Babu Banarasi Das University
Lucknow

SCHOOL OF MANAGEMENT

Course Curriculum
As per National Educational Policy 2020

Bachelor of Business Administration -Business Analytics
(in collaboration with IBM)

[Effective from Academic Batch: 2023-24]

Course Curriculum of Bachelor of Business Administration - Business Analytics

(in collaboration with IBM)

Version Control

Version	5.0
Effective from	1st July, 2023

BACHELOR OF BUSINESS ADMINISTRATION - BUSINESS ANALYTICS

(IN COLLABORATION WITH IBM)

INTRODUCTION

BBA - Business Analytics is Programme in collaboration with IBM which aims at providing inputs to the students relevant to the business, industry and trade so that they can function in different organizations and face the challenges arising there from. Right from the beginning of the Programme, the focus is on providing relevant inputs through live case discussion/ analysis, simulation, Labs, Big Data handling etc. The Programme focuses on the development of the analytical skills in students and to provide them with opportunities to excel in the field of Business or Data Analytics.

The courses of the programme are divided into six categories namely **Discipline Specific Course - Core Courses (DSC)**, **Discipline Specific Elective- Core Course (DSE)**, **Generic Elective Courses- Minor Courses (GE), Co-Curricular Courses (CC)** which includes (Multidisciplinary Course and Ability Enhancement Course); **Vocational Courses (VC)** which includes **AIPCM** (Apprenticeship/ Internship/ Project/ Community Outreach/ MOOC) and Value-Added Courses and last category of **Dissertation Report**. In the CC and VC the student has an option to opt from various courses which are also offered by other Schools of the University.

The structure of the Programme is designed in a way that students study the core courses from different functional areas of management that are made compulsory along with one course in each semester which consists industrial applications and will be taught by IBM Professionals.

A Research Project has to be submitted as part of the compulsory courses of sixth semesters.

DEFINITIONS

1. **Academic Credit**- An academic credit is a unit by which the course work is measured. It determines the number of hours of instructions required per week. One credit is equivalent to 15 hours of teaching (lecture or tutorial) or 30 hours of practical work/field work per week.

2. **Courses of Study** – Courses of study indicates pursuance of study in a particular discipline. Every discipline shall offer three categories of courses of study, viz. **Discipline Specific Core courses (DSCs), Discipline Specific Electives (DSEs) and Generic Electives (GEs).**

a. **Discipline Specific Core (DSC):** Discipline Specific Core is a course of study, which should be pursued by a student as a mandatory requirement of his/her programme of study. DSCs shall be the core credit courses of that particular discipline which will be appropriately graded and arranged across the semesters of study, being undertaken by the student, with multiple exit options as per NEP.

b. **Discipline Specific Elective (DSE):** The Discipline Specific Electives (DSEs) shall be a pool of credit courses of that particular discipline (single discipline programme of study) or those disciplines (multidisciplinary programme of study), as the case may be, which a student chooses to study from his/her particular discipline(s). There shall be a pool of DSEs from which a student may choose a course of study.

c. **Generic Elective (GE):** Generic Electives shall be a pool of courses which is meant to provide multidisciplinary or interdisciplinary education to students. GEs shall consist of a pool of courses offered by various disciplines of study in groups from which a student can choose.

d. **Co-Curricular Course [Ability Enhancement Course (AEC) & Multidisciplinary Course (MDC)] & Vocational Course [Skill Enhancement Course (SEC) & Value Addition Course (VAC)]:** These two courses shall be a pool of courses offered by all the Departments in groups of odd and even semesters from which students can choose. A student who desires to make Academic Project/ Entrepreneurship as Minor has to pick the appropriate combination of courses of GE, SEC, VAC, & Internship /Apprenticeship /Project /Community Outreach (IAPC) which shall be offered in the form of various modules as specified in the scheme of studies. Apart from this if they want to do online courses as Vocational Course then the university will provide these courses at the beginning of every semester.

i. **Co-Curricular Courses** are the courses based upon the content that leads to knowledge enhancement through various areas of study. They are Language and Literature and Environmental Science and Sustainable Development which will be mandatory for all disciplines. and skill-based courses in all disciplines and are aimed at providing hands-on-training, competencies, skills, etc. Thus this course is design concerning both AEC & MDC from a pool of courses designed to provide skill and multidisciplinary based instruction.

ii. **VC courses** are value-based courses which are meant to inculcate ethics, culture, constitutional values, soft skills, sports education and such similar values to students which will help in all round development of students. Thus, this course is design concerning both SEC & VAC from a pool of courses designed to provide skill and value-added based instruction.

3. Apprenticeship /Internship/ Project/ Community Outreach / MOOC (AIPCM)

a. **Apprenticeship /Field Study/ Minor Project/ MOOC-** Apprenticeship/Field Study/ Minor Project of two weeks duration at the third semester followed by a Viva-Voce has been provided as Vocational Course to enable the students to have hands on experience in real life business situations and will try to help, uplift and support those who are deprived of certain services and rights. This will be forming a part of third semester. For MOOC and online courses as Vocational Course, the university will provide these courses list at the beginning of every semester.

Apprenticeship/Field Study/ Minor Project of two weeks duration at the fourth semester followed by a Viva-Voce to enable the students to have hands on experience in real life business situations and will try to help, uplift and support those who are deprived of certain services and rights. This will be form a part of fourth semester. For MOOC and online courses as Vocational Course, the university will provide these courses list at the beginning of every semester.

b. **Summer Training/ Project/ Community Outreach/ MOOC**: Summer Internship of two weeks duration after completion of the fourth semester, followed by Viva-Voce examination during the fifth semester has been provided as Vocational Course to enable the students to have hands on experience in real life business situations, and will try to help, uplift and support those who are deprived of certain services and rights. This will be form a part of fourth semester. For MOOC and online courses as Vocational Course, the university will provide these courses list at the beginning of every semester

4. Research Project Report

In the 6th semester, candidates will have to submit a Research Project Report on a problem/topic assigned by the School of Management, BBD University under the supervision of a core faculty member of the department.

The student will submit two hard bound copies of the report to the Head of the BBA- Business Analytics program or to the Dean, School of Management. The number of pages in the report will be 75 or more. The report should be hard bound and typed in A-4 size paper in standard font size of 12 and double spacing. The evaluation will be based on the report writing, and viva-voice. The students are also required to make a brief presentation of the report. The evaluation will be based on the report writing, and viva-voice.

5. **General Proficiency:** In first four semester, students will be assessed out of 100 marks based on co-curricular activities, initiatives and general discipline as part of General Proficiency with one Credit.

ELECTIVES:

In order to achieve the spirit of NEP and LOCF under CBCS and to empower the students, large number of optional courses under Discipline Specific Course (DSC), Discipline Specific Elective (DSE), Generic Elective (GE), Co-Curricular Course (CC) and Vocational Course (VC) have been included in the structure.

BBA- Business Analytics course structure has Twenty-eight Core Papers as DSC including eight Practical Labs, Six DSE courses, Eight Generic Elective Courses placed one paper for each semesters; Four Co-Curricular Courses placed in first four semesters and Five VC Courses are placed in the first five semester along with One Lab in each semester for practical implementation of Business Analytics and Data science software. In all, Twenty -eight optional courses under two sets of course types (DSE and GE) have been developed with an idea to encompass all possible domains of knowledge and skills facilitating interface with various sections of the society so that a student can have a wide choice of courses to have a better living and to lead a meaningful and contented life. Keeping in view the needs of the students, Vocational courses (VCs) have been designed in a manner that provides relevant knowledge and skills.

Four Co-Curricular Course (CC) and 5 Vocational Course (VC) are included in the first five semesters which the student has to opt from the courses offered by other schools of BBD University.

STUDENTS ENTRY AND EXIT:

Students exiting the Programme after securing 48 credits will be awarded a UG Certificate, subject to secure additional 4 credits in work based vocational courses offered during summer internship. Students exiting the Programme after securing 96 credits will be awarded a Diploma, subject to secure an additional 4 credits in work based vocational courses offered during summer internship. A student wants to entry in the programme at any year suppose in the second year must have substantial credit (48 credit in this case) in the previous year of this programme. After the successfully completion of the third year (having 144 credits) get the BBA-Business Analytics degree. In the fourth year the students have the option to choose BBA- Business Analytics with Internship or BBA- Business Analytics Honours in Research. Honours with Research choice is given to those students who had attain more than 75% marks at the third-year level.

ELIGIBILITY CRITERIA:

As per the Babu Banarasi Das University norms.

ASSESSMENT AND EVALUATION OF COURSES:

Assessment and evaluation of courses will be as per Babu Banarasi Das University guidelines.

CREDIT SYSTEM

Credit system will be followed during the entire four-year course curriculum. One credit will be equivalent to 15 contact hours for theory paper while one credit will be equivalent to 30 contact hours for lab.

PROGRAM OBJECTIVES (POS) OF BBA- BUSINESS ANALYTICS

(IN COLLABORATION WITH IBM)

PO1	Management Knowledge: Students will acquire adequate understanding about management concepts and principles.
PO2	Business Analysis: Use the business and management knowledge gained to analyse the business problems and come up with viable solutions.
PO3	Communication: To impart knowledge to the students towards Business Communication for effective and Professional business management
PO4	Entrepreneurship: Build the entrepreneurship acumen.
PO5	Individual and Team Work: To inculcate the ability for leading a team and develop group behaviour in achievement of individual, group and organizational goals.
PO6	Regulatory Framework: To understand and discuss the broad legal and regulatory framework governing business activities.
PO7	Ethics: To recognize and solve business problems in an ethical manner for continuous development of business venture.
PO8	Technology Orientation: To develop competency in the use of technology in modern organizational operations.
PO9	Conduct Investigations: To stimulate an interest in research and its applications to find solutions for business problems.
PO10	The Business Leader and Society: To provide an environment that challenges the students' mind through competitive education which emphasizes on inculcating values, thus transforming them into socially responsible managers and business leaders.
PO11	Environment and Sustainability: Understand the relevant issues of environmental concern and sustainable development.
PO12	Life Long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes.

PROGRAM SPECIFIC OBJECTIVES (PSOs) OF BBA- BUSINESS ANALYTICS

(IN COLLABORATION WITH IBM)

PSO1	To prepare students to excel in industry /profession or postgraduate programmes through quality education.
PSO2	To inculcate analytical skills in students so that they can critically analyses the business situations.

Course Articulation Matrix of DSC, DSE and GE

SUBJECT	SUBJECT CODE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
Data visualization with Python	NBBAB5101	1.0	1.5	1.0	1.8	1.0	1.0	1.0	2.3	1.3	1.8	1.0	1.0	2.0	3.0
Data Visualization with Python -Lab	NBBAB5102	1.0	1.5	1.0	1.5	1.0		1.0	2.5	1.5	1.5	1.0	1.0	2.0	2.5
Quantitative Techniques for Business Analytics I	NBBAB5103	1.0	1.8	1.0	1.0	1.0	1.0	1.0	3.0	1.0	2.0	1.0	2.0	2.3	3.0
Business Economics –I	NBBAB5104	2.0	1.3	1.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0	1.5	1.0	2.0	2.0
Business Communication	NGE54501	2.0	1.0	3.0	2.0	1.0	1.0	1.3	3.0	1.0	2.0	1.0	1.0	2.0	2.0
Essentials of IT	NGE54502	1.8	1.8	1.0	1.8	1.3	1.0	1.0	2.8	1.0	1.3	1.7	1.0	1.8	1.8
Big Data Fundamentals	NBBAB5201	1.0	2.0	2.0	1.5	1.0	1.0	1.5	2.0	1.0	1.0	1.0	1.3	2.0	2.5
Big Data Fundamentals-Lab	NBBAB5202	1.0	2.0		2.0	1.0		1.0	2.5	1.0	1.0		1.0	2.0	3.0
Introduction to Business Analytics using MS Excel	NBBAB5203	2.0	3.0	1.3	3.0	1.0	2.0	1.0	2.0	1.0	2.0	1.0	3.0	2.8	2.8
Fundamentals of Accounting	NBBAB5204	2.0	2.3	1.3	2.0	1.0	2.0	1.0	1.0	1.8	1.3	1.0	2.0	2.0	3.0
Organization Behaviour and Principles of Management	NGE54503	2.3	2.0	1.3	2.3	1.8	1.3	1.8	2.0	1.8	1.0	1.0	2.0	3.0	3.0
Business Economics –II	NGE54504	3.0	3.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	1.0	2.0	3.0	2.3
Descriptive Analytics	NBBAB5301	1.0	2.8		2.0	1.8	2.0		2.8	1.8	1.8		2.0	2.8	3.0
Descriptive Analytics-Lab	NBBAB5302	1.0	3.0		2.0	2.0	2.0		3.0	2.0	2.0		2.0	3.0	3.0
Quantitative Techniques for Business Analytics II	NBBAB5303	1.3	3.0		2.0	2.0	2.0		3.0	2.0	2.0		2.0	3.0	3.0
Marketing Research	NBBAB5304	2.0	1.5	1.0	1.0			2.0	2.0	3.0	2.0		2.0	2.0	3.0
Business Environment	NGE54505	1.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	2.3	2.0	3.0	2.0
Business Law	NGE54506	1.3	2.0	1.0	2.0	1.0	3.0	3.0		1.8	2.0	1.3	1.5	3.0	2.0
Predictive Analytics	NBBAB5401	2.0	1.7	1.3	2.0	1.0	1.0	1.0	3.0	2.0	2.0	1.0	2.0	2.0	3.0
Predictive Analytics-Lab	NBBAB5402	2.0	1.5	1.0	2.0	1.0	1.0		3.0	2.0	2.0		2.0	3.0	3.0
Management Information System & E Commerce	NBBAB5403	2.0	2.0	2.8	2.0	2.0	1.0	1.0	3.0	1.0	2.0	1.0	2.0	2.0	3.0
Business Organization	NBBAB5404	2.8	1.0	2.0	2.0	3.0	2.0	2.0	2.0	1.8	1.0	1.0	2.0	2.0	2.0
Financial Management	NGE54507	3.0	1.3	1.0	1.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0
Financial Analysis and Decision	NGE54508	3.0	1.8	1.0	1.0	2.0	1.0	1.0	1.0	1.3	1.5	1.0	2.0	2.0	2.0
Sectoral Functional Analytics	NBBAB5501	2.0	2.3	1.3	2.0	1.5	2.0	2.0	2.7	2.0	2.0	1.5	2.0	3.0	3.0
Sectoral Functional Analytics-Lab	NBBAB5502	1.0	3.0	1.0	2.0		2.0	1.0	3.0	2.0	2.0	1.0	2.0	3.0	3.0
Enterprise Design Thinking	NBBAB5503	3.0	2.3	1.3	1.0	2.0	1.3	1.0	1.0	1.5	1.5	1.0	2.0	2.0	2.0
Business Policy and Strategy	NBBAB5504	1.0	2.0	2.0	2.0	1.8	1.8	2.0	2.0	2.0	2.0	1.5	2.0	2.0	3.0
Data Analysis using SPSS	NDSE54501	1.0	3.0	2.0	2.0	1.0	1.0	1.0	3.0	1.3	2.0	1.5	2.3	2.0	3.0
Data Warehousing and Mining	NDSE54502	1.0	2.0	2.0	2.0	1.8	1.8	2.0	2.0	2.0	2.0	1.5	2.0	2.0	3.0
Marketing Management	NGE54509	2.0		2.0	1.0	2.0	2.0			2.0	3.0	1.0	2.0	3.0	2.0
Social Media Marketing	NGE54510	2.0	1.0	2.0	1.0	2.0	2.0	1.0	1.0	2.0	3.0	1.0	2.0	3.0	2.0
Data Privacy and Security	NBBAB5601	1.0	3.0		2.0	1.0	3.0	3.0	2.0		1.0		2.0	3.0	3.0
Data Privacy and Security -Lab	NBBAB5602	1.0	3.0		2.0	1.0	3.0	3.0	2.0		1.0		2.0	3.0	3.0
Database Management System	NBBAB5603	2.0	1.0	2.0	3.0	2.0	1.0	1.0	3.0	2.0	2.0		3.0	3.0	3.0

