



KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY

Deemed to be University U/S 3 of the UGC Act, 1956

SCHOOL OF ECONOMICS & COMMERCE

ACADEMIC CURRICULUM

UNDER-GRADUATE PROGRAMME

B.Sc. (Economics with Data Analytics)

As Per NEP 2020

Academic Year 2026-27

Effective from Academic Session 2026-27

[The B.Sc. (Economics with Data Analytics) Curriculum for 2nd, 3rd & 4th years of 2025-26 Admission Batch shall be the same as that applicable from 2026-27 Academic Session onwards]



KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY (KIIT)

DEEMED TO BE UNIVERSITY, BHUBANESWAR-751024

Declared u/s 3 of UGC Act, 1956

The Bachelor of Science [B.Sc. (Hons)] in Economics with Data Analytics programme offered by the Department of Economics, School of Economics & Commerce, KIIT Deemed to be University, is a four-year undergraduate programme designed in accordance with the National Education Policy (NEP) 2020 and the UGC Curriculum and Credit Framework (CCF-UG). The programme aims to develop analytically proficient, technologically competent, and ethically responsible graduates with a strong foundation in economics, quantitative methods, and data analytics, enabling them to address contemporary economic and business challenges through evidence-based decision-making.

The rapid growth of the digital economy, artificial intelligence, big data, and financial technologies has transformed the discipline of economics. Modern economists are expected to possess not only sound theoretical knowledge but also the computational and analytical skills required to analyse complex datasets, forecast economic trends, evaluate public policies, and support strategic decision-making. In this context, the programme adopts an interdisciplinary approach by integrating economics with statistics, mathematics, computer science, and data analytics.

The curriculum combines the core principles of economics with contemporary analytical tools and technologies. In addition to foundational courses in Microeconomics, Macroeconomics, Mathematical Economics, Econometrics, Development Economics, Public Economics, International Economics, Financial Economics, and Environmental Economics, students receive rigorous training in C Programming, Data Structures, Programming with R, Python for Data Analysis, Database Management using SQL, Statistical Computing, Bayesian Data Analysis, Machine Learning, Artificial Intelligence and Business Intelligence Tools, Data Analysis using STATA, Applied Data Mining, Time Series Analysis, Big Data Analytics, Applied Panel Data Analytics, Spatial (GIS) Economic Analysis, Computational Modelling, FinTech Analytics, Risk and Portfolio Analytics, and Economic Data Visualisation using Power BI and Tableau. This multidisciplinary curriculum equips students with the knowledge and practical skills required to analyse economic and financial data using advanced statistical, econometric, and computational techniques.

The programme is guided by the educational philosophy of NEP 2020, promoting holistic development through the four pillars of education—learning to know, learning to do, learning to live together, and learning to be. It seeks to cultivate critical thinking, computational reasoning, ethical values, communication skills, innovation, and lifelong learning while fostering an interdisciplinary understanding of economics and its applications in a technology-driven world.

The pedagogy combines classroom instruction with programming laboratories, econometric modelling, statistical computing, case studies, data visualisation, research projects, internships, seminars, and industry interaction. Students gain practical exposure to widely used analytical platforms, including Python, R, SQL, STATA, SPSS, Power BI, Tableau, Microsoft Excel, and cloud-based computing environments, ensuring strong technical competence and industry readiness.

The programme prepares graduates for careers as Economic Analysts, Data Analysts, Business Analysts, Financial Analysts, Policy Analysts, Business Intelligence Analysts, Risk Analysts, FinTech Analysts, Economic Consultants, and Data Scientists, as well as for higher studies and research in Economics, Econometrics, Data Science, Business Analytics, Finance, Public Policy, and related interdisciplinary fields. By integrating economic theory with modern analytical techniques, the programme equips graduates to

contribute effectively to evidence-based policymaking, digital transformation, and sustainable economic development in an increasingly data-driven global economy.

