



B. K. Birla College of Arts, Science & Commerce, Kalyan

Empowered Autonomous Status

Conducted by Kalyan Citizens' Education Society

Affiliated to University of Mumbai

ISO 9001: 2015 Certified | Reaccredited by NAAC (3rd Cycle) with 'A' Grade
(CGPA – 3.58)

NEP BOOKLET 2023-24



National Education Policy 2020

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Introduction

B. K. Birla College (Autonomous), Kalyan a multi-faculty premier institution of higher learning, with an enrolment of more than 14,000 students (9,600+ students in UG, PG and Research Programmes and 4,400+ in Junior College) is affiliated to the University of Mumbai. The College was established in 1972 with the blessings of Pujya Shri B. K. Birla ji and Pujya Smt. Sarala ji Birla. The College offers 32 UG, 33 PG courses and 09 Ph.D. programs. The College also conducts PG Diploma in Bio-nanotechnology, A-DMLT and PG Diploma in Global Education. The College has been reaccredited (3rd Cycle) by NAAC and awarded 'A' Grade (CGPA- 3.58) in 2014. The College was granted 'College of Excellence' status by UGC (2015-20). The College has been granted 'Autonomous Status' by UGC from 2018-19. The College has been approved as a Potential 'Mentor Institution', by UGC under PARAMARSH scheme (2019-20). The New Building (55,000 sq. Ft.) has been added to provide new Science Labs and Classrooms.

The College has taken several initiatives towards green campus including the facility of ETP and STP. Dept. of Environmental Sciences Laboratory has been granted accreditation by National Accreditation Board for Testing and Calibration Laboratories (NABL). To commemorate the Golden Jubilee Year of our College and Birth Centenary Year of our Founder Pujya Shri B. K. Birla ji, the Postal Stamp was released with the College logo and photo of Pujya Shri B. K. Birla ji by the Dept. of Posts, Government of India at the hands of Shri Bhagat Singh ji Koshyari, Hon'ble Governor of Maharashtra and Padma Bhushan Smt. Rajashree ji Birla, our Chief Patron (Digitally) on 14.10.2021 at Raj Bhavan, Mumbai. The College in the pursuit of excellence has attained numerous awards and accolades. The RUSA has sanctioned Rs. 5.00 crore to our college for 'Enhancing Quality and Excellence'. 25 faculty members are Ph.D. Guides. Many faculty members have worked on Major and Minor Research Projects and have published many research papers and authored books. 38 Patents (of which 23 granted) have been contributed by the Faculty Members.

The College has recently introduced M.Sc. (Data Science and Big Data Analytics), M.Sc. (Finance), M.Sc. (Artificial Intelligence), M.Sc. (Food Science and Nutraceuticals) and B.M.S. in Retail Management in association with Maruti Suzuki Pvt. Ltd. from 2022-23. The College has a well-equipped Central Library with IT infrastructure, 79,000+ books, 1130 audio-visual materials, 114 periodicals, 33 E-books, institutional membership of Inflightnet and Delnet. The College has established Mpower Counselling Cell instituted by our patron Respected Dr Neerja ji Birla, Founder and Chairperson of Mpower and ABET to provide holistic mental health care solutions.

The performance of students has been excellent in curricular and extra-curricular activities including NCC, NSS, Sports, etc. Recently, NCC Directorate Maharashtra has sanctioned one Unit (50 cadets) of NCC Air Wing from 2022-23. We have signed MoU with several institutions for strengthening academics and research. We stand committed for the cause of higher education.

VISION

We aspire to be a premier institute of higher education and an inspiring nodal centre catering to the diverse needs of the student-fraternity by providing state-of-the-art facilities and stimulating teaching-learning environment to groom them into excellent human resources.

Mission

To enable students as intellectually alive, socially responsible citizens, ever ready for continuous personal and professional growth.

Goals and Objectives

- To unlock the multiple facets of the students and to facilitate realization of students' potential for excellence.
- To provide them access to a comprehensive array of careers.
- To promote research culture to channelize the spirit of enquiry.
- To Motivate the students for continuous personal and professional growth.
- To instil moral values to mould them into excellent human resource.