Human Resource Management	NBBAB5604	2.0	1.5	2.0	1.0	2.0		1.7	2.0	1.0	2.3		2.7	3.0	3.0
Business Data Management	NDSE54503	2.0	1.0	2.0	3.0	2.0	1.0	1.0	3.0	2.0	2.0		3.0	3.0	3.0
Research Methodology	NDSE54504	1.0	3.0	1.0	2.0	1.0	3.0	3.0	2.0	1.0	1.0	1.0	2.0	3.0	3.0
Project Management	NGE54511	2.5	1.0	3.0	1.5	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
Supply Chain Management	NGE54512	2.5	1.0	3.0	1.5	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
Business Intelligence	NBBAB5701	1.0	1.8	1.0	1.0	1.0	1.0	1.0	3.0	1.0	2.0	1.0	2.0	2.3	3.0
Business Intelligence-Lab	NBBAB5702	1.0	2.0		1.0	1.0			3.0	1.0	2.0	1.0	2.0	2.5	3.0
System Analysis and Designing	NDSE54505	1.0	1.3	1.0	2.0	1.0	1.0	1.0	3.0	2.0	2.0	1.0	2.0	3.0	2.0
Operating System	NDSE54506	2.0	1.0	2.0	3.0	2.0	1.0	1.0	3.0	2.0	2.0		3.0	3.0	3.0
Management Accounting	NDSE54507	2.0	2.3	1.3	2.0	1.0	2.0	1.0	1.0	1.8	1.3	1.0	2.0	2.0	3.0
Securities Analysis & Portfolio Management	NDSE54508	2.0	1.0	1.0	1.0	1.3	2.3	1.0	1.0	1.0	1.0	2.0	3.0	2.0	2.0
Operation Research	NGE54513	1.8	1.5	1.0	1.0		1.0	1.7	1.8	3.0	2.0		2.0	2.0	3.0
Production and Operations Management	NGE54514	1.0	2.8		2.0	1.8	2.0		2.8	1.8	1.8		2.0	2.8	3.0
Planning Analytics	NBBAB5801	2.0	2.0	1.8	2.0	1.0	1.0	2.0	3.0	1.0	1.0	1.0	2.0	3.0	3.0
Planning Analytics-Lab	NBBAB5802	2.0	2.0	2.0	2.0		1.0	2.0	3.0	1.0	1.0		2.0	3.0	3.0
Artificial Intelligence	NDSE54509	2.0	2.0	2.8	2.0	2.0	1.0	1.0	3.0	1.0	2.0	1.0	2.0	2.0	3.0
Data Visualization and Machine Learning	NDSE54510	1.0	3.0	1.0	3.0		1.0	1.0	3.0	1.0	1.0	1.0	2.0	3.0	3.0
Marketing of Services	NDSE54511	1.8		1.8	1.0	2.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	2.0	2.0
Product and Brand Management	NDSE54512	2.0		1.0		1.0	2.0	1.0	1.0	2.0	1.0	1.7	2.0	2.0	2.0
Entrepreneurship Development	NGE54515	2.0		1.5	3.0	2.0	1.0	2.0		1.3	1.0		2.0	2.0	2.0
Corporate Governance, Values & Ethics	NGE54516	1.0		1.0	1.0	1.0	2.0	3.0		1.3	1.0		2.0	2.0	2.0

Course Articulation Matrix of CC and VC

SUBJECT	SUBJECT CODE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
Managing Organizational Diversity	NSMVC5101	2.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	2.0	1.0	2.0	2.0	2.0
Logistics Management	NSMVC5201	3.0	1.0	1.0	2.0	1.0	1.0	1.0		1.0	2.0	2.0	2.0	2.0	2.0
Creativity and Design Thinking	NSMVC5301	2.0	1.0	1.0	1.0	1.3	2.3	1.0	1.0	1.0	1.0	2.0	3.0	2.0	2.0
Technical Charts and Analysis for Stock Markets	NSMVC5401	2.0	2.0	1.0	2.0	2.0	3.0	2.0	2.3	1.0	1.0		2.0	2.0	2.0
Digital Marketing	NSMVC5402	2.0	1.0	2.0	1.0	1.3	1.0	1.0	2.0	1.0	1.0	2.0	3.0	2.0	3.0
Entrepreneurial Finance	NSMVC5501	2.0	1.0	2.0	2.5	1.8	1.0	1.0			1.3	1.3	2.0	2.0	2.0
Financial Literacy	NSMCC5301	2.0	1.3	1.0	2.0		1.8		1.0	1.0	1.0	1.0	2.0	2.0	2.0
Leadership & Personality Development	NSMCC5401	3.0	1.0	2.0	3.0	2.0	1.0	2.0	2.0		3.0		2.0	2.0	2.0

Course Structure

Sem	Major Core Course (DSC)	Major Core Course (DSC)-Lab	Major Elective Course (DSE)	Minor Course (GE)	Co-Curricular Course (CC)	Vocational Course (VC)	Apprenticeship/ Internship/ Project/ Community Outreach/ MOOC (AIPCM)	Major Dissertation/ Internship	GP/ Seminar	Total Credits
	4 Credits	**2 Credits**	**4 Credits**	**4 Credits**	**3 Credits**	**2 Credits**	**2 Credits**	**6 Credits**	**1 Credit**	
I	DSC1 DSC3 DSC4	DSC2		GE1	CC1	VC1			1	24
II	DSC5 DSC7 DSC8	DSC6		GE2	CC2	VC2			1	24
III	DSC9 DSC11 DSC12	DSC10		GE3	CC3	VC4 Or AIPCM			1	24
IV	DSC13 DSC15 DSC16	DSC14		GE4	CC4	VC4 Or AIPCM			1	24
V	DSC17 DSC19 DSC20	DSC18	DSE1	GE5		VC5 Or AIPCM				24
VI	DSC21 DSC23 DSC24	DSC22	DSE2	GE6			Project/ Dissertation 2 Credit			24
VII	DSC25	DSC26	Two DSE and One GE DSE3 DSE4 GE7					Dissertation/ Internship		24
VIII	DSC27	DSC28	Two DSE and One GE DSE5 DSE6 GE8					Dissertation/ Internship		24

BBA- Business Analytics (in collaboration with IBM)

Evaluation Scheme

SEMESTER I										
Course Category	**Theory/ Practical**	**Course Code**	**Course Title**	**Contact Hours**			**Evaluation Scheme**			**Credits**
				L	**T**	**P**	**CIA**	**ESE**	**Total**	
DSC-1	Theory	NBBAB5101	Data Visualization with Python	3	0	1	40	60	100	4
DSC-2	Practical	NBBAB5102	Data Visualization with Python -Lab	0	0	2	40	60	100	2
DSC-3	Theory	NBBAB5103	Quantitative Techniques for Business Analytics I	3	1	0	40	60	100	4
DSC-4	Theory	NBBAB5104	Business Economics –I	3	1	0	40	60	100	4
GE-1	Theory		Generic Elective	3	1	0	40	60	100	4
CC-1#	Theory			2	1	0	40	60	100	3
VC-1*	Theory			2	0	0	40	60	100	2
	Practical	NGP5101	General Proficiency				100		100	1
TOTAL									**800**	**24**

University offers one course for the first semester either **Communicative English** or **Environmental Studies** under the category of CC-1

One Generic Elective (GE-1) can be opted from

GE-1	**Code**	**Course Title**
	NGE54501	Business Communication
	NGE54502	Essentials of IT

* VC- 1 can be opted from

VC-1	**Code**	**Course Title**
	NSMVC5101	Managing Organizational Diversity

List of VC courses offered by other schools will be provided centrally

BBA- Business Analytics (in collaboration with IBM)

Course Structure

SEMESTER II										
Course Category	**Theory/ Practical**	**Course Code**	**Course Title**	**Contact Hours**			**Evaluation Scheme**			**Credits**
				L	**T**	**P**	**CIA**	**ESE**	**Total**	
DSC-5	Theory	NBBAB5201	Big Data Fundamentals	3	0	1	40	60	100	4
DSC-6	Practical	NBBAB5202	Big Data Fundamentals-Lab	0	0	2	40	60	100	2
DSC-7	Theory	NBBAB5203	Introduction to Business Analytics using MS Excel	2	0	2	40	60	100	4
DSC-8	Theory	NBBAB5204	Fundamentals of Accounting	3	1	0	40	60	100	4
GE-2	Theory		Generic Elective	3	1	0	40	60	100	4
CC-2#	Theory			2	1	0	40	60	100	3
VC-2*	Theory			2	0	0	40	60	100	2
	Practical	NGP5201	General Proficiency				100		100	1
TOTAL									**800**	**24**

University offers one course for the second semester either **Communicative English** or **Environmental Studies** under the category of CC-2 (Other than the course taught in semester one)

One Generic Elective (GE-2) can be opted from

GE-2	**Code**	**Course Title**
	NGE54503	Organization Behaviour and Principles of Management
	NGE54504	Business Economics –II

* VC- 2 can be opted from

VC-2	**Code**	**Course Title**
	NSMVC5201	Logistics Management

List of VC courses offered by other schools will be provided centrally

Note: Students who wish to exit after securing 48 credits in the first two semesters will have to undergo an additional 4-credit work-based internship during the summer term in order to get a UG Certificate.

BBA- Business Analytics (in collaboration with IBM)

Course Structure

SEMESTER III										
Course Category	**Theory/ Practical**	**Course Code**	**Course Title**	**Contact Hours**			**Evaluation Scheme**			**Credits**
				L	**T**	**P**	**CIA**	**ESE**	**Total**	
DSC-9	Theory	NBBAB5301	Descriptive Analytics	3	0	1	40	60	100	4
DSC-10	Practical	NBBAB5302	Descriptive Analytics-Lab	0	0	2	40	60	100	2
DSC-11	Theory	NBBAB5303	Quantitative Techniques for Business Analytics II	3	1	0	40	60	100	4
DSC-12	Theory	NBBAB5304	Marketing Research	4	0	0	40	60	100	4
GE-3	Theory		Generic Elective	3	1	0	40	60	100	4
CC-3#	Theory			2	1	0	40	60	100	3
VC-3*	Theory/ Practical		VC or AIPCM	0	0	2	40	60	100	2
	Practical	NGP5301	General Proficiency				100		100	1
TOTAL									**800**	**24**

One Generic Elective (GE-3) can be opted from

	Code	**Course Title**
GE-3	NGE54505	Business Environment
	NGE54506	Business Law

CC- 3 can be opted from

	Code	**Course Title**
CC-3	NSMCC5301	Financial Literacy

List of CC courses offered by other schools will be provided centrally

* VC- 3 can be opted from

	Code	**Course Title**
VC-3	NSMVC5301	Creativity and Design Thinking

List of VC courses offered by other schools will be provided centrally

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Course Structure

SEMESTER IV										
Course Category	**Theory/ Practical**	**Course Code**	**Course Title**	**Contact Hours**			**Evaluation Scheme**			**Credits**
				L	**T**	**P**	**CIA**	**ESE**	**Total**	
DSC-13	Theory	NBBAB5401	Predictive Analytics	3	0	1	40	60	100	4
DSC-14	Practical	NBBAB5402	Predictive Analytics-Lab	0	0	2	40	60	100	2
DSC-15	Theory	NBBAB5403	Management Information System & E Commerce	3	0	1	40	60	100	4
DSC-16	Theory	NBBAB5404	Business Organization	3	1	0	40	60	100	4
GE-4	Theory		Generic Elective	3	1	0	40	60	100	4
CC-4#	Theory			2	1	0	40	60	100	3
VC-4*	Theory / Practical	NGP5401	VC or AIPCM	0	0	2	40	60	100	2
	Practical		General Proficiency				100		100	1
TOTAL									**800**	**24**

One Generic Elective (GE-4) can be opted from

GE-4	**Code**	**Course Title**
	NGE54507	Financial Management
	NGE54508	Financial Analysis and Decision

CC- 4 can be opted from

CC-4	**Code**	**Course Title**
	NSMCC5401	Leadership & Personality Development

List of CC courses offered by other schools will be provided centrally

* VC- 4 can be opted from

VC-4	**Code**	**Course Title**
	NSMVC5401	Technical Charts and Analysis for Stock Markets
	NSMVC5402	Digital Marketing

List of VC courses offered by other schools will be provided centrally

Note: Students who wish to exit after securing 96 credits in the first four semesters will have to undergo an additional 4-credit work-based internship during the summer term in order to get a UG Diploma.

BBA- Business Analytics (in collaboration with IBM)

Course Structure

SEMESTER V										
Course Category	**Theory/ Practical**	**Course Code**	**Course Title**	**Contact Hours**			**Evaluation Scheme**			**Credits**
				L	**T**	**P**	**CIA**	**ESE**	**Total**	
DSC-17	Theory	NBBAB5501	Sectoral Functional Analytics	3	0	1	40	60	100	4
DSC-18	Practical	NBBAB5502	Sectoral Functional Analytics-Lab	0	0	2	40	60	100	2
DSC-19	Theory	NBBAB5503	Enterprise Design Thinking	3	1	0	40	60	100	4
DSC-20	Theory	NBBAB5504	Business Policy and Strategy	3	1	0	40	60	100	4
DSE-1	Theory		Discipline Specific Elective	3	1	0	40	60	100	4
GE-5	Theory		Generic Elective	3	1	0	40	60	100	4
VC-5*	Theory/ Practical		VC or AIPCM	0	0	2	40	60	100	2
TOTAL									**700**	**24**

One Discipline Specific Elective (DSE-1) can be opted from

	Code	**Course Title**
DSE-1	NDSE54501	Data Analysis using SPSS
	NDSE54502	Data Warehousing and Mining

One Generic Electives (GE-5) can be opted from

	Code	**Course Title**
GE-5	NGE54509	Marketing Management
	NGE54510	Social Media Marketing

* VC- 5 can be opted from

	Code	**Course Title**
VC-5	NSMVC5501	Entrepreneurial Finance

List of VC courses offered by other schools will be provided centrally

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Course Structure

SEMESTER VI										
Course Category	**Theory/ Practical**	**Course Code**	**Course Title**	**Contact Hours**			**Evaluation Scheme**			**Credits**
				L	**T**	**P**	**CIA**	**ESE**	**Total**	
DSC-21	Theory	NBBAB5601	Data Privacy and Security	3	0	1	40	60	100	4
DSC-22	Practical	NBBAB5602	Data Privacy and Security -Lab	0	0	2	40	60	100	2
DSC-23	Theory	NBBAB5603	Database Management System	3	0	1	40	60	100	4
DSC-24	Theory	NBBAB5604	Human Resource Management	3	1	0	40	60	100	4
DSE-2	Theory		Discipline Specific Elective	3	0	1	40	60	100	4
GE-6	Theory		Generic Elective	3	1	0	40	60	100	4
VC-6	Practical	NBBAB5605	Research Project Report				40	60	100	2
TOTAL									**700**	**24**

One Discipline Specific Elective (DSE-2) can be opted from

	Code	**Course Title**
DSE-2	NDSE54503	Business Data Management
	NDSE54504	Research Methodology*

One Generic Electives (GE-6) can be opted from

	Code	**Course Title**
GE-6	NGE54511	Project Management
	NGE54512	Supply Chain Management

* If the student opts for Honours with Research then Research Methodology in sixth semester will be a compulsory course.

