



Indian Institute
of Technology Patna

www.iitp.ac.in



3 Years Hybrid UG Programmes

(Live Hybrid Mode of Instruction)

BSc (Hons) CSDA

Computer Science &
Data Analytics

BBA

Bachelor of Business
Administration

PROGRAMS INTRODUCTION

The 21st Century marks the era of a technology-driven society worldwide. Every action to achieve sustainable growth for prosperity has one or more components of technology embedded in it. The same scenario exists with education since knowledge and intellectual property are the most precious. It, undoubtedly, holds the key to sustainability. Keeping this bare truth in mind, the Indian Institute of Technology Patna is a technology-enabled institution for the dissemination of knowledge through industry-demand-driven innovative integration of techno-managerial pedagogy, to enable the youth to build their future and move forward in their aspiring career with an upward trajectory.

The business management programs are aligned with the qualification structure framework of national (ICAI, ICSI, NSE) and international (ACCA, CIMA, CPA) professional bodies and hence are at par with the global standards in skill, core competency and employability. These unique academic programs are the first of its kind in India, to be started by IIT Patna, and it marks a step forward to revive the ancient India glory of the Nalanda University days.

ABOUT

(Why to Register in the Course(s), Eligibility, How to Register?)

Indian Institute of Technology Patna is delighted to start two new UG academic programs, keeping in mind the employability skills demand by the industry, job market and prospective employers. The curriculum and course structure of each program is at par with the globally accepted credit framework with focus on “hands on training” and “transformative pedagogy” envisioned in the National Education Policy (NEP-2020) implemented by the Government of India. Program structure is flexible, modular and suitable equally for both the regular students and working professionals

The sole objective of starting each of the two undergraduate programs is to provide an alternative avenue to fulfil the aspirations of a larger section of school (10 + 2) pass outs, who are equally competent but could not get a seat at the premier technical institutions through JEE (Advanced) examination, the benchmark for entry into the IITs in the country.

The proposed new modular UG programs of 3-years duration, to be started in the academic year 2023-24, and the pathway leading to award of the degree are;

B.Sc. (Hons): Computer Science & Data Science CSDS

BBA : Bachelor of Business Administration

Foundation Year Courses:
Common to all 2 Program
(Switch Option Available)

- Multiple Exit
- Credit Bank
- Re-Entry
- Degree Award

**1ST YEAR
FOUNDATION**

**3 YEAR
(6 SEMESTER)
UG**

**3RD YEAR
DEGREE
(RE-ENTRY
ALLOWED)**

**2ND YEAR
DIPLOMA
(EXIT
ALLOWED)**

Admission Eligibility for 3- year UG Programs:

(A). UG Computer Science Streams:

- a . 10 + 2 in PCM with a minimum of 60% (cumulative)
- b . Valid score/rank in National/State Level Entrance (i.e., JEE, NEET, CUET, BITSAT, KVPY/NTSE/INSPIRE scholarship holders, State Entrance Examinations) OR
- c . Valid score in International Entrance Test; US(SAT-I/SAT-II), UK(BMAT) OR
- d . IITP-SAT entrance test followed by virtual interview

Semester fee (UG Program):

Computer Science : Rs. 40,000.00

[B]. UG Business Management Streams:*

- a . 10 + 2 in with a minimum of 60% (cumulative)
- b . Valid score/rank in National/State Level Entrance (i.e., JEE, NEET, CUET, BITSAT, KVPY/NTSE/INSPIRE scholarship holders, State Entrance Examinations) OR
- c . Valid score in International Entrance Test; US(SAT-I/SAT-II), UK(BMAT) OR
- d . IITP-SAT entrance test followed by virtual interview

Semester fee (UG Program):

Business Management : Rs. 50,000.00

Miscellaneous Fee:

Alumni fee : Rs. 6000 (optional)

Institute Id- Card : Rs. 50V

Curriculum Structure: CSDA: Computer Science & Data Analytics

Year 1 (Foundation): Semester-I

Code	Course Name	L-T-P-Credits	Credit Hours L+T+P/2
BO CDA 101	Mathematics - I	3-1-0-8	4
BO CDA 103	Foundations of Computer Science	3-0-3-9	4.5
BO CDA 105	Foundations of Data Analytics	3-0-3-9	4.5
BO CDA 107	Foundations of English for Professionals	3-0-2-8	4
Total Credits / Credit Hours		34	17