Framework of the choice-based credit system

Major Subject: A single subject course of study pursued by a student as a mandatory requirement of the programme of study.

Minor Subject: A second subject of study pursued by a student in addition to the Core subject and which complements the Core subject.

IKS: Indian Knowledge System- in alignment with the Core subject providing knowledge about the rich heritage and culture of India and knowing its roots.

OEC/ GEC: Open / General Elective - An elective course chosen generally from an unrelated discipline/subject only, to seek multi / interdisciplinary exposure thereby enhancing employability. **VSEC: Vocational and Skill Enhancement Course-** a course related to either Major or Minor subject. Catering to the Multiple entry and exit of students.

VSC: Vocational Skill Course – Courses aimed at imparting practical skills, hands-on training, and soft skills to increase the employability of students. Specific or supporting the major subject is to be chosen from a basket/pool offered by the college.

SEC: Skill Enhancement Course – Courses aimed at imparting practical skills, hands-on training, and soft skills to increase students' employability. It could be chosen from a basket/pool offered by the college or a MOOC on Swayam or NPTEL platforms and related to the Core subject.

AEC: Ability Enhancement Course - Mandatory Courses on content related to Language, and Literature

- (i) Compulsory – English communication
- (ii) Elective – any Modern Indian language other than English.

On-Job Training (OJT)/ Internship/Field Project (FP)/ Research Project (RP)/ Community Engagement and Service Programme (CEP): Application of knowledge/ concepts in solving or analysing a real-life problem. Aims at fulfilling graduate attributes of Communication, Leadership, Problem- solving, Goal setting, Task delivery etc. All these are related to the major subject.

CC: Co-curricular Course – For the holistic development of students through NSS, NCC, Yoga Education, Health and Wellness, Fitness, Sports, Rotaract, Cultural activities such as Fine/ Applied/ Performing/ Visual arts, etc. **VEC: Value Education Course** – Aims at creating awareness, updating the knowledge moving with time and at the same time making responsible citizens of the country.

Bachelor of Science (Computer Science)

SEM I	SUBJECTS
Major I	Fundamentals of Programming
Major II	Digital Electronics
Minor I	Mathematical Foundations of Computer Science
Minor II	Open-Source Technology
Open Elective (OE)	IOT and Robotics Programming
VSC	Linux Administration
SEC	Python Programming
IKS	Indian farming Practices
AEC	Communication Skills
VEC	Green Computing

SEM II	SUBJECTS
Major I	Data Structure
Minor I	Descriptive Statistics
Open Elective (OE)	Web Designing
VSC	Networking and Hardware maintenance
SEC	App Development
AEC	Technical Writing with Latex
VEC	Creative Content Writing
OJT, FP, CEP, CC, RP	Yoga and Meditation

Bachelor of Science (Information Technology)

SEM I	SUBJECTS
Major I	Database Management System
Major II	Computer Oriented Architecture
Minor I	Mathematical Foundation of Information Science
Minor II	E-Commerce Technologies
Open Elective (OE)	Data Classroom
VSC	Introduction To Programming (C++)
SEC	Understanding E-Services
IKS	Indian Science and Technology
AEC	Technical Communication Skills
VEC	Environmental Technology

SEM II	SUBJECTS
Major I	OOP with Python Programming
Major II	Operating System
Minor I	Computer Network
Minor II	Gaming Using Unity
Open Elective (OE)	Website Designing
VSC	Mobile Application Development
SEC	Web Programming
AEC	Free And Open-Source Software
VEC	Human Values and Ethics in it
OJT, FP, CEP, CC, RP	Book Reading and reviewing

Bachelor of Science (Biotechnology)

SEM I	SUBJECTS
Major I	Biotechnology I
Major II	Biotechnology II
Minor I	Chemical Science I
Open Elective (OE)	Nutritional Science
VSC	Food Technology
SEC	Basic Biotechnics
IKS	Ancient VS Modern Biotechnology
AEC	Communication Skills
VEC	Environmental Science I

