9
6	MDC	9
7	VAC	6
8	Internship	4
	Total Credit	**128**

The complete course structure from 1ST Semester to 3rd Semester is proposed as follows

Course Structure of BSc in Economics and Data Science

YEAR – 1

First Semester				
Code	**Course**	**Category of Course**	**L-T-P**	**Total Credit**
	Introductory Economics	Core	4-0-0	4
	Mathematics for Data Science	Core	4-0-0	4
	Introduction to Programming(Python)	Core	3-0-2	4
	Multidisciplinary – I	MDC	3-0-0	3
	AEC-1	AEC	2-0-0	2
	SEC – I	SEC	3-0-0	3
	VAC – I	VAC	2-0-0	2
TOTAL				22

Second Semester				
Code	**Course**	**Category of Course**	**L-T-P**	**Total Credit**
	Elements of Economics	Core	4-0-0	4
	Statistics for Data Science	Core	4-0-0	4
	Data Structure & Algorithms	Core	3-0-2	4
	Multidisciplinary – II	MDC	3-0-0	3
	English/MIL/Foreign language	AEC	2-0-0	2
	SEC – II	SEC	3-0-0	3
	VAC – II	VAC	2-0-0	2
	TOTAL			22

EXIT OPTION WITH CERTIFICATION. Such students who desire to exitafter 1 year of study need to undertake a vocational course (4 credits)

YEAR – 2

Third Semester				
Code	**Course**	**Category of Course**	**L-T-P**	**Total Credit**
	Intermediate Economics	Core	4-0-0	4
	Introduction to Data Science	Core	3-0-0	4
	Data Base Management System	Core	3-0-2	4
	Multidisciplinary – III	MDC	3-0-0	3
	AEC – III	AEC	2-0-0	2
	SEC – III	SEC	3-0-0	3
TOTAL				20

Fourth Semester				
Code	**Course**	**Category of Course**	**L-T-P**	**Total Credit**
	Microeconomics Analysis	Core	4-0-0	4
	Macroeconomics Analysis	Core	4-0-0	4
	Machine Learning	Core	3-0-2	4
	AI Tools and its Application in Economics	Core	3-0-2	4
	*Monetary Economics	Elective	4-0-0	4
	*Urban Economics			
	AEC – IV	AEC	2-0-0	2
	VAC – III	VAC	2-0-0	2
TOTAL				24

EXIT OPTION WITH DIPLOMA. However, such students who desire to exit after 2 years of study need to undertake a vocational course (4 credits).

YEAR – 3

Fifth Semester				
Code	**Course**	**Category of Course**	**L-T-P**	**Total Credit**
	Public Finance and Policy	Core	4-0-0	4
	Economics of Growth and Development	Core	4-0-0	4
	***Econometric Methods**	Elective	4-0-0	4
	***Health Care Economics**			
	Deep Learning	**Core**	**4-0-0**	**4**
	Summer Internship	Internship	0-0-8	4
TOTAL				20

Sixth Semester				
Code	**Course**	**Category of Course**	**L-T-P**	**Total Credit**
	Contemporary issues in Indian Economy	Core	4-0-0	4
	Environmental Economics	Core	4-0-0	4
	***Behavioral Economics**	Elective	4-0-0	4
	***Economics of Gender**			
	Business Intelligence and Big data	**Core**	**4-0-0**	**4**
	Project (Data Science)	Core	0-0-8	4
TOTAL				20

After completion of third year the student will be awarded a **B Sc Degree in Economics and Data Science. At the fourth year the student can specialize on Data Science or Economics.**

(The fourth year courses will be incorporated in the coming semesters after Expert consultation.)