Year 1 (Foundation): Semester-II

Code	Course Name	L-T-P-Credits	Credit Hours L+T+P/2
BO CDA 102	Mathematics II	3-1-0-8	4
BO CDA 104	Programming and Data Structures with Python	3-0-3-9	4.5
BO CDA 106	Numerical methods for Data Science	3-0-3-9	4.5
BO CDA 108	Capstone Project I	0-0-0-12	12
Total Credits / Credit Hours		38	25

Year 2 (Diploma): Semester-I

Code	Course Name	L-T-P-Credits	Credit Hours L+T+P/2
BO CDA 201	Statistics for Data Science	3-1-2-10	5
BO CDA 203	Design of Algorithms	3-0-3-9	4.5
BO CDA 205	Machine Learning Techniques	3-0-3-9	4.5
BO CDA 207	Financial Economics	3-0-0-6	3
Total Credits / Credit Hours		34	17

Year 2 (Diploma): Semester-II

Code	Course Name	L-T-P-Credits	Credit Hours L+T+P/2
BO CDA 202	Database management	3-0-3-9	4.5
BO CDA 204	Computer Organization	3-0-3-9	4.5
BO CDA 206	Advanced Machine Learning Techniques	3-0-3-9	4.5
BO CDA 208	Web Development and App Design	3-0-3-9	4.5
Total Credits / Credit Hours		36	18

Mandatory BO CDA 210: Summer Industry Project (24 credits): To work on a project relevant to Industry/ contemporary problems of Industrial significance for award of Diploma and/or entering to the third year for the degree module.

This project aims to enable a candidate to identify a fundamental problem of valuable practical significance for the industry and work towards its viable solution. Students will work on a specified project, in online/offline mode, under a mentor from academia and/or industry for a period expending up to three months after completion of the fourth semester. There will be a project evaluation committee which will examine the students after completion of his/ her project for awarding grades. The instruments of assessment will be the final project report and a presentation.

Students are encouraged to explore and identify suitable industries/institutions for the project, and the IIT Patna placement cell would like to guide and facilitate their efforts. The project abstract defining aim, methodology, and deliverable has to be submitted to IIT Patna with due approval of the project evaluation committee for further monitoring on the progress of the work.

Year 3 (Degree): Semester-I

Code	Course Name	L-T-P-Credits	Credit Hours L+T+P/2
BO CDA 301	Computer and Network Security	3-0-3-9	4.5
BO CDA 303	Operating Systems	3-0-3-9	4.5
BO CDA 305	Artificial Intelligence Techniques	3-1-2-10	5
BO CDA 307	Industrial and Organizational Psychology	3-0-0-6	3
BO CDA 3xx	Elective I	3-0-x-x	3
Total Credits / Credit Hours		40	20

Year 3 (Degree): Semester-II

Code	Course Name	L-T-P-Credits	Credit Hours L+T+P/2
BO CDA 302	Big Data Analytics	3-1-2-10	5
BO CDA 304	Capstone Project II	0-0-0-16	16
BO CDA 3xx	Elective II	3-0-x-x	3
BO CDA 3xx	Elective III	3-0-x-x	3
Total Minimum Credits / Credit Hours		38	27

Total Minimum Credits
= $220 + 24^* = 244$

*credits for mandatory
Summer Industry Project
after fourth semester

Total Minimum
Credit Hours
= **148**



BBA - Bachelors of Business Administration



Program Learning Objectives:

Objective 1:

To impart fundamental concepts of business analytics and train in core business processes and practices through theory and models of the field of business analytics into the business world.

Program Learning Outcomes:

Learning Outcome 1a:

A young graduate develops clarity on concepts, processes and practices of business world.

Learning Outcome 1b:

A graduate is ready with concepts to apply principles and skills of marketing, economics and finance for decision making using data sciences and analytics.

Objective 2:

To develop and foster critical thinking to analyse, synthesize and solve complex unstructured business problems.

Program Learning Outcomes:

Learning Outcome 2:

A graduate is ready with aptitude to:

- (a) Understand the economic impact in the market
- (b) Analyse the market indicators using technological skill and real time market data for an informed business decision making.

Objective 3:

To develop the ability to use appropriate analytical tools to comprehend, analyse, and critically evaluate complex and unstructured qualitative, quantitative business problems and formulate alternative solutions.

Program Learning Outcomes:**Learning Outcome 3:**

A graduate is ready with hands-on skill in latest technological tool for:

- (a) Qualitative and quantitative analysis of business processes,
- (b) Problem solving with competenceto suggest viable alternative solutions of complex business problems using market intelligence capabilities.

Objective 4:

To build and enhance business intelligence capabilities by adapting the appropriate technology and software solutions.

Program Learning Outcomes:**Learning Outcome 4:**

A graduate is capable of adapting to changing market scenario for analysis and decision making using latest technology and business intelligence.