Note: Students who wish to exit after securing 144 credits in the first six semesters will be awarded a UG Degree in BBA- Business Analytics.

BBA- Business Analytics (in collaboration with IBM)

Course Structure

SEMESTER VII										
Course Category	**Theory/ Practical**	**Course Code**	**Course Title**	**Contact Hours**			**Evaluation Scheme**			**Credits**
				L	**T**	**P**	**CIA**	**ESE**	**Total**	
DSC-25	Theory	NBBAB5701	Business Intelligence	3	0	1	40	60	100	4
DSC-26	Practical	NBBAB5702	Business Intelligence-Lab	0	0	2	40	60	100	2
DSE-3	Theory		Discipline Specific Elective	3	1	0	40	60	100	4
DSE-4	Theory		Discipline Specific Elective	3	1	0	40	60	100	4
GE-7	Theory		Generic Elective	3	1	0	40	60	100	4
	Practical	NBBAB5703	Dissertation / Internship Report				80	120	200	6
TOTAL									**700**	**24**

One Discipline Specific Electives (DSE-3) can be opted from

	Code	**Course Title**
DSE-3	NDSE54505	System Analysis and Designing
	NDSE54506	Operating System

One Discipline Specific Electives (DSE-4) can be opted from

	Code	**Course Title**
DSE-4	NDSE54507	Management Accounting
	NDSE54508	Securities Analysis & Portfolio Management

One Generic Elective (GE-7) can be opted from

	Code	**Course Title**
GE-7	NGE54513	Operation Research
	NGE54514	Production and Operations Management

BBA- Business Analytics (in collaboration with IBM)

Course Structure

SEMESTER VIII										
Course Category	**Theory/ Practical**	**Course Code**	**Course Title**	**Contact Hours**			**Evaluation Scheme**			**Credits**
				L	**T**	**P**	**CIA**	**ESE**	**Total**	
DSC-27	Theory	NBBAB5801	Planning Analytics	3	0	1	40	60	100	4
DSC-28	Practical	NBBAB5802	Planning Analytics-Lab	0	0	2	40	60	100	2
DSE-5	Theory		Discipline Specific Elective	3	1	0	40	60	100	4
DSE-6	Theory		Discipline Specific Elective	3	1	0	40	60	100	4
GE-8	Theory		Generic Elective	3	1	0	40	60	100	4
	Practical	NBBAB5803	Dissertation / Internship Report				80	120	200	6
TOTAL									**700**	**24**

One Discipline Specific Electives (DSE-5) can be opted from

	Code	**Course Title**
DSE-5	NDSE54509	Artificial Intelligence
	NDSE54510	Data Visualization and Machine Learning

One Discipline Specific Electives (DSE-6) can be opted from

	Code	**Course Title**
DSE-6	NDSE54511	Marketing of Services
	NDSE54512	Product and Brand Management

One Generic Elective (GE-8) can be opted from

	Code	**Course Title**
GE-8	NGE54515	Entrepreneurship Development
	NGE54516	Corporate Governance, Values & Ethics

Note: Students who exit after securing 192 credits in the overall program will be awarded a UG Degree of BBA- Business Analytics with Honours in Research/ Internship.

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**1**	**Semester**		**1**	
Course Name	**Data visualization with Python**				
Code	**NBBAB5101**				
Course Type	**Discipline Specific Course**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Pass Certificate of 10+2**	**3**	**0**	**1**	**4**
Course Objectives	To familiarize students with: ❖ IDE of python ❖ Number of different concepts such as introduction to Data Science including concepts such as Linear Algebra, Bayesian inference, combinatorics, Distributions, Probability and Statistics, Matplotlib, Charts and Graphs. ❖ Data Analysis, Visualization of non-uniform data, Hypothesis and Gradient Descent, Data Clustering and so much more.				
Course Outcomes					
CO1	Remembering and understanding python with crash course.				
CO2	Applying Mathematical concepts like: Algebra, probability etc.				
CO3	Analysing mathematical foundation of Data science. Able to analyses graphical visualization for your data.				
CO4	Evaluating and creating Maps and advance Visualization. Uber NYC, Hotel booking, Covid-19, Amazon customer data analysis which are the most demanded analysis to highlight your resume.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Introduction to PYTHON** Sample Scripts with Loops in python, Data Visualization Understanding Data Visualization, history and, architecture of Matplotlib Data Analysis Understanding Data Analysis, Series and Data frame, Exploring 1-D data, Exploring 2-D data, Bubble chart representation, Data Munging.	**15**	**1**
2	**Module II: Linear Algebra** What are vectors? various operations of vectors, Understanding Matrices, Advance Statistics, Single set of data, Concept of Central Tendencies, Dispersion, Probability, Probability concept, Normal Distribution, Central Limit Theorem, Bayesian inference, Combinatorics, Distributions.	**15**	**2**
3	**Module III: Visualization with Matplotlib library** **Basic plots:** Line Plots, Bar plot, Histograms, Scatter plot, pie chart, Area Plots, Pie Charts, Box Plots, Bubble Plots, Waffle Charts, Word Clouds, Pyplot in Matplotlib: Line Plot, Histogram, Scatter, 3D Plot, Image, Contour, and Polar, Multiple Subplot: Create multiple subplots, add title to subplots, set single main title for all subplots, turn off the axes for subplots, Advance Data Visualization, Visualizing the content of a 2D array, Adding a colormap legend to figure, Visualization nonuniform 2D data, Visualizing contour lines, Polar charts, Plotting log charts for research, **Tableau, Introduction and use Plotly**	**15**	**3**

4	**Module IV: Power BI and Tableau** Different types of tools or libraries used in Data visualization and concepts of power BI, visualize with the help of it, some basics of Tableau	**15**	**4**

Suggested Readings

1. "Matplotlib 3.0 Cookbook" by Srinivasa Rao Poladi.
2. "Data Visualization in Python" by David Landup.

Online Resources

1. https://cognitiveclass.ai/courses/data-visualization-python#about-course

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1		2		1			1	3	2	1		1	2	3
CO2	1	1		2	1			2	1	2		1	2	3
CO3		1	1	2		1		2	1	2		1	2	
CO4		2		2				2	1	2	1	1	2	
Avg	**1**	**1.5**	**1**	**1.75**	**1**	**1**	**1**	**2.25**	**1.25**	**1.75**	**1**	**1**	**2**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**1**	**Semester**		**1**	
Course Name	**Data Visualization with Python -Lab**				
Code	**NBBAB5102**				
Course Type	**Discipline Specific Course- Lab**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Pass Certificate of 10+2**	**0**	**0**	**2**	**2**
Course Objectives	To familiarize students with: ❖ How visualization helps in business to provide a solution to industries using real case studies and the different visualization tools. ❖ How library help in visualization and summarizing reports for analysis.				
Course Outcomes					
CO1	Understand concepts and methods of Data visualization.				
CO2	Analysing and Evaluating Data visualization tool for managing and Analysing data.				

Module	Course Content	Contact Hrs.	Mapped CO
1	**Module I:** Create a report from a personal data source, Which type of tools are used for different types of charts, graphs etc Will learn about the basics of power BI and apply on data Make a data visualization report and a pie chart report Using the power BI try to visualize the data of uber-trip analysis	**30**	**1**
2	**Module II:** Using the power BI try to visualize the amazon customer analysis Creating Bins and Distributions using Power BI Working and exploring the Bar graph, scatter graph in Power BI Develop a dashboard using Power BI using custom datasets Using the power BI analyse the Bank churn data	**30**	**2**

Suggested Readings

1. IBM Cognos Business Intelligence V10.1 Handbook, An IBM Redbooks publication
2. IBM Cognos Business Intelligence by O'Reilly
3. A Practical Guide to Self-Service Data Analytics with Excel 2016 and Power BI

Online Resources

1. https://cognitiveclass.ai/courses/data-visualization-python#about-course

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1		2	1	1			1	3	2	1		1	2	2
CO2	1	1		2	1			2	1	2	1	1	2	3
Avg	**1**	**1.5**	**1**	**1.5**	**1**		**1**	**2.5**	**1.5**	**1.5**	**1**	**1**	**2**	**2.5**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**1**	**Semester**		**1**	
Course Name	**Quantitative Techniques for Business Analytics I**				
Code	**NBBAB5103**				
Course Type	**Discipline Specific Course**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Pass Certificate of 10+2**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Quantitative information and mathematical ideas. ❖ Formulation and solution of linear programming problems and understanding Probability and its application in business decisions.				
Course Outcomes					
CO1	Remembering and understanding the basic concept of QAM and its implementation in various business situations.				
CO2	Applying information, both quantitative and qualitative, through sets and Venn diagrams.				
CO3	Analysing and relate decision making through statistical tools and techniques.				
CO4	Evaluating reasoned business decisions through matrices and probability				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Sets and Business Mathematics** Set theory, form of writing a set, subset, equal set, operation on set: complement of a set, union, and intersection. Venn-diagram. Relations and functions - Relations and their types, Functions and their types Diagrammatic and graphical presentation of statistical data: bar diagram, histogram, frequency polygon, frequency curve, ogive curve. Matrices: Types of matrices, algebra of matrices. Solution of equations	**15**	**1**
2	**Module II: Coordinate Geometry** Elements of Coordinate Geometry, Distance between two points, Equation of line, Slope of a line, Area of Triangles, Quadratic Functions, Slope of quadratic function, Polynomials and Arithmetic of Polynomials. Quadratic Functions - Quadratic functions, Minima, maxima, vertex, and slope, Quadratic Equations	**15**	**2**
3	**Module III: Elementary Statistics** Measurement of central tendency: Mean, median, mode, quartile, deciles, and percentile. Measures of dispersion: mean deviation, standard deviation. Business application of statistical tools and techniques. Skewness and Kurtosis.	**15**	**3**
4	**Module IV: Probability, Correlation and Regression** Probability: Definition, addition and multiplication rule, conditional probability, Bayes' theorem, Binomial, Poisson and Normal distribution. Correlation and Regression: Scatter diagram, Karl Pearson's coefficient of correlation, rank correlation, simple linear regression, method of least square.	**15**	**4**

Suggested Readings

1. Tulsian P.C., Business Statistics, S. Chand Publication, New Delhi.
2. Pundir, Mathematical Foundation for Business Administration, Pragati Prakashan.
3. Zameeruddin, Khanna and Bhambri, Business Mathematics, Vikas Publishing.
4. Raghavachari, Mathematics for Management, Tata McGraw Hill, 2004.

Online Resources

1. NPTEL: Introduction to statistics and Data online available at https://www.digimat.in/nptel/courses/video/110107114/L01.html
2. eGyanKosh: Business mathematics available at http://egyankosh.ac.in//handle/123456789/56507

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1		2		1	1			3	1	2		2	3	3
CO2	1	2		1				3	1	2	1	2	2	3
CO3		1	1	1			1	3	1	2		2	2	3
CO4		2	1	1		1	1	3	1	2		2	2	3
Avg	**1**	**1.75**	**1**	**1**	**1**	**1**	**1**	**3**	**1**	**2**	**1**	**2**	**2.25**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**1**	**Semester**		**1**	
Course Name	**Business Economics –I**				
Code	**NBBAB5104**				
Course Type	**Discipline Specific Course**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Pass Certificate of 10+2**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Initial introduction to the topic of economics and business economics. ❖ Demand analysis, its elasticity and forecasting. ❖ Planning and policies of profit.				
Course Outcomes					
CO1	Remembering and understanding the scope of economics and business economics and become familiar with objectives of firm.				
CO2	Applying various methods of demand analysis and demand forecasting.				
CO3	Analysing different market structures and the pricing decisions according to them.				
CO4	Evaluating profit maximization and policies made and planning done to achieve the goal of profit maximization with customer satisfaction.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Introduction** Business Economics: Definition, Nature and Scope of Business Economics and relationship with other subjects. Fundamental Economic Tools-Opportunity cost concept, Incremental concept, Principle of time perspective, discounting principle and Equi-marginal principle. Role of managerial economics in decision making, Role and responsibility of a managerial economist. Objectives of a firm.	**15**	**1**
2	**Module II: Demand Analysis** Elasticity of demand: Concepts, types, measurements of elasticity of demand, implications in decision-making. Demand forecasting: meaning and significance of demand forecasting, methods of demand forecasting, characteristics of a good demand forecasting.	**15**	**2**
3	**Module III: Production and Cost Analysis** Production function, Law of variable proportion and laws of return to scale, Cost concepts and classification of costs. Cost-output relationship: Short run and Long run. Cost curves, Economies and diseconomies of scale. Cost control and reduction.	**15**	**3**
4	**Module IV: Pricing Decision and Profit policies and planning** Pricing decision policies, Pricing Decisions under different market structures: Perfect competition, monopoly, monopolistic competition, oligopoly. Main features of each market structure, price determination and managerial implications. Pricing policies and methods Concept, theories of profit, measurement of profit. Break-even analysis: Concepts, methods of estimation, application in profit planning.	**15**	**4**

Suggested Readings

1. Ahuja, H. L., Business Economics, S. Chand Limited.
2. Mishra and Puri., Business Economics, Himalaya Publishing House.
3. Koutsoyuianni, Modern Micro Economics, Macmillan.

Online Resources

1. eGyanKosh: Business Environment online available at https://egyankosh.ac.in/handle/123456789/2898
2. NPTEL: Introduction to Business environment available at https://onlinecourses.swayam2.ac.in/imb22_mg02/preview

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2	1	1	2		2	1		1		1	1	2	2
CO2	2	2	1	2		2	1		1		1	1	2	2
CO3	2	1	1	2	1	2	1	1	1		2	1	2	2
CO4	2	1	1	2	1	2	1	1	1	1	2	1	2	2
Avg	**2**	**1.25**	**1**	**2**	**1**	**2**	**1**	**1**	**1**	**1**	**1.5**	**1**	**2**	**2**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**1**	**Semester**		**1**	
Course Name	**Business Communication**				
Code	**NGE54501**				
Course Type	**Generic Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Pass Certificate of 10+2**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Professional communication: written and oral. ❖ Aspects of work team communication, electronic communication and business correspondence planning.				
Course Outcomes					
CO1	Remembering and understanding business communication and principles of effective communication: 7C's of communication.				
CO2	Applying effective interpersonal communication skills and utilize constructive negotiation and conflict management skills.				
CO3	Analysing communication technology appropriately and effectively.				
CO4	Evaluating gathered and organized information for a report and plan, proof-read and edits copies of business correspondence.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Understanding Business Communication** Communication: Concept, definition, nature, importance and components of communication. Communication process, directions of communications, networks of communication. Types of communication: formal, informal, verbal, and non-verbal. Barriers to communication. Principles of effective communication: 7C's of communication.	**15**	**1**
2	**Module II: Work Team Communication** Communication in work team: Group communication, Initial group goals, solving group problems: negotiation and conflict, Group Decision Making. Listening skills.	**15**	**2**
3	**Module III: Technology and Communication** Accessing electronic information: internet, internet protocol, browsing and searching the internet. Sharing electronic information: Word processing, MS-Word. E-mail: Effective e-mail practices. Correspondence Planning, drafting, revising. Replies, routine claim letters, adjustment letter, goodwill messages, congratulating messages, thank-you notes, sympathy notes. Persuasive messages: Request.	**15**	**3**
4	**Module IV: Report Writing** Characteristics of business reports, types of reports, purpose of reports. Collecting and analysing data through questionnaire & interviews. Constructing tables, preparing charts and interpreting data. Writing report: planning, drafting, revising, formatting and proof reading.	**15**	**4**

Suggested Readings

1. Kaul A., Business Communication, PHI Learning Pvt. Ltd.
2. Sharma, R.C. and Krishna Mohan, Business Correspondence and Report Writing, Tata McGraw-Hill.
3. Ober Scot, Contemporary Business Communication, Cengage Learning.