SEM II	SUBJECTS
Major I	Biotechnology III
Major II	Biotechnology IV
Minor I	Introduction to Biomolecules
Open Elective (OE)	Green source of energy
VSC	Plant tissue culture
SEC	Computational biology basics
AEC	Personality development
VEC	Environmental Science II
OJT, FP, CEP, CC, RP	NCC/NSS/Performing arts

Bachelor of Science (Bioanalytical Sciences)

SEM I	SUBJECTS
Major I	Biological Sciences I
Major II	Bioanalytical Sciences I
Minor I	Chemical Sciences I
Open Elective (OE)	Know your medicine philosophy, science, and psychology
VSC	Application of basic Chemical techniques in analysis of ayurvedic plant material
SEC	Laboratory Safety Procedures
IKS	Indian Medicinal System
AEC	Communication Skills
VEC	Environment Science

SEM II	SUBJECTS
Major I	Biological Sciences II
Major II	Bioanalytical Sciences II
Minor I	Introduction to Biomolecules I
Open Elective (OE)	Traditional Indian Health Management System
VSC	Applications of Basic Techniques in analysis of water and food samples
SEC	Essential laboratory techniques
AEC	Personal Development
VEC	Digital and Technological Solution – ICT Fundamentals
OJT, FP, CEP, CC, RP	NCC/NSS/Performing arts/Fine Arts

Bachelor of Commerce (Accounting & Finance)

SEM I	SUBJECTS
Major I	Financial Accounting - I
Major II	Auditing I
Minor I	Legal Aspects in Business
VSC	Professional Communication
SEC	Business Mathematics
IKS	Self-Understanding: Indian Perspective
AEC	Business English
VEC	Environment Studies

SEM II	SUBJECTS
Major I	Financial Accounting – II
Major II	Auditing – II
Minor I	Business Economics
VSC	Excel Analytics
SEC	Financial Education and Investment Awareness
AEC	Sambhasan kala
VEC	Constitution of India
OJT, FP, CEP, CC, RP	NSS/NCC/Rotaract/Arts Circle

Bachelor of Commerce (Banking & Insurance)

SEM I	SUBJECTS
Major I	Accounting for Banking Professionals
Major II	Principles and Practices of Banking Sector
Minor I	Legal aspect in Banking and Insurance sector
VSC	Professional Communication
SEC	Business Mathematics
IKS	Self- understanding: Indian Perspective
AEC	Business English
VEC	Environment Studies

SEM II	SUBJECTS
Major I	Basics of Applied Costing in Banking & Insurance Sector
Major II	Retail Banking
Minor I	Principles of Insurance Sector
VSC	Investment Banking
SEC	Public Relations & Corporate Communication
AEC	Sambhashan Kala
VEC	Constitution of India
OJT, FP, CEP, CC, RP	NSS/NCC/ Rotaract/ Arts Circle

Bachelor of Commerce (Financial Management)

SEM I	SUBJECTS
Major I	Financial Management – I
Major II	Indian Financial System
Minor I	Corporate Law
VSC	Financial Skills
SEC	Business Mathematics
IKS	Self- understanding: Indian Perspective
AEC	Business English
VEC	Environment Studies

SEM II	SUBJECTS
Major I	Financial Management –II
Major II	Principles of Finance
Minor I	Business Economics
Vocational Skill Course (VSC)	Alternative Investments
Skill Enhancement Course (SEC)	Public Relations & Corporate Communication
AEC	Sambhashan Kala
VEC	Client Value Creation
OJT, FP, CEP, CC, RP	NSS/NCC/ Rotaract/ Arts Circle

Bachelor of Arts (Mass Media & Communication)

SEM I	SUBJECTS
Major I	History of Media
Major II	Effective Communication
Minor I	Creative Writing
Open Elective (OE)	
VSC	Visual Communication on Design – I
SEC	Fundamentals of Mass Communication
IKS	Developing Academic Skills
AEC	Documentary & Value Education
VEC	Media & Culture

SEM II	SUBJECTS
Major I	Introduction to Advertising / Journalism
Major II	Content Writing
Minor I	Advertising / Journalism
Minor II	Current Affairs
Open Elective (OE)	Visual Story Telling
VSC	Design Principles
SEC	Visual Communication
AEC	Professional Communication
VEC	Design Thinking
IKS	Social Media Analytics