The salient features of the B.Sc. (Economics with Data Analytics) course curriculum are:

- The programme is designed as an interdisciplinary and future-ready data-driven curriculum that integrates Economics with Data Analytics, Statistics, Econometrics, Programming, Artificial Intelligence, Machine Learning, Financial Systems, and Business Intelligence, enabling students to develop quantitative, computational, and analytical competencies for the digital economy.
- The programme is organised into several categories of courses, each carrying specific credit requirements for the different degree types:
- A 3-year UG programme requires a minimum of 120 credits; a 4-year UG (Honours) programme requires 160 credits.
- Major (Core) courses require a minimum of 60 credits for the 3-year programme and 80 credits for the 4-year programme.
- Minor Stream courses require a minimum of 24 credits for the 3-year programme and 32 credits for the 4-year programme.
- General Education Requirement (GER) includes: Multidisciplinary/Open Elective (9 credits), Ability Enhancement Courses (8 credits), Skill Enhancement Courses (9 credits), Value Added Courses (8 credits), Summer Internship & Seminar (8 credits), and Research Project/Dissertation (12 credits for Honours with Research).

Note on Course Codes: Major Core Courses (011–099); Major Discipline Specific Elective Courses (111–299); Minor and Minor Elective Courses (311–499); GER – Ability Enhancement Courses (511–599); GER – Skill Enhancement Courses incl. Internship (611–699); GER – Value Added Courses (711–799); GER – Multidisciplinary/Open Elective Courses (811–899); Lab Courses (911–999).

Multiple Entry and Exit Options (NEP 2020)

- The undergraduate programme extends over four academic years (eight semesters) with multiple entry and exit options, as follows:
- **UG Certificate*:** Awarded to students who exit after Year 1 with a minimum of 40 earned credits and completion of one vocational course (4 credits) during the summer vacation. Re-entry is permitted within 3 years, with degree completion within 7 years.
- **UG Diploma*:** Awarded to students who exit after Year 2 with a minimum of 80 earned credits and completion of one vocational course (4 credits) during the summer vacation. Re-entry is permitted within 3 years, with degree completion within 7 years.
- **3-Year UG Degree:** Awarded on successful completion of three years, subject to fulfilment of the required credit obligations.
- **4-Year UG Degree (Honours):** Awarded on completion of the four-year programme, subject to fulfilment of the full credit requirement.
- **4-Year UG Degree (Honours with Research):** Available to students with a CGPA ≥ 7.5 in the first six semesters who undertake a research project/dissertation (12 credits) in the final year under faculty guidance.

***Additional Course for Exit (Certificate/Diploma)**

	Category of Course	Course Code	Course Name	ContactHrs/ Week	Credits
Exit after 1 st year	Vocational / Internship – I	ES18698	Corporate Internship	8	4
Exit after 2 nd year	Vocational / Internship – II	ES28698	Corporate Internship	8	4

Programme Combinations Available

- 4-Year single major - B.Sc. (Hons.) with Data Analytics as the Minor
- 4-Year Single Major (With Research)) with Data Analytics the Minor

★ Important Note:

1. The UG Economics Curriculum for the 2nd, 3rd, and 4th years of the 2025–26 Admission Batch shall be the same as that applicable from the 2026–27 Academic Session onwards.
2. Students enrolled in UG Economics have the option to choose either Data Analytics as their Minor discipline. The list of Courses in all the Minor subjects is given in Annexures after the Course Structure.