Online Resources

1. NPTEL: Role of communication and Data online available at https://www.youtube.com/watch?v=cQruENyLNYI&list=PLbMVogVj5nJSZB8BV29_sPwwkzMTYXpaH
2. NPTEL: Research report writing: Executive summary and Data online available at https://www.youtube.com/watch?v=Xp2PVO3do34&list=PLbMVogVj5nJSZB8BV29_sPwwkzMTYXpaH&index=17

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2	1	3	2	1	1	1		1	2	1	1	2	2
CO2	2		3						1	2		1	2	2
CO3	2		3	2	1	1	1	3	1		1	1	2	2
CO4	2		3				2		1	2	1	1	2	2
Avg	**2**	**1**	**3**	**2**	**1**	**1**	**1.33**	**3**	**1**	**2**	**1**	**1**	**2**	**2**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**1**	**Semester**		**1**	
Course Name	**Essentials of IT**				
Code	**NGE54502**				
Course Type	**Generic Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Pass Certificate of 10+2**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Fundamentals of computer hardware and software. ❖ Advanced concepts such as security, networking, and operating system.				
Course Outcomes					
CO1	Remembering and understanding the basic concepts of computer and its evolution.				
CO2	Applying IT and its other interdisciplinary interfaces.				
CO3	Analysing the concept of operating system and GUI.				
CO4	Evaluating and creating the needs of effectively managing the business by bridging the gap between managerial practices in vogue and Information Technology.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Basics of Computer and evolution** Evolution of computer. Data, Instruction and Information. Characteristics of computers, Various fields of application of computers. Hardware, Software, Human ware and Firmware. Advantages and Limitations of computer. Block diagram of computer, Function of different units of computer. Classification of. Different Generation of computers Types of software: System and Application. Compiler and Interpreter. Generation of language: Machine Level, Assembly, High Level, 4GL. Indian computing Environment, Data Representation: Different Number Systems like Decimal, Binary, Octal and Hexadecimal and their inter conversion: Fixed Point Only. Binary arithmetic: Addition, Subtraction, Multiplication and Division.	**15**	**1**
2	**Module II: Input and Output Devices** Input and Output Devices: Keyboard, Mouse, Joystick, Digitizer, Scanner, MICR, OCR, OMR, Light Pen, Touch Screen, Bar Code Reader, Voice Input Device, Monitor and its type: VGA, SVGA and XGA, Printer and its type: Impact and Non-Impact with example, Plotter. Computer Memory: Primary Memory, ROM and its types: PROM, EPROM, EEPROM, RAM. Secondary memory: SASD, DASD Concept. Magnetic Disks: Floppy disks, Hard disks, Magnetic Tape. Optical disks: CD ROM and its types: CD ROM, CD ROM-R, CD ROM-EO, DVD ROM Flash memory.	**15**	**2**
3	**Module III: Operating System Concept and GUI** Operating System Concept: Introduction to operating system, Function of OS, Types of operating systems PC-software Packages, An Introduction to Disk. Operating system and windows GUI, Other system software. Computer software system, software development process, files design & Report design, Data files types, Master & Transaction file. Data Hierarchy; data file	**15**	**3**

	structure, Use of files in Programming. Introduction to Word processor and Spread Sheets, Creating Presentations Management of data processing systems, Programmes development cycle, Output analysis, Programming Concept, Software Development process.		
4	**Module IV: Concept of Data Communication, Networking and Security** Networking Concepts, Types of networking: LAN, MAN AND WAN. Communication Media. Mode of Transmission: Simplex, Half Duplex, Full Duplex, Analog and Digital Transmission, Synchronous and Asynchronous Transmission. Different Topologies, Concepts related to computer security.	**15**	**4**

Suggested Readings:

1. Leon and Leon, Introduction to Information Technology, Leon Tech World.
2. Microsoft Office-2000 Complete, BPB Publication.
3. Sinha Kr. Pradeep, Sinha Preeti., Foundations of Computing, BPB Publication.

Online Resources

1. eGyanKosh: Introduction to Information technology online available at http://hdl.handle.net/123456789/7382
2. NPTEL: An Introduction to information technology available at https://onlinecourses.nptel.ac.in/noc22_ee49/preview

Course Articulation Matrix

PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	1		2	1			3		1	2	1	2	2
CO2	2	2		2	1			3		1	2	1	2	2
CO3	1	2	1	1	2	1		2					1	1
CO4	2	2	1	2	1		1	3	1	2	1	1	2	2
Avg	**1.75**	**1.75**	**1**	**1.75**	**1.25**	**1**	**1**	**2.75**	**1**	**1.33**	**1.66**	**1**	**1.75**	**1.75**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**1**	**Semester**		**1**	
Course Name	**Managing Organizational Diversity**				
Code	**NSMVC5101**				
Course Type	**VC**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Pass Certificate of 10+2**	**2**	**0**	**0**	**2**
Course Objectives	To familiarize students with: ❖ Understand the concept and importance of diversity in the workplace. ❖ Examine the impact of diversity on organizational culture, productivity, and innovation. ❖ Develop strategies for recruiting, retaining, and promoting diverse talent within organizations. ❖ Understand the global aspects of diversity and its implications for multinational organizations.				
Course Outcomes					
CO1	Understand basic concepts of diversity in the workplace.				
CO2	Describethe impact of diversity on organizational culture, productivity, and innovation.				
CO3	Identify the recruitment and retention strategies for the diverse talent within organizations.				
CO4	Explain global diversity and its implications for multinational organizations.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Introduction to Managing Organizational Diversity:** Understanding the concept of diversity and its significance in the workplace, Benefits, and challenges of managing diversity, Exploring various dimensions of diversity: race, ethnicity, gender, age, religion, etc., Inter-Sectionality and multiple identities, Impact of diversity on organizational performance.	**8**	**1**
2	**Building an Inclusive Culture:** Creating an inclusive work environment, Inclusive leadership and management practices, Development of Inclusive Leadership Practices and Processes, Employee resource groups and affinity networks, Inclusive Organization Design, and Developing cultural intelligence.	**7**	**2**
3	**Recruitment and Retention of Diverse Talent:** Strategies for attracting diverse candidates, Selection processes that minimize bias, Retention strategies for diverse employees, Affirmative action and equal employment opportunity, and Evaluating the effectiveness of diversity initiatives.	**7**	**3**
4	**Global Diversity and Multi-Culturalism:** Cultural differences in a global context, Managing diversity in multinational organizations, Global diversity trends and best practices, Cultural competence and sensitivity, Developing cross-cultural communication skills, Understanding and appreciating cultural differences.	**8**	**4**

Suggested Readings

1. Stefan Kühl: Influencing Organizational Culture: A Very Brief Introduction.
2. Rohini Anand: Leading Global Diversity, Equity, and Inclusion: A Guide for Systemic Change in Multinational Organizations.
3. David A. Thomas and Robin J. Ely: HBR's 10 Must Read on Diversity.

Online Resources

1. https://www.youtube.com/watch?v=dwWtb64XQOk
2. https://www.youtube.com/watch?v=TnhBeaFbHYo&feature=youtu.be

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2		1	1	2		1		1	2		2	2	2
CO2	2	1		1	2			1	1	2	1	2	2	2
CO3	2		1	1	2	1	1		1	2		2	2	2
CO4	2		1	1	2		1		1	2		2	2	2
Avg	**2**	**1**	**1**	**1**	**2**	**1**	**1**	**1**	**1**	**2**	**1**	**2**	**2**	**2**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**1**	**Semester**		**2**	
Course Name	**Big Data Fundamentals**				
Code	**NBBAB5201**				
Course Type	**Discipline Specific Course**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic Knowledge of NBBAB5101**	**3**	**0**	**1**	**4**
Course Objectives	To familiarize students with: ❖ Concepts of the Bigdata and its importance. ❖ Concept of data ingestion and the fundamental concepts and tools of Hadoop.				
Course Outcomes					
CO1	Remembering and understanding the tools required to manage and analyse big data like Hive and pig.				
CO2	Applying various tools of hadoop and recognize their impact in business decisions.				
CO3	Analysing real-world problems in decision support.				
CO4	Evaluating and creating fundamental techniques and principles in achieving big data analytics with scalability and streaming capability.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Introduction** Explain what Big Data is, Describe the complete open-source Hadoop ecosystem and its near-term future directions, Describe the major challenges of data, explain how the growth of interconnected devices contributes big data, List real-life examples of Big Data, List the types of Big Data, Identify Big Data use cases, Describe the evolution from traditional data processing to big data processing.	**15**	**1**
2	**Module II: Introduction to Hortonworks Data Platform (HDP):** Describe the functions and features of HDP, List the IBM value-add components, explain what IBM Watson Studio is, give a brief description of the purpose of each of the value-add components, Understand the basic need for a big data strategy in terms of parallel reading of large data files and internode network speed in a cluster.	**15**	**2**
3	**Module III: Storing and querying data** List the characteristics of representative data file formats including flat/text files CSV XML JSON and YAML, List the characteristics of the four types of NoSQL datastores, Describe the storage used by HBase in some detail, Describe and compare the open-source programming languages Pig and Hive, List the characteristics of programming languages typically used by Hbase	**15**	**3**
4	**Module IV: Loading data with Sqoop** List some of the load scenarios that are applicable to Hadoop Understand how to load data at rest, understand how to load data from common sources such as a data warehouse relational database web server or database logs, explain what is Sqoop Describe how Sqoop can be used to import data from relational systems into Hadoop and export data from Hadoop into relational systems.	**15**	**4**

Suggested Readings

1. Gelman, Andrew, and Jenifer Hill. Data Analysis using Regression and Multilevel/Hierarchical Models 1st ed. Cambridge, UK Cambridge University Press, 2006. ISBN 9780521867061
2. Gelman, Andrew, John B Carlin, Hal S Stern and Donald B. Rubin, Bayesian Data Analysis, 2nd ed. New York: Chapman & Hall 2003, ISBN: 9781584883883
3. Bigdata Analytics Shankarmani Wiley 2017, 2nd Edition

Online Resources

1. https://cognitiveclass.ai/courses/what-is-big-data

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	1	2		2	1		1	3	1	1		1	2	3
CO2				2	1		1	2	1	1		1	2	3
CO3		2	2	1		1	2	1	1		1	2	2	2
CO4	1	2	2	1		1	2	2					2	2
Avg	**1**	**2**	**2**	**1.5**	**1**	**1**	**1.5**	**2**	**1**	**1**	**1**	**1.33**	**2**	**2.5**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**1**	**Semester**		**2**	
Course Name	**Big Data Fundamentals-Lab**				
Code	**NBBAB5202**				
Course Type	**Discipline Specific Course –Lab**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic Knowledge of NBBAB5102**	**0**	**0**	**2**	**2**
Course Objectives	To familiarize students with: ❖ The concepts of Bigdata and its importance and the concept of data ingestion. ❖ Fundamental concepts and tools of Hadoop.				
Course Outcomes					
CO1	Understanding role of various tools of hadoop and recognize their impact in business decisions.				
CO2	Analysing and evaluating techniques and principles in achieving big data analytics with scalability and streaming capability				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I** Implement the following file management tasks in Hadoop: Adding files and directories ● Retrieving files ● Deleting files **Hint:** A typical Hadoop workflow creates data files (such as log files) elsewhere and copies them into HDFS using one of the above command line utilities. Install and Run Hive then use Hive to create, load, alter, and drop databases and internal, external tables. Install and Run Pig then write Pig Latin scripts to sort, group, and filter your data. Implement sqoop commands. Implement Hbase DDL and DML commands	**30**	**1**
2	**Module II** Implement joins using pig. Implement Hive bucketing with data set Implement Hive Partitioning with data set Implement the hive joins POC (Proof of concept) on public dataset using hive and pig	**30**	**2**

Suggested Readings

1. Gelman, Andrew, and Jennifer Hill. Data Analysis Using Regression and Multilevel/Hierarchical Models. 1st ed. Cambridge, UK: Cambridge University Press, 2006. ISBN:9780521867061.
2. Gelman, Andrew, John B. Carlin, Hal S. Stern, and Donald B. Rubin. Bayesian Data Analysis. 2nd ed. New York, NY: Chapman & Hall, 2003. ISBN:9781584883883
3. Bigdata Analytics Shankarmani Wiley 2017 2nd Edition
4. IBM Material

Online Resources

1. https://cognitiveclass.ai/courses/what-is-big-data

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	1	2		2	1		1	3	1	1		1	2	3
CO2				2	1		1	2	1	1		1	2	3
Avg	**1**	**2**	**0**	**2**	**1**	**0**	**1**	**2.5**	**1**	**1**	**0**	**1**	**2**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**1**	**Semester**		**2**	
Course Name	**Introduction to Business Analytics using MS Excel**				
Code	**NBBAB5203**				
Course Type	**Discipline Specific Course**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic Knowledge of NGE54502**	**2**	**0**	**2**	**4**
Course Objectives	To familiarize students with: ❖ Implementation of Business Analytics in Management domain ❖ Understand the spreadsheet software				
Course Outcomes					
CO1	Remembering and understanding about the Business Analytics				
CO2	Applying the domain and decision making using the tools of Business Analytics				
CO3	Analysing model using the knowledge of MS Excel and environment of MS Excel.				
CO4	Evaluating and creating the formula and function and creation of models.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Introduction to Business Analytics** Introduction to business Analytics, Business Analytics Applications, Importance and Evolution of Business Analytics, Classification of Business Analytics, Business Analytics for Management decisions, Framework of Business Analytics, Scope and framework of Business Analytics, Variables for Business Analytics, Data handling in Business Analytics, Decision Models, Problem solving and decision making	**15**	**1**
2	**Module II: Experiment with Worksheets and Workbooks** Create a workbook, Import data from a delimited text file, Add a worksheet to an existing workbook, Copy and move a worksheet, Search for data within a workbook, Navigate to a named cell, range, or workbook element, Insert and remove hyperlinks, Change worksheet tab color, Rename a worksheet, Change worksheet order, Insert and delete columns or rows, Change workbook themes, Adjust row height and column width, Insert headers and footers, Hide or unhide worksheets, Hide or unhide columns and rows, Customize the Quick Access toolbar, Modify document properties, Display formulas, Inspect a workbook for hidden properties or personal information, Inspect a workbook for accessibility issues, Inspect a workbook for compatibility issues	**15**	**2**
3	**Module III: Formula and Functions** Insert references, perform calculations by using the SUM, MIN and MAX functions, perform calculations by using the COUNT function, AVERAGE function, perform logical operations by using the IF function, SUMIF function, AVERAGEIF function, perform statistical operations by using the COUNTIF function, Format text by using RIGHT, LEFT, and MID functions UPPER, LOWER, and PROPER functions, Format text by using, Format text by using the CONCATENATE function. Financial Functions like PV, FV and PMT, Other relevant functions, Formula Writing technique.	**15**	**3**

4	**Module III: Custom data and Formats** Create custom number formats, Populate cells by using advanced Fill Series options, Configure data validation, Create custom conditional formatting rules, Create conditional formatting rules that use formulas, Manage conditional formatting rules, Create an Excel table from a cell range, Convert a table to a cell range, Add or remove table rows and columns, Apply styles to tables, Configure table style options, Insert total rows, Filter records, Sort data by multiple columns, Change sort order, Remove duplicate records, Create a new chart, Add additional data series, Switch between rows and columns in source data, Analyze data by using Quick Analysis, Resize charts, Add and modify chart elements, Apply chart layouts and styles, Move charts to a chart sheet.	**15**	**4**