Bachelor of Computer Application (BCA)

SEM I	SUBJECTS
Major I	Structured Programming with C
Major II	Computer Networks
Minor I	Introduction to Computers
Minor II	Basics Mathematics
Open Elective (OE)	Office Automation
VSC	Free open-Source Software
SEC	Information System for Business
IKS	Indian Science and Technology
AEC	Technical Communication Skills
VEC	Green Computing

SEM II	SUBJECTS
Major I	Oops with C++
Major II	Database System
Minor I	Web Designing
Minor II	Python Programming
Open Elective (OE)	IOT and Robotics
VSC	Introduction to Cyber Security
SEC	Content development and Media
AEC	E- Commerce Technologies
VEC	Environmental Technology
OJT, FP, CEP, CC, RP	Yoga & Meditation

Bachelor of Management Studies

SEM I	SUBJECTS
Major I	Principles of Management
Major II	Business Environment
Minor I	Business Economics
VSC	Case Study Analysis
SEC	Business Mathematics
IKS	Self-Understanding: Indian Perspective
AEC	Business English
VEC	Environment Studies

SEM II	SUBJECTS
Major I	Basics of Business Accounting
Major II	Corporate Administration
Minor I	Managerial Economics
VSC	Business Statistics
SEC	Critical Thinking & Problem-Solving Skills
AEC	Sambhasan kala (Hindi)
VEC	Constitution of India
OJT, FP, CEP, CC, RP	NSS/NCC/ Rotaract/ Arts Circle

Masters in Science (Computer Science)

SEM I	SUBJECTS
Major I	Data on Cloud
Major II	Design Thinking
Major III	Applied Data Analytics
Major IV	Computational Intelligence
Minor	Research Methodology & Biostatistics
Electives	Advance Operating System/Computer Vision

SEM II	SUBJECTS
Major I	Data and Visual analytics in AI
Major II	Data and Visual analytics in AI
Major III	Robotic Process Automation
Major IV	Advance Software Engineering
Electives	AI Tools/Data Visualization Using Python
OJT, FP, CEP, CC, RP	On job training

Masters in Science (Information Technology)

SEM I	SUBJECTS
Major I	Introduction to Cloud Computing
Major II	Data Science using Python
Major III	Advance Computer Network
Major IV	Entrepreneurial Skills and Scientific Writing
Minor I	Research Methodology
Electives	Soft Computing / Data on Cloud

SEM II	SUBJECTS
Major I	Big Data Analytics
Major II	Machine Learning
Major III	Block chain technology
Electives	Edge Computing / Cloud Management
OJT, FP, CEP, CC, RP	Internship with Project

Masters in Science (Biotechnology)

SEM I	SUBJECTS
Major I	Immunology
Major II	Molecular Biology and Genetic Engineering
Major III	Biotechniques
Major IV	Biochemistry
Electives	Structural Bioinformatics
OJT, FP, CEP, CC, RP	Research Methodology

Sem I	Subjects
Major I	Agricultural Biotechnology
Major II	Immunology II
Major III	IPR And Biosafety
Major IV	Biodiversity And Phylo-Informatics
Electives	Metabolism
OJT, FP, CEP, CC, RP	Open Job Training

Masters in Science (Artificial Intelligence)

SEM I	SUBJECTS
Major I	Computational Statistics with R
Major II	Foundations of Artificial Intelligence
Major III	Data Analysis using Excel and Python
Major IV	Entrepreneurial Skills and Scientific Writing
Minor I	Research Methodology
Electives	Design Thinking / Database Systems for Big Data

SEM I	SUBJECTS
Major I	Modern Algorithm Design
Major II	Decision Modelling
Major III	Machine Learning
Electives	RPA Foundation / Intelligent Agent based computing
OJT, FP, CEP, CC, RP	Internship with Project

Masters in Science (Data Science and Big Data Analytics)