Objective 5:

To inculcate and impart holistic aptitude for the management of the organizational establishments including start-ups and their functions for taking viable decisions in dynamic business environment.

Program Learning Outcomes:**Learning Outcome 5:**

A graduate is enriched with business leadership attributes, including but not limited to, handling challenges in entrepreneurship, start-up creations, scaling up the business performance.

Year 1 (Foundation): Semester-I

S.No.	Code	SEMESTER COURSES	L	T	P	W	Credit Hours $L+T+(P+W)/2$	TOTAL CREDIT $2L + 2T + P + W$
1.	BO BMC101	Foundations of English for Professionals	3	1	2	0	5	10
2.	BO BMC112	Mathematical Methods for Business Decision	3	0	2	2	5	10
3.	BO BMC113	Foundations of Accounting and Finance (C, A)	3	2	0	0	5	10
4.	BO BMC114	Foundations of Business Management (A)	3	1	0	2	5	10
5.	BO BMC115	Foundations of Business Economics (C)	3	2	0	0	5	10
Total Credits							25	50

Year 1 (Foundation): Semester-II

S.No.	Code	SEMESTER COURSES	L	T	P	W	Credit Hours $L+T+(P+W)/2$	TOTAL CREDIT $2L + 2T + P + W$
1.	BO BMC121	Financial Accounting Practices (C, A)	3	1	0	2	5	10
2.	BO BMC122	Financial Management Practices (C, A)	3	1	0	2	5	10
3.	BO BMC123	Business and Corporate Law (C, A)	3	1	0	2	5	10
4.	BO BMC124	Marketing Management Principles & Practices	3	1	0	2	5	10
5.	BO BMC125	Organizational Management and Behaviour	3	2	0	0	5	10
Total Credits							25	50



Year 2 (Diploma): Semester-I

S.No.	Code	SEMESTER COURSES	L	T	P	W	Credit Hours $L+T+(P+W)/2$	TOTAL CREDIT $2L + 2T + P + W$
1.	BO BMA211	Research Methods and Business Analysis	3	0	2	2	5	10
2.	BO BMA212	Management Accounting Practices (C, A)	3	1	0	2	5	10
3.	BO BMA213	Data Science and Information Management	3	1	0	2	5	10
4.	BO BMA214	Business and Corporate Social Responsibility	3	2	0	0	5	10
5.	BO BMA215	Financial Analytics - I	3	1	0	0	4	8
Total Credits							24	48

Year 2 (Diploma): Semester-II

S.No.	Code	SEMESTER COURSES	L	T	P	W	Credit Hours $L+T+(P+W)/2$	TOTAL CREDIT $2L + 2T + P + W$
1.	BO BMA221	Corporate Governance, Business Law and Ethics (C)	3	1	2	0	5	10
2.	BO BMA222	Business Operations & Performance Management (C, A)	3	1	0	2	5	10
3.	BO BMA223	Big Data and Management Information System	3	0	2	2	5	10
4.	BO BMA224	Financial Analytics - II	3	1	0	0	4	8
5.	BO BMA225	Elective-I	3	2	0	0	5	10
Total Credits							24	48

Elective Options:

- Financial Reporting Practices (C, A)
- Financial Analytics using SAS
- Financial Modelling-I
- Digital Tool in Finance and Account Management (C)
- Spreadsheet Modelling and Database Management
- Human Resource Management
- Business Intelligence and World Economy
- Foundations of Securities Market
- Entrepreneurship Skill and Business Decisions

Mandatory Requirement on Completion of 2nd Year: 24 Credit Corporate Project/Internship

(This requirement is proposed to be essential for awarding 2-year Diploma or for re-entry)

By the end of Year 2:

Foundation Course Qualification Quorum: ACCA (08) and CIMA (09)

YEAR 3: DEGREE: Semester-I

S.No.	Code	SEMESTER COURSES	L	T	P	W	Credit Hours $L+T+(P+W)/2$	TOTAL CREDIT $2L + 2T + P + W$
1.	BO BMA311	Business Analytics Tool and Practices	3	0	2	2	5	10
2.	BO BMA312	Business and Corporate Finance	3	0	2	2	5	10
3.	BO BMA313	Advanced Financial Reporting (C, A)	3	1	0	2	5	10
4.	BO BMA314	Capstone Simulation	2	0	3	3	5	10
5.	BO BMA315	Elective – II	3	1	0	2	5	10
Total Credits							25	50

Elective Options:

- Business Risk Analysis and Management (C, A)
- Accounting and Audit Assurance with Digital Tool (A)
- Taxation System and Practices (A)
- Digital Economy and Business Practices
- Management System Standards
- Supply Chain Modelling and Analytics
- Banking and Business Finance
- Security Analysis
- Portfolio Management
- Financial Analytics - I

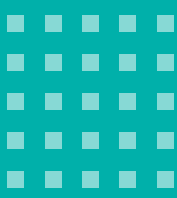
YEAR 3: DEGREE: Semester-II

S.No.	Code	SEMESTER COURSES	L	T	P	W	Credit Hours $L+T+(P+W)/2$	TOTAL CREDIT $2L + 2T + P + W$
1.	BO BMA321	Business Strategy and Reporting (C, A)	3	0	2	2	5	10
2.	BO BMA322	Strategic Business Leadership & Reporting (C, A)	3	0	2	2	5	10
3.	BO BMA323	Project Management	3	0	2	2	5	10
4.	BO BMA324	Business Communication and Soft skill	3	1	1	1	5	10
5.	BO BMA325	Elective-III	3	0	2	2	5	10
Total Credits							25	50

Elective Options:

- Advanced Performance Management and Reporting (C, A)
- Advanced Accounting and Audit Assurance with Digital Tool (A)
- Big Data Analytics for Business Models
- Market Research and Analysis
- Fintech Concepts, Financial Fraud and Secure Practices
- Business and Corporate Finance
- Banking and Business Finance
- Financial Modelling-II
- Corporate Restructuring
- Fundamentals of Fixed Income Securities
- Financial Analytics-II





Director's Message _____



Dr. TN Singh

Director, Chief Academic Mentor, QIP,
Indian Institute of Technology Patna

"Learning is not attained by chance; it must be sought for with ardour and diligence" – Abigail Adams
Established in 2008, **IIT, PATNA** is a bustling campus set up under the aegis of Patna. IIT Patna has emerged as a fully integrated engineering institute of higher learning with newly 3 years UG academic programs.

Since its inception, the institute has not only grown up in its infrastructure but has also developed a lot in terms of academics and laboratories. A well-balanced curriculum, taught by qualified, skilled, and experienced faculty develops the required skills in students necessary to meet tomorrow's applications. IIT, Patna selects bright individuals to its 3 years Hybrid Programmes program, B.sc, BBA etc with diverse backgrounds determined to offer a participative learning process. IIT, Patna is striving to impart efficient professional practices, essential in today's globalized world, and high ethical standards to the students. Our students are involved in multifaceted activities, including developmental & social work in local villages. **We can show you the direction; but, you need to take responsibility to learn, to grow and to become responsible, committed and competent leaders."**

You cannot achieve excellence and long-term success without integrity and ethics.

Our curriculum includes a compulsory course in Business Ethics and activities such as rural visits to help inculcate a sense of social responsibility, marked with compassion for the downtrodden and the needy.

So, come explore excellence and be inspired at **IIT, Patna**.

I am reminded of Benjamin Disraeli's assertion that better education is necessary for us to think more clearly, to be better people, and to create a more just society. Every person who is endowed with a variety of talents and skills is, in my opinion, a priceless gift from God. I'm honoured to introduce to you the IIT, Patna, a renowned and esteemed institution in the city of Patna that offers a wealth of chances and a values-based, high-quality education to develop each child's potential.

I feel fortunate and thrilled to be a part of this outstanding educational institution, and I am grateful for the support of my committed teachers, staff, parents, and different communities.

We are all aware that the complex world in which we live today is undergoing rapid change and offers us both opportunities and problems. In this case, it all comes down to how each person approaches the problem with the proper mindset. We put a lot of effort into making every day of learning exceptional for every student who walks through the doors of this College intending to improve on yesterday.

“Truth can be stated in a thousand different ways, and each one can be true,” Swami Vivekananda said. Education at college assists our students in discovering the truth. The true hallmark of that education is the development of character, mental strength, and intellectual expansion, as well as the ability to stand on one’s own two feet. We provide ample opportunities for our students to seek out that education, discover the truth, and remember how to apply it effectively.

I extend a warm welcome to each one of you at this outstanding institution of higher learning and promise you that you will all thrive in a supportive environment as you develop into capable and thoughtful individuals.

Warmest wishes to you!



Dr. Ak Thakur

Program Coordinator Dept.
of Physics
IIT Patna



Dr. Nk Tomar

Program Coordinator



Dr. Asif Ekbal

Associate Dean (Resource)
Department of Computer
Science & Engineering
IIT Patna, Bihar





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of Technology Patna**

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YOUR CAREER?**

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HOW IT FITS WITH YOUR CAREER?**

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