Suggested Readings

1. Business Analytics for Managers: Taking Business Intelligence Beyond Reporting, Wiley
2. Business Analytics: Data Analysis and Decision Making, Cengage

Online Resources

1. eGyanKosh http://egyankosh.ac.in//handle/123456789/32584
2. https://www.youtube.com/watch?v=W3vrMSah3rc

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2	3	1	3	1	2	1	2		2	1	3	3	3
CO2	2	3	1	3	1		1	2	1	2	1	3	2	3
CO3	2	3	2	3	1	2		2		2	1	3	3	2
CO4	2	3	1	3	1	2	1	2	1	2	1	3	3	3
Avg	**2**	**3**	**1.25**	**3**	**1**	**2**	**1**	**2**	**1**	**2**	**1**	**3**	**2.75**	**2.75**

Program	Bachelor of Business Administration -Business Analytics				
Year	1	Semester		2	
Course Name	Fundamentals of Accounting				
Code	NBBAB5204				
Course Type	Discipline Specific Course	L	T	P	Credit
Pre-Requisite	Pass Certificate of 10+2	3	1	0	4
Course Objectives	To familiarize students with: ❖ Basic concepts and standards underlying financial accounting systems. ❖ Construction of the basic financial accounting statements as well as their interpretation.				
Course Outcomes					
CO1	Remembering and understanding accounting and purpose of maintaining records.				
CO2	Applying trial balance and balance sheet.				
CO3	Analysing objective of preparing a Bank Reconciliation Statement and Instalment payment system.				
CO4	Evaluating and creating appropriate accounting entries regarding issue, forfeiture, redemption of shares and debentures.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Introduction** Meaning and concepts of financial accounting, users of accounting information, fundamental books of accounting, accounting cycle, journal entries, ledger, cash book: three column.	15	1
2	**Module II: Financial Statements** Trial Balance: need, importance, limitations. Preparation of trading and P&L Account and balance sheet with simple adjustments.	15	2
3	**Module III: BRS, Depreciation and Hire Purchase** Bank reconciliation statement. Depreciation: concept, rationale and methods of SLM, WDV, SFM. Hire purchase and installment systems.	15	3
4	**Module IV: Company Accounts** Issue of shares including forfeiture of shares, issue of bonus shares, issue of Preference Share. Debenture: Redemption of Debenture and its methods. Cash conversion. Sinking fund and miscellaneous Accounts.	15	4

Suggested Readings:

1. Chaturvedi C. L., Advanced Accountancy, Shree Mahavir Book Depot.
2. Gupta R. L. and Radha Swami M., Financial Accounting, Sultan Chand and Sons.
3. Maheshwari S.N &Maheshwari S.K, An Introduction to Accountancy, Vikas Publication

Online Resources

1. eGyanKosh: Financial Accounting online available at http://hdl.handle.net/123456789/37446
2. NPTEL: Introduction and scope of accounting online available at https://archive.nptel.ac.in/courses/110/101/110101131/

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2	3	1	2		1		1	2	1		2	2	3
CO2	2	3	2	2					2	2		2	2	3
CO3	2	1	1	2	1	2		1	1		1	2	2	3
CO4	2	2	1	2		3	1	1	2	1		2	2	3
Avg	**2**	**2.25**	**1.25**	**2**	**1**	**2**	**1**	**1**	**1.75**	**1.33**	**1**	**2**	**2**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**1**	**Semester**		**2**	
Course Name	**Organization Behaviour and Principles of Management**				
Code	**NGE54503**				
Course Type	**Generic Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Pass Certificate of 10+2**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Topics and concepts in the field of Organizational Behaviour. ❖ Practical implications of various theories of human behavior, leadership, motivation, personality, perception, etc. at work.				
Course Outcomes					
CO1	Remembering and understanding concept of behaviour at workplace and analyze the work values, relations between attitude and behaviour.				
CO2	Applying motivation and handle emotions in work setting.				
CO3	Analysing management practices of business organizations in the dynamic global environment				
CO4	Evaluating and creating Planning, Directing and Controlling Principles, Process and Relationship between them.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Introduction to Organization Behavior** Concept and nature of Organizational behaviour, contributing disciplines to the field of O.B, O.B. Models, need to understand human behaviour, Impact of Global and Cultural diversity in OB. Ability & Values. Attitudes: Formation, Theories, And Personality: determinants and traits.	**15**	**1**
2	**Module II: Motivation and Leadership** Motivating and Leading: Nature and Importance of motivation, Types of motivation, Theories of motivation: Maslow, Herzberg, X, Y and Z. Leadership and its Types.	**15**	**2**
3	**Module III: Introduction to Principles Management** Concept, nature, process and significance of management. Managerial levels, skills, functions and roles. Management Vs. Administration. Coordination as essence of management. Development of management thought: classical, neo-classical, behavioural, systems and contingency approaches.	**15**	**3**
4	**Module IV: Planning & Organizing, Directing & Control** Planning: Nature, scope and objectives of planning, Types of plans, Planning process. Organizing: Concept, process and significance. Principles of an organization, Types of organization: Formal and Informal Organization. Directing: Concept & principles of directing Controlling: Concept, Principles, Process and Relationship between planning and controlling	**15**	**4**

Suggested Readings

1. Prasad, L.M., Organizational Behaviour, Sultan Chand and Sons,2003.
2. Stephen P. Robbins, Organizational Behaviour, Prentice Hall of India Pvt. Ltd., New Delhi,2003.
3. Chabbra T.N. and Singh B.P., Organization Behaviour, Sultan Chand and Sons.

Online Resources

1. eGyanKosh: OB&POM online available at https://egyankosh.ac.in/handle/123456789/4736
2. NPTEL: Principles of Management online available at https://onlinecourses.nptel.ac.in/noc20_mg58/preview

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	3	2	2	3	1	2	1	2	1	1		2	3	3
CO2	2	2	1	2	2	1	2	2	2	1		2	3	3
CO3			1	2	2		2	2	2	1	1	2	3	3
CO4	2	2	1	2	2	1	2	2	2	1		2	3	3
Avg	**2.33**	**2**	**1.25**	**2.25**	**1.75**	**1.33**	**1.75**	**2**	**1.75**	**1**	**1**	**2**	**3**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**1**	**Semester**		**2**	
Course Name	**Business Economics –II**				
Code	**NGE54504**				
Course Type	**Generic Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic Knowledge of NBBAB5104**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Business Economics and role of managerial economics in decision making, Role and responsibility of a managerial economist. ❖ Market structure and types of competition in it.				
Course Outcomes					
CO1	Remembering and understanding scope of economics and business economics and become familiar with objectives of firm.				
CO2	Applying demand analysis and demand forecasting.				
CO3	Analysing production and cost functions & classification.				
CO4	Evaluating profit maximization and policies made and planning done to achieve the goal of profit maximization with customer satisfaction.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Introduction** Business Economics: Definition, Nature and Scope of Business Economics and relationship with other subjects. Fundamental Economic Tools-Opportunity cost concept, Incremental concept, Principle of time perspective, discounting principle and Equi-marginal principle. Role of managerial economics in decision making, Role and responsibility of a managerial economist. Objectives of a firm.	**15**	**1**
2	**Module II: Demand Analysis** Elasticity of demand: Concepts, types, measurements of elasticity of demand, implications in decision-making. Demand forecasting: meaning and significance of demand forecasting, methods of demand forecasting, characteristics of a good demand forecasting.	**15**	**2**
3	**Module III: Production and Cost Analysis** Production function, Law of variable proportion and laws of return to scale, Cost concepts and classification of costs. Cost-output relationship: Short run and Long run. Cost curves, Economies and diseconomies of scale. Cost control and reduction.	**15**	**3**
4	**Module IV: Pricing Decision and Profit policies and planning** Pricing decision policies, Pricing Decisions under different market structures: Perfect competition, monopoly, monopolistic competition, oligopoly. Main features of each market structure, price determination and managerial implications. Pricing policies and methods Concept, theories of profit, measurement of profit. Break-even analysis: Concepts, methods of estimation, application in profit planning.	**15**	**4**

Suggested Readings

1. Ahuja, H. L., Business Economics, S. Chand Limited.
2. Mishra and Puri., Business Economics, Himalaya Publishing House.
3. Koutsoyuianni, Modern Micro Economics, Macmillan.

Online Resources

1. eGyanKosh http://egyankosh.ac.in//handle/123456789/30780
2. https://www.youtube.com/watch?v=YVHazkDN10c

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	3		1	2	2		2	2	2	2		2	3	3
CO2	3	3	1	2	2		2	2	2	2	1	2	3	2
CO3	3	3	1	2	2		2	2	2	2		2	3	2
CO4						1			2					
Avg	**3**	**3**	**1**	**2**	**2**	**1**	**2**	**2**	**2**	**2**	**1**	**2**	**3**	**2.33**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**1**	**Semester**		**2**	
Course Name	**Logistics Management**				
Code	**NSMVC5201**				
Course Type	**VC**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Pass Certificate of 10+2**	**2**	**0**	**0**	**2**
Course Objective	To familiarizestudents with: ❖ The fundamentals of logistics and to relate the concepts to real life business and to become efficient suppliers				
Course Outcomes					
CO1	To understand the role Logistics in an organization.				
CO2	To understand the concept and need for Outsourcing logistics				
CO3	To examine the role of procurement and material handling in an organization				
CO4	To describe the role of warehouse and its process.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module 1: Introduction to Logistics Management** Definition and Evolution of Logistics management -Achievement of competitive advantage through logistics Framework-Role of Logistics management-Integrated Logistics Management – Model, Emerging concept in logistics, Case study	**7**	**1**
2	**Module 2: Outsourcing logistics and Logistics Strategy** Reasons for Outsourcing logistics, Third party logistics provider-Fourth party Logistics providers (4 pl), Role of logistics providers, Role of logistics managers in strategic decisions, Designing & Implementing logistical strategy, Case Study.	**8**	**2**
3	**Module 3: Procurement and Material Handling** Objectives of Procurement System, Principles of Procurement, History of procurement function, Procurement Cycle, Procurement Planning, Material handling- Product movement- concept- costs-product load activity—dispatch activity, unload activity-control device, Packaging - Pallet - Stretch wraps - Cartons – Labelling, Case Study.	**8**	**3**
4	**Module 4: Warehousing and Storage Management system** Storage Inventory Management, Functions of storage & Inventory - Classification of Inventory, Methods of Controlling Stock Level, Warehouse Management Systems (WMS), Role of warehouse, types of warehouse, warehouse location, Warehouse functions, Role of warehouse manager, Case Study.	**7**	**4**

Suggested Readings

1. Arnold, J.R., Chapman, S.N. (2012). The Introduction to Materials Management. (7th ed.), Prentice-Hall. Coyle, J.J., Jr. Langley, C.J., Novack, R.A, & Gibson, B.J. (2013).
2. Managing Supply Chains: A Logistics Approach. (9th ed.), McGraw-Hill. Edward, F. (2002).
3. World-Class Warehousing and Material Handling. (International ed.), McGraw-Hill. Muller, M. (2011).
4. Essentials of Inventory Management. (2nd ed.), American Management Association. Donald J Bowersox, David J Closs, Logistical Management, TMH

Online Resources

1. http://egyankosh.ac.in//handle/123456789/72286
2. http://egyankosh.ac.in//handle/123456789/13664

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	3	1	1	2	1					2	2	2	2	2
CO2	3	1	1	2	1		1			2	2	2	2	2
CO3	3	1	1	2	1	1			1	2	2	2	2	2
CO4	3	1	1	2	1					2	2	2	2	2
Avg	**3**	**1**	**1**	**2**	**1**	**1**	**1**		**1**	**2**	**2**	**2**	**2**	**2**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**2**	**Semester**		**3**	
Course Name	**Descriptive Analytics**				
Code	**NBBAB5301**				
Course Type	**Discipline Specific Course**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic Knowledge of NBBAB5201**	**3**	**0**	**1**	**4**
Course Objectives	To familiarize students with: ❖ How analytics provided a solution to industries using real case studies. ❖ How a business analysis software works, and its architecture in designing different report types.				
Course Outcomes					
CO1	Remembering and Understanding concepts and methods of business analytics.				
CO2	Applying Power BI concepts like Microsoft Power BI desktop layouts, BI reports, dashboards, and Power BI DAX commands and functions				
CO3	Analysing how to experiment, fix, prepare and present data quickly and easily				
CO4	Evaluating and creating solutions of appropriate courses of action for a given managerial situation whether a problem or an opportunity.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Analytics Overview** The history of analytics and how it has changed today. Understanding how to analyse unstructured data. Understanding how analytics is making the world smarter. Understanding where the future of analytics lies. Explaining why successful enterprises need business analytics. defining various types of analytics. Explaining how analytics supports retail companies. Understanding how analytics can reduce crime rates and accidents. Explaining the use of analytics in law enforcement and insurance companies. Comprehend how big data and analytics can help in understanding consumer/customer behaviour.	**15**	**1**
2	**Module II: Business Intelligence using Tools** Power BI – Advantages and Scalable Options, History – Power View, Power Query, Power Pivot, Business Analyst Tools, MS Cloud Tools, Power BI Installation and Cloud Account, Power BI Cloud and Power BI Service, Power BI Architecture and Data Access, Sample Reports and Visualization Controls, Power BI Cloud Account Configuration. Understanding Desktop & Mobile Editions, Report Rendering Options and End User Access, chart report types and properties, stacked bar chart, stacked column chart, clustered bar chart, clustered column chart, 100% stacked bar chart, 100% stacked column chart line charts, area charts, stacked area charts, line and stacked row charts, line and stacked column charts, waterfall chart, scatter chart, pie chart, Field Properties: Axis, Legend, Value, Tooltip, Field Properties: Color Saturation, Filters Types, Formats: Legend, Axis, Data Labels, Plot Area, Data Labels: Visibility, Color and Display Units	**15**	**2**
3	**Module III: IBM Cognos Analytics** Demonstrating how to apply business intelligence. Learning how to access content, use reports, and create dashboards. Group, format, and sort list	**15**	**3**

	reports. Describing the various options for aggregating data.. Creating filters to narrow the focus of reports. Examining detail filters and summary filters. Determining when to apply filters on aggregate data. Formatting and sort crosstab reports. Creating charts containing peer and nested columns. Presenting data using different chart type options. Introduction to visualization. Presenting key data in a single dashboard report. Identifying various prompt types. Using parameters and prompts to focus data. Searching for prompt types. Reusing objects within the same report. Sharing layout components among separate reports. Discussing report templates.		
4	**Module IV: Summarize report information** Passing parameter values to filter the data in drill-through targets, Modifying existing report structures. Applying horizontal formatting. Specifying print options for PDF reports, Describing Active Reports, and their value. Saving Active Reports. Creating Active Reports, Converting existing reports to Active Reports	**15**	**4**

Suggested Readings:

1. IBM Cognos Business Intelligence V10.1 Handbook, An IBM Redbooks publication
2. IBM Cognos Business Intelligence by O'Reilly
3. A Practical Guide to Self-Service Data Analytics with Excel 2016 and Power BI Desktop (2nd Edition.