B.Sc. (Economics with Data Analytics)
Semester-wise Course Structure

Effective from Academic Session 2026-27 | Total Programme Credits: 169

Course Code	Course Title	Contact Hours/Week				Credit Points
		L	T	P	Total	
SEMESTER I						
ES11023	Microeconomics-I	3	1	0	4	4
CB10313	Minor I (Programming Fundamentals with C)	3	0	0	3	3
CB10311	Principles of Management	3	0	0	3	3
	English	2	0	0	2	2
	Basic Statistics					2
	Understanding India					3
CB19713	Spreadsheet and its Application					2
CB19921	Programming Fundamentals with C- Lab	0	0	4	4	2
Semester I Total						21
SEMESTER II						
ES11024	Macroeconomics-I	3	1	0	4	4
CB10316	Minor II (Data Structures for Analytics using C)	3	0	0	3	3
	Cyber Culture and Digital Identities (Sociology)					3
	Professional Communication					2
	Quantitative Aptitude and Logical Reasoning					3
	Environmental Studies					2
	Corporate Presentation & Design Techniques					2
	Introduction to Economic Data Analytics	0	0	2	2	1
CB19922	Data Structures for Analytics using C- Lab	0	0	4	4	2
Semester II Total						22

Course Code	Course Title	Contact Hours/Week				Credit Points
		L	T	P	Total	
SEMESTER III						
ES21021	Mathematics for Economists	3	1	0	4	4
ES21023	Statistics for Economists	3	0	0	3	4
CB30113	Minor III (Programming with R)	3	0	0	3	3
PS20103	Science of happiness and wellbeing (Psychology)	3	0	0	3	3
FR11200/ GR11200	Introduction to French/German Language & Culture	1	1	0	2	2
	Corporate Etiquette					2
	English Communication Lab	0	0	2	2	1
SY18001	Sports and Yoga	0	0	2	2	1
CB29921	Programming with R-Lab	0	0	2	2	1
Semester III Total						21
SEMESTER IV						
ES21022	Microeconomics II	3	1	0	4	4
ES21024	Macroeconomics II	3	1	0	4	4
ES21026	Public Economics: Theory and Practice	3	1	0	4	4
CB30122	Minor IV (Python for Data Analysis)	3	0	0	3	3
CB30124	Minor V (Database Management using SQL)	3	0	0	3	3
	Scientific and Technical Writing					2
CB29922	Python for Data Analysis- Lab	0	0	4	4	2
Semester IV Total						22
SEMESTER V						
ES31021	Introductory Econometrics	3	1	0	4	4
ES31023	Economics of Development	3	1	0	4	4
	Discipline Specific Elective 1 (Refer Annex. A)	3	0	0	3	3
	Discipline Specific Elective 2 (Refer Annex. A)	3	0	0	3	3
CB30115	Minor VI (Economic Data Visualization using POWER BI/Tableau)	3	0	0	3	3
ES38621	Summer Internship-I	0	0	8	8	4
CB39921	Economic Data Visualization using POWER BI/Tableau-Lab	0	0	2	2	1

Semester V Total							22
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Course Code	Course Title	Contact Hours/Week				Credit Points
		L	T	P	Total	
SEMESTER VI						
ES31024	Indian Economy-Structure & Performance	3	1	0	4	4
ES31026	International Trade: Theory and Practices	3	1	0	4	4
	Discipline Specific Elective 3 (Refer Annex. A)	3	0	0	3	3
	Discipline Specific Elective 4 (Refer Annex. A)	3	0	0	3	3
CB30126	Minor VII (Statistical Computing for Economists)	3	0	0	3	3
CB30128	Minor VIII (Bayesian Data Analysis)	3	0	0	3	3
Semester VI Total						20
SEMESTER VII-Hons						
ES41021	Game Theory	3	1	0	4	4
	Discipline Specific Elective 5 (Refer Annex. A)	3	0	0	3	3
	Discipline Specific Elective 6 (Refer Annex A)	3	0	0	3	3
	Minor IX (Refer Annex. B)	3	0	0	3	3
	Minor X (Refer Annex. B)	3	0	0	3	3
ES48621	Summer Internship-II	0	0	8	4	4
Semester IV Total						20
SEMESTER VII-Hons with Research						
ES41023	Research Methodology	3	1	0	4	4
	Discipline Specific Elective 5 (Refer Annex. A)	3	0	0	3	3
	Discipline Specific Elective 6 (Refer Annex A)	3	0	0	3	3
	Minor IX (Refer Annex. B)	3	0	0	3	3
	Minor X (Refer Annex. B)	3	0	0	3	3
ES48621	Summer Internship-II	0	0	8	4	4
Semester V Total					4	20