SEM I	SUBJECTS
Major I	Applied Statistics using R
Major II	Data Modelling and Visualization
Major III	Data on Cloud
Major IV	Entrepreneurial Skills and Scientific Writing
Minor I	Research Methodology
Electives	Basics of Data Science with Python / Advance Data Structures and algorithm

SEM II	SUBJECTS
Major I	Practical Approach to Data Mining & Analytics
Major II	Machine Learning
Major III	Optimization and Simulation for Data Science
Minor I	Design Thinking / Sentiment, Web, and Text Analytics
Electives	Internship with Project

Masters in Science (Finance)

SEM I	SUBJECTS
Major I	Economics
Major II	Quantitative Methods
Major III	Financial Accounting Reporting & Analysis
Major IV	Taxation
Electives	Financial Management/ Costing & Control System
OJT, FP, CEP, CC, RP	Research Methodology

SEM II	SUBJECTS
Major I	Corporate Governance & Regulatory Environment
Major II	Fixed Income Securities Markets
Major III	Econometrics & Financial Modelling
Major IV	Corporate Finance
Electives	Financial Markets & Institutions / Investment Banking & PEVC
OJT, FP, CEP, CC, RP	Internship with Project

Masters in Science (Environmental Sciences)

SEM I	SUBJECTS
Major I	Ecology and Ecosystem
Major II	Earth and Meteorology
Major III	Environment al Pollution
Minor	Research Methodology
Electives	Biodiversity/ Environment and Natural resource

SEM II	SUBJECTS
Major I	Environmental Chemistry and Instrumentation
Major II	Pollution Control Technology
Major III	Policies and Regulations
Electives	Environmental System Analysis/ Disaster Management
OJT, FP, CEP, CC, RP	Internship

Masters in Science (Industrial Biotechnology)

SEM I	SUBJECTS
Major I	Microbial genetics and recombinant DNA technology
Major II	Enzymology and Enzyme Technology
Major III	Molecular pathogenesis and clinical diagnosis
Major IV	Environmental Biotechnology
Minor	Research Methodology
Electives	Structural Bioinformatics

SEM II	SUBJECTS
Major I	Bioprocess technology & downstream processing
Major II	Instrumentation
Major III	Food Biotechnology
Electives	Cell Culture Techniques/ Biodiversity & Phylo-informatics
OJT, FP, CEP, CC, RP	Internship

Masters in Commerce (e-Commerce)

SEM I	SUBJECTS
Major I	Statistical Analysis
Major II	Financial Management
Major III	Computer Application in Business
Major IV	Managerial Economics
Electives	Financial and Cost Accounting/Management principle and OB.
OJT, FP, CEP, CC, RP	Research Methodology

SEM II	SUBJECTS
Major I	Logistics and supply chain management
Major II	International Finance
Major III	Web Programming
Major IV	Digital Marketing
Electives	Accounting for managerial decisions/ Marketing Management
OJT, FP, CEP, CC, RP	Internship with Project

Masters in Commerce (Accounting & Finance)

SEM I	SUBJECTS
Major I	Advanced Financial Accounting –I
Major II	Security Analysis and Portfolio Management
Major III	Advanced Direct Tax
Major IV	Personal Financial Planning
Electives	Advanced Auditing- I
OJT, FP, CEP, CC, RP	Research Methodology

SEM II	SUBJECTS
Major I	Advanced Financial Accounting- II
Major II	Goods & Service Tax
Major III	Advanced Cost Accounting- I
Major IV	Advanced Corporate Accounting
Electives	Advanced Auditing- II
OJT, FP, CEP, CC, RP	On the Job Training

Masters in Commerce (Business Management)

SEM I	SUBJECTS
Major I	Strategic Management
Major II	Corporate Finance
Major III	Principles and Practices of Management
Major IV	Economics for Business Decisions
Electives	Financial Services Paper- I
OJT, FP, CEP, CC, RP	Research Methodology

SEM II	SUBJECTS
Major I	Business Ethics and CSR
Major II	Cost and Management Accounting
Major III	E-commerce
Major IV	Macro Economics - Concepts and Applications
Electives	Financial Services Paper-II
OJT, FP, CEP, CC, RP	Arts Circle