Online Resources

1. https://cognitiveclass.ai/courses/data-analysis-python

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	1	3		2	2	2		3	2	2		2	3	3
CO2	1	3		2	2	2		3	2	2		2	3	3
CO3		2		2	1			2	1	1		2	2	3
CO4	1	3		2	2	2		3	2	2		2	3	3
Avg	**1**	**2.75**	**0**	**2**	**1.75**	**2**	**0**	**2.75**	**1.75**	**1.75**	**0**	**2**	**2.75**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**2**	**Semester**	**3**		
Course Name	**Descriptive Analytics-Lab**				
Code	**NBBAB5302**				
Course Type	**Discipline Specific Course-Lab**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic Knowledge of NBBAB5202**	**0**	**0**	**2**	**2**
Course Objectives	To familiarize students with: ❖ How analytics provided a solution to industries using real case studies. ❖ Designing different report types and summarizing Reports for Analysis.				
Course Outcomes					
CO1	Understanding and remembering the concepts and methods of business analytics.				
CO2	Applying and analysing relationships in your data model.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I:** Create a report from a personal data source Create a report using filters, detail filter on fact data in a report Conditionally format one crosstab measure based on another Create a gauge report and a pie chart report Create a prompt by adding a parameter, add value and select-search prompt in a report	**30**	**1**
2	**Module II:** Add calculations to a report and display prompt selections in the report title Creating Bins and Distributions using Power BI Working and exploring the Bar graph, scatter graph in Power BI Develop a dashboard using Power BI using custom datasets Creating a Customer Segmentation Dashboard	**30**	**2**

Suggested Readings:

1. IBM Cognos Business Intelligence V10.1 Handbook, An IBM Redbooks publication
2. IBM Cognos Business Intelligence by O'Reilly
3. A Practical Guide to Self-Service Data Analytics with Excel 2016 and Power BI Desktop (2nd Edition)

Online Resources

1. https://cognitiveclass.ai/courses/data-analysis-python

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	1	3		2	2	2		3	2	2		2	3	3
CO2	1	3		2	2	2		3	2	2		2	3	3
Avg	**1**	**3**	**0**	**2**	**2**	**2**	**0**	**3**	**2**	**2**	**0**	**2**	**3**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**2**	**Semester**		**3**	
Course Name	**Quantitative Techniques for Business Analytics II**				
Code	**NBBAB5303**				
Course Type	**Discipline Specific Course**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Knowledge of NBBAB5103**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Role of Business Mathematics in modern society. ❖ Working knowledge of current trends, interpretation and relation of these trends to different sectors of firms and practical applications of Business Mathematics in every field of management.				
Course Outcomes					
CO1	Remembering and understanding basic principles of arithmetic and apply mathematical skills to financial decisions.				
CO2	Applying annuities and present value of money and apply this in risk and decision making.				
CO3	Analysing algebra of Polynomials and Logarithmic Functions, Exponential equations, Logarithmic equations				
CO4	Evaluating and creating Recognize problems that linear programming can handle and find optimal solutions subject to some constraints and rank and dimension using Gaussian elimination				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Basic Arithmetic** Ratio and Percentage: its application in calculating cost and invoice price, discount, commission and brokerage, Profit & Loss. Progression: Arithmetic, Geometric and Harmonic Progression. Basic problem on Time, speed and distance and Mensuration	**15**	**1**
2	**Module II: Algebra and Calculus** Permutation and Combination. Surds and Indices, Law of Indices, Simultaneous linear equation. Basic operations of Differentiation and Integration.	**15**	**2**
3	**Module III: Algebra of Polynomial** Algebra of Polynomials - Addition, subtraction, multiplication, and division, Algorithms, Graphs of Polynomials - X-intercepts, multiplicities, end behaviour, and turning points, Graphing & polynomial creation, Functions - Horizontal and vertical line tests, Exponential functions, Composite functions, Inverse functions, Logarithmic Functions - Properties, Graphs, Exponential equations, Logarithmic equations	**15**	**3**
4	**Module IV: Introduction to vector spaces** Introduction to vector spaces - Introduction to vector spaces; Some properties of vector spaces; Linear dependence, Basis and dimension - What is a basis for a vector space?; Finding bases for vector spaces; What is the rank/dimension for a vector space; Rank and dimension using Gaussian elimination	**15**	**4**

Suggested Readings

1. Zameeruddin, Khanna and Bhambri, Business Mathematics, Vikas Publishing.
2. Sharma J. K., Business Mathematics: Theory and Application, Ane Books Pvt. Ltd, 2nd Edition.
3. Shukla S. M., Business Mathematics, Sahitya Bhawan Publication, Agra.

Online Resources

1. eGyanKosh http://egyankosh.ac.in//handle/123456789/64520
2. https://www.youtube.com/watch?v=QC5yjpJU2eY

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	1	3		2	2	2		3	2	2		2	3	3
CO2	1	3		2	2	2		3	2	2		2	3	3
CO3	2	3		2	2	2		3	2	2		2	3	3
CO4	1	3		2	2	2		3	2	2		2	3	3
Avg	**1.25**	**3**	**0**	**2**	**2**	**2**	**0**	**3**	**2**	**2**	**0**	**2**	**3**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**2**	**Semester**		**3**	
Course Name	**Marketing Research**				
Code	**NBBAB5304**				
Course Type	**Discipline Specific Course**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic knowledge of NBBAB5103**	**4**	**0**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Concept and relevance of marketing research. ❖ Marketing research process and report preparation.				
Course Outcomes					
CO1	Remembering and understanding marketing research and research design.				
CO2	Applying sample and sampling design, sampling process and its types.				
CO3	Analysing data collection, data processing and tabulation.				
CO4	Evaluating data analysis, interpretation and report writing.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Introduction to Marketing Research and Research Design** Introduction of Marketing Research: Definition, aims and objectives of marketing research, Applications of marketing research, Marketing information system, Evaluation and control of marketing research, Value of information in decision making, Steps in marketing research. Research Design: Formulating the research problem, Choice of research design, Types of research design and Sources of experimental errors.	**15**	**1**
2	**Module II: Sample and Sampling Design** Sample and Sampling Design: Some basic terms, Advantages and limitation of sampling, Sampling process, Types of sampling, Types of sample designs, Determining the sample size, Sampling distribution of themean, Testing of hypothesis.	**15**	**2**
3	**Module III: Data Collection, Data Processing and Tabulation** Methods of data collection: Secondary data, Sources of secondary data, Primary data, Collection of primary data, Observation, Questionnaire, Designing of questionnaire, Interviewing. Data Processing and Tabulation: Editing, Coding, Problems in editing, Tabulation.	**15**	**3**
4	**Module IV: Data Analysis, Interpretation and Report Writing** Data Analysis: Measurement of central tendency, Dispersion, Univariate analysis, Bivariate analysis, Multidimensional analysis I, Multivariate analysis II, Factor analysis, cluster analysis, multidimensional analysis, conjoint analysis. Interpretation and Report Writing: Interpretation, Types of research reports, Guidelines for writing a report, report format, Evaluation of research report.	**15**	**4**

Suggested Readings

1. Beri, G.C., Marketing Research, Tata McGraw Hill, 2003.
2. Gupta, S.L., Marketing Research, Excel Books, 2004.
3. Aaker, Marketing Research, John Willey & Sons, 2001.

Online Resources

1. eGyanKosh http://egyankosh.ac.in//handle/123456789/10391
2. https://www.youtube.com/watch?v=ABLHV5Ce6TI&list=PLPjSqITyvDeWBBaFUbkLDJ0egyEYuNeR1

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2	1	1	1			2	2	3	2		2	2	3
CO2	2	2	1	1			2	2	3	2		2	2	3
CO3	2	2		1			2	2	3	2		2	2	3
CO4	2	1	1				2	2	3	2		2	2	3
Avg	**2**	**1.5**	**1**	**1**	**0**	**0**	**2**	**2**	**3**	**2**	**0**	**2**	**2**	**3**

Program	Bachelor of Business Administration -Business Analytics				
Year	2	Semester		3	
Course Name	Business Environment				
Code	NGE54505				
Course Type	Generic Elective	L	T	P	Credit
Pre-Requisite	Pass Certificate of 10+2	3	1	0	4
Course Objectives	To familiarize students with: ❖ Business scenarios in today's world and various policies, laws and their impact on the business. ❖ Global business environment and the natural environment in which the business operates.				
Course Outcomes					
CO1	Remembering and understanding various types of business environment: Political, Economic, Socio-cultural, Legal, Technological and Global environment.				
CO2	Applying the role of public sector along with various government regulatory acts and policies regarding business environment including industrial, monetary and fiscal policies.				
CO3	Analysing globalization, liberalization and privatization with policies related to foreign companies.				
CO4	Evaluating financial Institutions and economic policies. Get a deeper understanding towards recent economic trends.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Introduction** Business Environment: Nature, dimensions and meaning. Components of business environment: economic, political, technological and social environment. Consumerism and consumer protection in India. A brief study of capitalism, socialism and mixed economy.	15	1
2	**Module II: Industrial and Legal Environment** Industrial Growth and policy, industrial licensing policy. MRTP. Economic planning: aims, objectives and framework of development planning in India. Legal Environment. India's Fiscal and Monetary Policies.	15	2
3	**Module III: Public Sector and Economic Organizations** Public Sector: Concept, Rationale, Government Programme, Role of Public Sector in India. Foreign Trade Policies. Development Banks: IFCI, IDBI, SIDBI, IIBI.	15	3
4	**Module IV: Recent Economic Trends** Economic Liberalization, Privatization and Globalization. Foreign investment policy. Export Promotion councils and boards. Import Control. EXIM policy, FEMA, IPR (International and Indian Patent Rights Acts). Anti Pollution Act. Environmental Groups and Bodies. Euro I, II and III Norms, Introduction to Goods and Services Tax.	15	4

Suggested Readings

1. Mishra S. K. and Puri V. K., Economic Environment of Business, Himalaya Publication.
2. Paul, Justin., Business Environment Text and Cases, Tata McGraw Hill.
3. Shaikh and Saleem, Business Environment, Pearson, 1st Edition.

Online Resources

1. eGyanKosh: Business Environment online available at https://egyankosh.ac.in/handle/123456789/2898
2. NPTEL: Introduction to Business environment available at https://onlinecourses.swayam2.ac.in/imb22_mg02/preview

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	1	2	1	2			2		2	2	3	2	3	2
CO2	1	2	1	2	1	2	2		2	2	3	2	3	2
CO3	1	2	1	2		2	2	1	2	2		2	3	2
CO4	1	2	1	2			2		2	2	1	2	3	2
Avg	**1**	**2**	**1**	**2**	**1**	**2**	**2**	**1**	**2**	**2**	**2.33**	**2**	**3**	**2**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**2**	**Semester**		**3**	
Course Name	**Business Law**				
Code	**NGE54506**				
Course Type	**Generic Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Pass Certificate of 10+2**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Essential features of various business laws. ❖ Ethical and logical approaches to deal with business issues and conflicts.				
Course Outcomes					
CO1	Remembering and understanding law related to Indian contract act and understand essential features of valid contract.				
CO2	Applying sales of goods act with reference to formation of contract of sale and agreement to sell, conditions and warranties, sale of goods by non-owner, delivery of goods.				
CO3	Analysing companies Act and its types.				
CO4	Evaluating basics of partnership and its formation and the kinds of negotiable instruments and their endorsements.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Indian Contract Act** Introduction: Nature of contract offer and acceptance, consideration, capacity to contract, free consent, legality of object, agreements declared void, quasi contracts, contingent contracts. Breach of contract, remedies for breach of contract. Indemnity and guarantee. Bailment and pledge. Agency. Performance of contract.	**15**	**1**
2	**Module II: The Sale of Goods Act** Formation of contract of sale, and agreement to sell, conditions and warranties, implied conditions, caveat emptor, sale of goods by the non-owners, delivery of goods, unpaid seller and his rights, remedies for breach of contract of sale.	**15**	**2**
3	**Module III: The Companies Act,2013** Essential characteristics of a company, types of companies. Memorandum and articles of association. Prospectus. Shares: kinds, allotment and transfer. Debentures. Essential conditions for a valid meeting, kinds of meetings and resolutions. Directors, Managing Directors: their appointment, qualifications, powers and limits on their remuneration, prevention of oppression and mismanagement.	**15**	**3**
4	**Module IV: Partnership Act and Negotiable Instrument Act** Nature of partnership, Registration of firm and effect of non- registration, Rights and duties of partners, Position of Minor. Dissolution of firm: Rights and liabilities of partners on dissolution. Negotiable instruments: Kinds, features, Crossing and types of crossing. Payment in due course, holder and holder in due course, privileges of holder	**15**	**4**

	in due course. Dishonour of negotiable instrument, discharge of negotiable instruments, banker and customer.		

Suggested Readings

1. Kuchhal M. C., Business Law, Vikas Publishing House, New Delhi, 2004.
2. Kapoor N. D., Elements of Mercantile Law, Sultan Chand and Sons, New Delhi, 2003.
3. Gulshan J.J., Business Law Including Company Law, 13th Edition, New Age International Publisher.

Online Resources

1. eGyanKosh: http://egyankosh.ac.in//handle/123456789/56334
2. https://www.youtube.com/watch?v=BZshaldOlUo&list=PLJtJvO3aaWe0rUA2cmu4su8_Lfwod4GmF

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	1		1	2	1	3	3		2	2		2	3	2
CO2	1	2	1	2		3	3		2	2	1	1	3	2
CO3	2		1	2	1	3	3		1	2	2	1	3	2
CO4	1			2	1	3	3		2	2	1	2	3	2
Avg	**1.25**	**2**	**1**	**2**	**1**	**3**	**3**	**0**	**1.75**	**2**	**1.33**	**1.5**	**3**	**2**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**2**	**Semester**		**3**	
Course Name	**Financial Literacy**				
Code	**NSMCC5301**				
Course Type	**CC**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**The students must familiar with terminologies like financial institutions, financial services, banking services and budget `**	**2**	**1**	**0**	**3**
Course Objectives	To familiarize students with: ❖ An integrated approach to understand the concepts and applications of financial planning.				
Course Outcomes					
CO1	Describe the importance of financial literacy and list out the institutions providing financial services				
CO2	Construct financial plan and budget and manage personal finances				
CO3	Analyse various types of products and services offered by banks and post office				
CO4	Evaluate the appropriate financial instrument for investment				

Module	**Course Contents**	**Contact Hrs.**	**Mapped CO**
1	**Introduction** Meaning, importance and scope of financial literacy; Prerequisites of Financial Literacy – level of education, numerical and communication ability; Various financial institutions – banks, insurance companies, Post Offices; Mobile App based services.	10	1
2	**Financial Planning and Budgeting** Meaning, importance and need for financial planning; Personal Budget, Family Budget, Business Budget and National Budget; Procedure for financial planning and preparing budget; Budget surplus and Budget deficit, avenues for savings from surplus, sources for meeting deficit.	11	2
3	**Banking Services** Types of bank deposit accounts – Savings BankAccount, Term Deposit, Current Account, Recurring Deposit, PPF, NSC etc., PAN Card, Address proof, KYC norm; Various types of loans – short term, medium term, long term, micro finance, agricultural etc. and related interest rates offered by various nationalized banks and post office; Cashless banking, e-banking, Check Counterfeit Currency; CIBIL, ATM, Debit and Credit Card	12	3
4	**Financial Services from Post Office** Monthly Income Scheme, Kishan Vikas Patra, NSC, PPF, Senior Citizen Savings Scheme (SCSS), Sukanya Samriddhi Yojana/ Account (SSY/SSA); India Post Payments Bank (IPPB). Money Transfer: Money Order, E-Money order. Instant Money Order, collaboration with the Western Union Financial Services; MO Videsh	12	4

Suggested Readings

1. Kothari, R. (2010). *Financial Services in India-Concept and Application*. New Delhi: Sage Publications India Pvt. Ltd.
2. Milling, B. E. (2003). *The Basics of Finance: Financial Tools for Non-Financial Managers.* Indiana: universe Company.
3. Mittra, S., Rai, S. K., Sahu, A. P., &Starn, H. J. (2015). *Financial Planning.* New Delhi: Sage Publications India Pvt. Ltd.
4. Zokaityte, A. (2017). *Financial Literacy Education.* London: Palgrave Macmillan.