Course Code	Course Title	Contact Hours/Week				Credit Points
		L	T	P	Total	
SEMESTER VIII — Hons.						
ES41022	Foundation of Behavioural Economics	3	1	0	4	4
ES41024	Institutional Economics	3	1	0	4	4
ES41026	Economics of Environment and Sustainability	3	1	0	4	4
	Discipline Specific Elective 7 (Refer Annex. A)	3	0	0	3	3
	Discipline Specific Elective 8 (Refer Annex. A)	3	0	0	3	3
	Minor XI (Refer Annex. B)	3	0	0	3	3
Semester VIII Total (Hons.)						21
SEMESTER VIII — Hons. With Research						
ES48622	Dissertation	0	2	20	22	12
	Discipline Specific Elective 7 (Refer Annex. A)	3	0	0	3	3
	Discipline Specific Elective 8 (Refer Annex. A)	3	0	0	3	3
	Minor XI (Refer Annex. B)	3	0	0	3	3
Semester VIII Total (Hons. With Research)						21

Annexure A: Discipline Specific Elective Courses

Course Code	Course Title	Contact Hours/Week				Credit Points
		L	T	P	Total	
SEMESTER V	Discipline Specific Electives (Choose Any Two)					
ES30121	Industrial Economics and Policy	3	0	0	3	3
ES30123	Theories of Economic Growth	3	0	0	3	3
ES30125	Political Economy of Capitalism	3	0	0	3	3
ES30127	Urban & Regional Economics	3	0	0	3	3
SEMESTER VI	Discipline Specific Electives (Choose Any Two)					
ES30122	Labour Market and Economic Policy	3	0	0	3	3
ES30124	Schools of Economic Thought	3	0	0	3	3
ES30126	Economics of Sustainable Development	3	0	0	3	3
ES30128	Agricultural and Rural Economics	3	0	0	3	3
SEMESTER VII	Discipline Specific Electives (Choose Any Two)					
ES40121	Economics of Health	3	0	0	3	3
ES40123	Climate Economics & Carbon Policy	3	0	0	3	3
ES40125	Economics of Education	3	0	0	3	3

ES 40129	Money, Banking & Financial Markets	3	0	0	3	3
SEMESTER VIII Discipline Specific Electives (Choose Any Two)						
ES40122	Economics Analysis of Law	3	0	0	3	3
ES40124	Gender, Society and Economy	3	0	0	3	3
ES40126	Economics of Innovation	3	0	0	3	3
ES40128	Population Dynamics and Economic Development	3	0	0	3	3

Annexure B: Minor in Data Analytics from Commerce

Course Code	Course Title	Contact Hours/Week				Credit Points
		L	T	P	Total	
SEMESTER VII Minor IX (Choose Any One)						
CB30117	Machine Learning for Data Analytics	3	0	0	3	3
CB40117	AI and Business Intelligence Tools	3	0	0	3	3
CB40119	Data Analysis using STATA	3	0	0	3	3
Minor X (Choose Any One)						
CB40121	Applied Data Mining for Economics	3	0	0	3	3
CB40123	Time Series Data Analysis	3	0	0	3	3
CB40125	Big Data Analytics for Social Sciences	3	0	0	3	3
SEMESTER VIII Minor XI (Choose Any One)						
CB40122	Applied Panel Data Analytics	3	0	0	3	3
CB40124	Spatial (GIS) Economic Analysis	3	0	0	3	3
CB40126	Computational Modelling	3	0	0	3	3
CB40130	FinTech Analytics	3	0	0	3	3
CB40128	Risk and Portfolio Analytics	3	0	0	3	3