Online Resources

1. https://egyankosh.ac.in/handle/123456789/30874
2. https://egyankosh.ac.in/handle/123456789/15575

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2	1	1	2		2			1	1		2	2	2
CO2	2	1	1	2		2		1	1	1	1	2	2	2
CO3	2	1	1	2		1			1	1		2	2	2
CO4		2		2		2			1	1		2	2	2
Avg	**2**	**1.25**	**1**	**2**	**0**	**1.75**	**0**	**1**	**1**	**1**	**1**	**2**	**2**	**2**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**2**	**Semester**		**3**	
Course Name	**Creativity and Design Thinking**				
Code	**NSMVC5301**				
Course Type	**VC**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Pass Certificate of 10+2**	**2**	**0**	**0**	**2**
Course Objectives	Course Objectives: ❖ How to transform creative thinking into design thinking in every stage of your problem ❖ How to apply design thinking to your real-life problems / situations in order to evolve an innovative and workable solutions				
Course Outcomes					
CO1	Gain in depth knowledge about creative thinking and design thinking in every stage of problem				
CO2	Analyse the concept of Design thinking				
CO3	Applying design thinking to your real-life problems / situations in order to evolve an innovative and workable solutions				
CO4	Understand and implement design thinking to your real-life problems / situations in order to evolve an innovative and workable solutions				

Module	Course Contents	Contact Hrs.	Mapped CO
1	Innovation & Creativity: Meaning of Innovation and creativity. Difference between innovation and creativity, and its role in Industry and organizations	**7**	**1**
2	Innovation & Creativity: dynamics of creative thinking, Process of Design Thinking, implementing the process in driving innovation, Case Study	**7**	**2**
3	An exercise in design thinking & implementing design thinking through a workshop & exercise case studies in design thinking, design thinking process. Case Study	**8**	**3**
4	Design Thinking in Various Sectors (Health sector, Finance, Education, Infrastructure) Design thinking case studies in retail, design thinking case studies in banking, design thinking case studies in management decisions	**8**	**4**

Suggested Readings

1. Design Thinking by Michael G Luchs, K Scott Swan, Abbie Griffin (WILEY)
2. The Design Thinking by Patrick , Michael Lewrick, Larry Leifer (WILEY)
3. The Art of Creative Thinking by Rod Judkins
4. Design Thinking - Strategic innovations by IRIS

Online Resources

1. Design Thinking: A Primer, IIT Madras by Dr Ashwin Mahalingam and Prof Bala Ramadurai https://nptel.ac.in/courses/110106124
2. eGyanKosh: Creative, Innovative and Positive Thinking, https://egyankosh.ac.in/handle/123456789/74637

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2	1		1	1	2			1		2	3	2	2
CO2		1	1	1	1	2	1		1		2	3	2	2
CO3	2	1		1	2	3		1		1	2	3	2	2
CO4	2	1		1	1	2			1		2	3	2	2
Avg	**2**	**1**	**1**	**1**	**1.25**	**2.25**	**1**	**1**	**1**	**1**	**2**	**3**	**2**	**2**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**2**	**Semester**		**4**	
Course Name	**Predictive Analytics**				
Code	**NBBAB5401**				
Course Type	**Discipline Specific Course**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic Knowledge of NBBAB5301**	**3**	**0**	**1**	**4**
Course Objectives	To familiarize students with: ❖ Understand Predictive Analytics and the tools required For the Predictive Analytics. ❖ Skills that will help them to solve complex real-world problems in for decision support and designing different models of predictive modeling.				
Course Outcomes					
CO1	Remembering and understanding concepts and methods of Predictive analytics.				
CO2	Applying IBM SPSS Modeler in Data Mining, what kinds of data can be mined, what kinds of patterns can be mined?				
CO3	Analysing how to use functions, deal with missing values, use advanced field operations, handle sequence data and improve efficiency.				
CO4	Evaluating and creating the Model on the basis of different Predictive Methods.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: ANALYTICS OVERVIEW** Definition of business Analytics with real time examples, How Predictive analytics: Transforming data into future insights, Analytics trends: Past, Present & Future, Towards a Predictive enterprise.	**15**	**1**
2	**Module II: IBM SPSS MODELER & DATA MINING** What is a Data Mining applications? Strategy for data mining: CRISP-DM, Identify nodes and streams, The framework of a Data – mining project, Brief the unit of analysis, Explain the type of dialog box.	**15**	**2**
3	**Module III: UNIT OF ANALYSIS** Concepts of Unit of analysis (Distinct, Aggregate, SetToFlag), Integrate data, CLEM Expression, Role of Relationship between two fields, Identifying the modeling objective.	**15**	**3**
4	**Module IV: PREDICTIVE ANALYTICS WITH IBM WATSON STUDIO** IBM Watson Studio, Watson studio Components, Data preparation, Watson Machine learning, Data Refinery, Watson Studio Neural Network Modeler, IBM Watson Studio jobs, Use case with AutoAI.	**15**	**4**

Suggested Readings

1. IBM Courseware
2. Predictive Analytics Mesmerizing & fascinating By ERIC SIEGEL.

Online Resources

1. https://cognitiveclass.ai/learn/data-science

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2	2	1	2		1		3	2	2		2	2	3
CO2	2	1	1	2	1	1		3	2	2		2	2	3
CO3			2				1			2	1	2	2	3
CO4		2	1	2		1		3	2	2		2	2	3
Avg	**2**	**1.66**	**1.25**	**2**	**1**	**1**	**1**	**3**	**2**	**2**	**1**	**2**	**2**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**2**	**Semester**		**4**	
Course Name	**Predictive Analytics-Lab**				
Code	**NBBAB5402**				
Course Type	**Discipline Specific Course**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic Knowledge of NBBAB5302**	**0**	**0**	**2**	**2**
Course Objectives	To familiarize students with: ❖ An overview of Predictive Analytics. ❖ Designing different models of predictive modeling.				
Course Outcomes					
CO1	Understanding the concept of IBM SPSS Modeler in Data Mining, what kinds of data can be mined, what kinds of patterns can be mined.				
CO2	Applying and Evaluating Model on the basis of different Predictive Methods.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I:** Work with IBM SPSS Modeler. Create a data-mining project to predict churn in telecommunications. Set the unit of analysis for the telecommunications data. Integrate telecommunications data. Derive and reclassify fields for the telecommunications data.	**30**	**1**
2	**Module II:** Identify relationships in the telecommunications data Derive and reclassify fields for the ACME data Predict churn in telecommunications and cluster customers into segments Getting started with IBM Watson Studio Getting started with Data Refinery and AutoAI.	**30**	**2**

Suggested Readings

1. IBM Courseware

2. Predictive Analytics Mesmerizing & fascinating by ERIC SIEGEL

Online Resources

1. https://cognitiveclass.ai/learn/data-science

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2	2	1	2		1		3	2	2		2	3	3
CO2	2	1	1	2	1	1		3	2	2		2	3	3
Avg	**2**	**1.5**	**1**	**2**	**1**	**1**	**0**	**3**	**2**	**2**	**0**	**2**	**3**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**2**	**Semester**		**4**	
Course Name	**Management Information System & E Commerce**				
Code	**NBBAB5403**				
Course Type	**Discipline Specific Course**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic Knowledge of NGE54502**	**3**	**0**	**1**	**4**
Course Objectives	To familiarize students with: ❖ The information systems and information technologies that help in taking right decisions for betterment of an organization. ❖ The concepts of ECommerce, Networking and Data Communication and the latest trends of IT and security issues.				
Course Outcomes					
CO1	Remembering and understanding role of information system in an organization.				
CO2	Applying system and design for developing managerial perspective and an informed decision marking ability.				
CO3	Analysing concept of data communication and the requirement of hardware& software systems.				
CO4	Evaluating and creating recent trends of networking, ECommerce and security issues and identify the emerging trends in IT.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: MIS and Decision Making** Information System: Foundation of Information System, Operating elements of Information System, Structure of Information System, Evaluation of Information System, Typical Information Systems including MIS and DSS. Types of Information. Structured and Unstructured decisions.	**15**	**1**
2	**Module II: System Analysis and Design** System: Concept, system concepts applied to MIS, Distinction between physical system and information system. Multiprogramming, Multiprocessing, Real Time systems. Online and distributed environments. Design considerations.	**15**	**2**
3	**Module III: Data Communication and Networking** Data Communication: Fundamental communication concepts, Hardware and Software requirements, Simplex, Duplex, Half, Duplex. Communication Medium: Wired and Wireless. Networking: Concept, LAN, MAN and WAN, Topologies, Types of switching.	**15**	**3**
4	**Module IV: E. Commerce and Recent Trends in IT** E. Commerce: Concept, importance, recent trends, problems, internet tools and techniques, legal & security issues of E. Commerce. Emerging trends in IT including ERP and Business Process Re-engineering.	**15**	**4**

Suggested Readings

1. Agarwala, Kamlesh. N. and Agarwala, Deeksha., Macmillan, India, New Delhi.
2. Diwan, Parag. and Sharma, Sunil. , E. Commerce, A Managers Guide to E. Business, Excel.
3. Javadekar, W.S.(2003),Management Information System, Tata McGraw Hill Publication.

Online Resources

1. NPTEL: Management Information System online available at https://nptel.ac.in/courses/110105095
2. eGyanKosh: E-Commerce online available at https://egyankosh.ac.in/handle/123456789/72073

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2	2	3	2	2			3	1	2		2	2	3
CO2	2	2	2	2	2		1	3	1	2	1	2	2	3
CO3	2		3		2	1		3	1	2		2	2	3
CO4	2	2	3	2	2			3	1	2	1	2	2	3
Avg	**2**	**2**	**2.75**	**2**	**2**	**1**	**1**	**3**	**1**	**2**	**1**	**2**	**2**	**3**

Program	Bachelor of Business Administration -Business Analytics				
Year	2	Semester		4	
Course Name	Business Organization				
Code	NBBAB5404				
Course Type	Discipline Specific Course	L	T	P	Credit
Pre-Requisite	Pass Certificate of 10+2	3	1	0	4
Course Objectives	To familiarize students with: ❖ Management and business concepts and practices. ❖ Emerging challenges of managing resources, managing business processes and managing managers.				
Course Outcomes					
CO1	Remembering and understanding concept of business organization and list down forms of organization.				
CO2	Applying role of sole proprietorship decision-making at the level of the firm.				
CO3	Analysing of the concepts of financial institutions like IFCI, SFC, ICICI, IDBI.				
CO4	Evaluating market structure and different industries to understand the four P's of marketing structure of these industries.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Introduction to Organization** Concepts and objectives of business organization, establishment of a new business, pre-establishment considerations and social responsibility of business. Meaning, objective and principles of organization, line and staff, functional organization, concept of scalar chain.	15	1
2	**Module II: Forms of Business Organization** Sole Proprietorship: Meaning, characteristics and legal requirements. Partnership firms: Meaning, partnership deed and legal requirements as per Partnership Act 1932. Joint stock concerns: Meaning, features, kinds of companies, legal requirements as per Companies Act 2013.	15	2
3	**Module III: Business Finance** Business Finance: Concept, need and significance. Methods of financing: long term, medium term and short term. National finance and international finance. Financial institutions: Brief introduction to IFCI, SFC, ICICI, IDBI. Security market: An introduction to primary and secondary market.	15	3
4	**Module IV: Marketing** Marketing: Concept of marketing, four P's of Marketing. Distribution channel: Meaning, importance, and significance of middlemen. Advertisement and sales promotion: Meaning and objectives. Introduction to Consumer Behaviour.	15	4

Suggested Readings

1. Tulsian P. C. and Pandey V., Business Organization and Management, Pearson Education.
2. Bhushan Y. K., Fundamentals of Business Organization and Management, Sultan Chand and Sons.
3. Chhabra T.N., Business Organisation, DhanpatRai and Sons.

Online Resources

1. SWAYAM: Business Organization and Management online available at https://onlinecourses.swayam2.ac.in/nou21_mg03/preview
2. eGyanKosh: Business Organisation online available at https://egyankosh.ac.in/handle/123456789/3592

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	3		2	2	3	2		2	2	1		2	2	2
CO2	3		2	2	3	2		2	2	1		2	2	2
CO3	2	1	2				2	2	1		1			
CO4	3		2	2	3	2		2	2	1		2	2	2
Avg	**2.75**	**1**	**2**	**2**	**3**	**2**	**2**	**2**	**1.75**	**1**	**1**	**2**	**2**	**2**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**2**	**Semester**		**4**	
Course Name	**Financial Management**				
Code	**NGE54507**				
Course Type	**Generic Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic Knowledge of NBBAB5204**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Financial decisions made by financial managers. ❖ Theories of finance. ❖ Techniques which assist in the decision making process. ❖ Capital Structure for the value maximization of the firm.				
Course Outcomes					
CO1	Remembering and Identifying financial management techniques with their implications in business and understand investment and financial decisions to maximize the value of the firm and Shareholder's wealth maximization.				
CO2	Understanding how to evaluate and make capital budgeting decisions based on NPV, IRR and PI concepts and understand the relevance of Cost of capital and weighted average cost of capital.				
CO3	Applying the skills to prepare the working capital requirements of different projects and firms.				
CO4	Analysing to understand how specific techniques and decision rules can be used to develop Capital structure for an organization and reconcile the leverage effect of capital mix and impact of leverage.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	Nature and scope of financial management, finance function, profit/wealth maximization. Functions of financial managers. Concept of time value of money. Sources of finance: Short Term sources, Long term sources and shares debentures, term loans, GDR, mutual funds, venture capital financing.	**15**	**1**
2	Meaning, objectives, nature of investment decisions. Pay back methods, net present value method, profitability index, and internal rate of return method.	**15**	**2**
3	Introduction, significance, concept, components of cost of capital. Capital Asset Pricing Model. Weighted Average Cost of Capital. Working capital management: meaning, scope, Importance, determinants and sources. Approaches of working Capital Management of Cash, inventories and receivables.	**15**	**2 & 3**
4	Capitalization: meaning, importance, Over Capitalization, under capitalization and optimum Capitalization. Capital Structure: meaning, forms and determinants of capital structure, operating and financial leverage, planning the capital structure by EBIT-EPS Analysis.	**15**	**4**

Suggested Readings

1. Maheshwari S.N., Financial Management, Principles and Practice, Sultan Chand and Sons, 9th Edition 2004.
2. Khan M.Y and Jain P.K., Financial Management, Tata McGraw Hill, 2001, 3rd Edition.
3. Pandey I. M., Financial Management, Vikas Publishing House, Revised Ed., 2003

Online Resources

1. eGyanKosh: Financial Management online available at https://www.egyankosh.ac.in/handle/123456789/3161
2. NPTEL: Financial Management for Managers online available at https://nptel.ac.in/courses/110107144

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	3	1	1		2	1	1		1	1		2	2	2
CO2	3	1	1			1		1	1	1	1	2	2	2
CO3	3	1	1	1		1	1		1	1		2	2	2
CO4		2			1				1	1		2	2	2
Avg	**3**	**1.25**	**1**	**1**	**1.5**	**1**	**1**	**1**	**1**	**1**	**1**	**2**	**2**	**2**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**2**	**Semester**		**4**	
Course Name	**Financial Analysis and Decision**				
Code	**NGE54508**				
Course Type	**Generic Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic Knowledge of NBBAB5204**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Knowledge of Financial Decisions and Statement Analysis. ❖ Merchant Banking and Venture Capital.				
Course Outcomes					
CO1	Remembering and understanding the concept of capital and financial markets and its operation.				
CO2	Applying risk and uncertainty aspects of a project.				
CO3	Analysing the essential aspects of dividend decisions and policies.				
CO4	Evaluating recent issues in finance and financial services like merchant banking and venture capital.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Financial Statement Analysis and Financial Markets** Meaning, objectives, scope, calculation of Ratio analysis, fund flow analysis, cash flow analysis. Meaning, Types, importance of financial markets. Types of securities, marketing of Securities. Underwriting of Capital issues.	**15**	**1**
2	**Module II: Project Appraisal** Project finance, project feasibility study, capital investment decision, risk and uncertainty analysis through sensitivity analysis. Non-financial aspects of projects.	**15**	**2**
3	**Module III: Dividend Decisions** Dividend policies and decisions: introduction, issues in dividend policy, Walters and Gordon's model, Modigliani and Miller approaches, determinants and types of dividend policy, practical consideration in dividend policy and forms of dividends.	**15**	**3**
4	**Module IV: Financial Service and Recent Issues in Finance** Merchant Banking: Introduction, functions of merchant bankers. Venture Capital. Factoring. Commercial Papers.	**15**	**4**

Suggested Readings

1. Pandey I. M., Financial Management, Vikas, 2004, 10th Ed.
2. Van Horne, Financial Management and Policy, Prentice Hall, 2003, 12th Ed.
3. Shapiro, Multinational Financial Management, Wiley Dreamtech.

Online Resources

1. eGyanKosh: http://egyankosh.ac.in//handle/123456789/10310
2. https://www.youtube.com/watch?v=xjw9_RJAkBI

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	3	1	1		2	1	1		1	2		2	2	2
CO2	3	2	1			1		1	1	1	1	2	2	2
CO3	3	2	1	1		1	1		2	1		2	2	2
CO4		2			2				1	2		2	2	2
Avg	**3**	**1.75**	**1**	**1**	**2**	**1**	**1**	**1**	**1.25**	**1.5**	**1**	**2**	**2**	**2**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**2**	**Semester**		**4**	
Course Name	**Leadership & Personality Development**				
Code	**NSMCC5401**				
Course Type	**CC**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Pass Certificate of 10+2**	**2**	**1**	**0**	**3**
Course Objectives	To familiarize students with: ❖ Concept of Leadership and challenges related to it ❖ Evaluating the Personality Development				
Course Outcomes					
CO1	Understanding leadership concept, styles and theories of leadership and new approaches of leadership.				
CO2	Analysing Leadership skills and effective leadership for optimum use of human resources				
CO3	Applying Professionalism in Personality grooming				
CO4	Evaluating and Creating the techniques of communication in Personality Development				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**ModuleI: Introduction to Leadership:** Leadership: Concept and nature of Leadership, Styles of Leadership, Trait theory of Leadership, Behavioural theory of Leadership, Situational Theory of Leadership, Transformational & Trasactional Leadership, Recognition and motivating tips for leading Staff.	**10**	**1**
2	**ModuleII: Leadership Skills** Basic Leadership Skills, Building Technical Competency, Advanced Leadership Skills, Emerging trends in leadership, Emotional Intelligence & leadership, Nature of Executive leadership, Patterns of leadership effectiveness, Ethical leadership & issues.	**11**	**2**
3	**ModuleIII: Professionalism & Grooming** Meaning of professionalism, Developing Professionalism at workplace, Learning Time management, Dress and grooming for Success, Role of verbal and non-verbal Communication in Organization, Barriers to Communication.	**12**	**3**
4	**ModuleIV: Personality Development & Leadership** Concept of Personality, Determinants of Personality, Significance of Personality Development, Group Communication, Active Listening , Art of Public Speaking, Work ethics and Business Etiquettes, Team building exercises to understand and develop the personality.	**12**	**4**

Suggested Readings

1. John Mitchell, Natalie Mitchell & Bogdan Gudzenko (2012) - Leadership Development
2. Hurlock, E.B.(2006), Personality Development, TMH, New Delhi.
3. Stephen P. Robbins, Organization Behaviour, Pearson Prentice Hall.
4. Uday kumar Haldar, Leadership & Team Building, Oxford Publication

Online Resources

1. Personality Development, Dr Sweta Sanjog Mehta, Swayam Portal https://onlinecourses.swayam2.ac.in/cec21_mg22/preview#:~:text=The%20course%20aims%20to%20cause,in%20one's%20life%20and%20career.
2. Leadership Prof Kalyan Chakravarty and Prof Tuhenna Mukherjee, Swayam Portal https://onlinecourses.nptel.ac.in/noc19_mg34/preview

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	3	1	2	3	2	1	2			3		2	2	2
CO2	3	1	2	3	2		2			3		2	2	2
CO3	3	1	2	3	2	1	2			3		2	2	2
CO4	3	1	2	3	2		2	2		3		2	2	2
Avg	**3**	**1**	**2**	**3**	**2**	**1**	**2**	**2**	**0**	**3**	**0**	**2**	**2**	**2**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**2**	**Semester**		**4**	
Course Name	**Technical Charts and Analysis for Stock Markets**				
Code	**NSMVC5401**				
Course Type	**VC**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic Knowledge of Financial Securities**	**1**	**1**	**0**	**2**
Course Objectives	To familiarize students with: ❖ Different type of Technical charts ❖ Basics of fundamentals and Technical Analysis ❖ Understanding of Charts patterns and indicators				
Course Outcomes					
CO1	Gain the Ability to Analyse the Market at every Stage and Make Profit by Trading or Investing				
CO2	Understand and use all the Most Practical Indicators and Oscillators				
CO3	Analyze the different chart patterns and trading psychology				
CO4	Understand and applying the different indicators of Technical analysis				

Module	Course Contents	Contact Hrs.	Mapped CO
1	Basics of Fundamental and Technical Analysis, Difference between Fundamental and Technical Analysis. Basic Terminology of Technical Analysis, Technical Charts, Types of Technical Charts: Line Charts, Bar Charts, Candlestick charts,	**8**	**1**
2	Types of Candlestick Pattern: Bearish and Bullish. Types of Candlestick: Single, Hanging man, shooting star, Marubozu etc	**7**	**2**
3	Charts Patterns: Support, Resistance, Head and Shoulder, Inverse Head and shoulder, Double top, double bottom	**7**	**3**
4	Technical Analysis Indicators: Simple Moving average, exponential moving average, Relative strength Index, RSI Divergence, Stochastic Oscillators, MACD, MACD Divergence, Bollinger Bands, Gaps and Gap trading strategies in Technical Analysis, Dow Theory	**8**	**4**

Suggested Readings

1. Kevin –Security Analysis and Portfolio Management –PHI
2. Jack Clark Francis - Management of Invest, McGraw Hill
3. Shape Alexander Ballen - Investment, Eastern Economy Ed

Online Resources

1. Security Analysis and Portfolio Management, IIT Kharagpur, Dr. Chandra Sekhar Mishra, Dr. Jitendra Mahakud, https://nptel.ac.in/courses/110105035
2. Technical Analysis, eGyanKoshhttps://egyankosh.ac.in/handle/123456789/6346

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2	2		2	2	3	2	2		1		2	2	2
CO2	2	2	1	2	2		2	2	1	1		2	2	2
CO3	2	2		2	2	3	2	2		1		2	2	2
CO4	2	2		2		3	2	3		1		2	2	2
Avg	**2**	**2**	**1**	**2**	**2**	**3**	**2**	**2.25**	**1**	**1**		**2**	**2**	**2**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**2**	**Semester**		**4**	
Course Name	**Digital Marketing**				
Code	**NSMVC5402**				
Course Type	**VC**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Pass Certificate of 10+2**	**1**	**1**	**0**	**2**
Course Objectives	To familiarize students with ❖ digital marketing concept, practices, consumers online engagement and various social media platforms				
Course Outcomes					
CO1	Understand the concept, scope and functions of Digital Marketing.				
CO2	Understand various channels of Digital marketing, content andcampaign management.				
CO3	Develop insight about SEO and its types; tools and techniques of SEM.				
CO4	Application of social media marketing and it's platforms in digital marketing.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Introduction to Digital Marketing**: concept, importance and scope of digital marketing, Evolution of digital marketing. Difference between traditional and digital marketing.Contemporary best practices in digital marketing. Case-study.	**7**	**1**
2	**Acquiring and engaging users through Digital Channels**:Introduction to content marketing and management. Understanding the relationship between content and branding, mobile marketing, video marketing, Email marketing.Online campaign management- preparation, execution and tracking.Case-study	**8**	**2**
3	**Overview of SEO and SEM:**Search Engine Optimisation(SEO)- concept, importance, On-page Optimisation and Off-page Optimisation, Google Adwords.Search engine marketing (SEM)- Strategy building and execution through SEM tools and techniques. Difference between SEO and SEM. Case-study	**8**	**3**
4	**Social Media Marketing (SMM)-**concept, Importance and objectives. Blogging, social networking, introduction and use of various social media platforms in digital world.Digital innovations and trends - in Indian and global context. Case-study.	**7**	**4**

Suggested Readings

1. Vandana, Ahuja; Digital Marketing, Oxford University Press India (November, 2015).
2. Ryan, Damian; Understanding Digital Marketing: marketing strategies for engaging the digital generation; Kogan Page (3rd Edition, 2014**)**
3. Dave Evans, Susan Bratton; Social Media Marketing; The Next Generation Of Business innovation, Wiley & Sons (2010)
4. Gupta, Seema; Digital Marketing, McGraw Hill (August, 2022).

Online Resources

1. https://www.investopedia.com/terms/d/digital-marketing.asp
2. https://egyankosh.ac.in/handle/123456789/79506

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2	1	2	1	1			2	1		2	3	2	3
CO2		1	2	1	1		1	2	1		2	3	2	3
CO3	2	1	2	1	2	1		2		1	2	3	2	3
CO4	2	1	2	1	1		1	2	1		2	3	2	3
Avg	**2**	**1**	**2**	**1**	**1.25**	**1**	**1**	**2**	**1**	**1**	**2**	**3**	**2**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**3**	**Semester**		**5**	
Course Name	**Sectoral Functional Analytics**				
Code	**NBBAB5501**				
Course Type	**Discipline Specific Course**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic Knowledge of NBBAB5401**	**3**	**0**	**1**	**4**
Course Objectives	To familiarize students with: ❖ An overview of Analytics. ❖ The tools required for the functional Analytics. ❖ Skills that will help them to solve complex real-world problems in for decision support. ❖ Investors use sector analysis to assess the economic and financial prospects of a sector of the economy.				
Course Outcomes					
CO1	Remembering and applying the concepts and methods of functional analytics.				
CO2	Understanding an overview of statistical analysis of the size, demographic, pricing, competitive, and other economic dimensions of a sector of the economy.				
CO3	Applying the basic idea is that the system is viewed as computing a function.				
CO4	Analysing the Model on the basis of different Predictive Methods.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	Definition of business Analytics with real time examples, How Predictive analytics: Transforming data into future insights, Analytics trends: Past, Present & Future, Towards a Predictive enterprise.	**15**	**1**
2	Types of Financial Analytics, Difference between primary and secondary markets, Domains of Financial Analytics, Uses of Analytics across Retail banking, Investment banking, Credit ratings/targeted marketing, Fraud detection, Customer relationship management , Application of Financial Analytics across Financial Domains, Retail banking, Investment banking, Quantitative Methods in Finance, Managerial Economics and Corporate Strategy, Financial Management, Financial Modelling Basic concepts and techniques used to construct financial portfolios, Business Analysis Using Financial Statements, Strategic Investment Questions, Strategic acquisitions Questions, Strategic merger Questions.	**15**	**2**
3	**Introduction to Data Mining:** Data Mining applications, Strategy for data mining: CRISP-DM, Stages in CRISP-DM, The life cycle of a data-mining project, Data-mining successes, Data-mining failures, Skills needed for data mining. **Understand Chi-Square Statistic & Create a data-mining project** What is a Chi Square Test?, What is a Chi-Square Statistic?, Chi Square P-Values, The Chi-Square Distribution & Chi Distribution, The framework of a data-mining project, A business case: Historical data, A data-mining project in IBM SPSS Modeler, Build the model: Set roles in a Type node, Two handy operations: Filter fields and sort records.	**15**	**3**
4	IBM Watson Studio, Watson studio Components, Data preparation, Watson Machine learning, Data Refinery, Watson Studio Neural Network Modeler, IBM Watson Studio jobs, Use case with Auto AI.	**15**	**4**

Suggested Readings

1. The HR Scorecard Brian Becker, Mark Huselid, Dave Ulrich.
2. Predictive HR Analytics: Mastering the HR Metric Kirsten & Martin Edwards.
3. Investing in people. Financial Impact of Human Resource Initiatives Kirs Wayne Cascio, John Boudreau.

Online Resources

1. https://cognitiveclass.ai/courses/systemt

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	1	3	1	2		2	1	3	2	2		2	3	3
CO2		3	1	2		2		3	2	2	1	2	3	3
CO3		2			1								3	3
CO4	3	1	2		2		3	2	2		2		3	3
Avg	**2**	**2.25**	**1.33**	**2**	**1.5**	**2**	**2**	**2.66**	**2**	**2**	**1.5**	**2**	**3**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**3**	**Semester**		**5**	
Course Name	**Sectoral Functional Analytics-Lab**				
Code	**NBBAB5502**				
Course Type	**Discipline Specific Course**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic Knowledge of NBBAB5402**	**0**	**0**	**2**	**2**
Course Objectives	To familiarize students with: ❖ An overview of Analytics. ❖ The tools required for the functional Analytics. ❖ The skills that will help them to solve complex real-world problems in for decision support. ❖ Investors use sector analysis to assess the economic and financial prospects of a sector of the economy				
Course Outcomes					
CO1	Remembering and critically applying the concepts and methods of functional analytics.				
CO2	Understanding an overview of statistical analysis of the size, demographic, pricing, competitive, and other economic dimensions of a sector of the economy.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	Implementation of Sales & Revenue analysis Using IBM Tools, Explore powerful visualizations of your data in IBM Cognos Analytics and discover patterns and relationships that impact your business. Creating a dashboard: You can explore your data and easily communicate the analysis and insights that you discover Integrates reporting, modelling, analysis, dashboards, stories, and event management so you can understand your organization's data, and make effective business decisions. Create a data-mining project to predict churn in telecommunications	**30**	**1**
2	Identify relationships in the telecommunications data Derive and reclassify fields for the ACME data. Accessing IBM Cloud and Watson Studio Forecast and determine the attrition of the employees using Watson Studio. Getting started with Data Refinery and Auto AI.	**30**	**2**

Suggested Readings

1. Financial market innovation – Sectoral Analysis -Dr.Triptti Tripathi
2. Business Un Intelligence: Insight and Innovation beyond Analytics and Big Data, by B. Devlin
3. Data-Driven HR: How to Use Analytics and Metrics to Drive Performance by Bernard Marr

Online Resources

1. https://cognitiveclass.ai/courses/systemt

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	1	3	1	2		2	1	3	2	2		2	3	3
CO2		3	1	2		2		3	2	2	1	2	3	3
Avg	**1**	**3**	**1**	**2**	**0**	**2**	**1**	**3**	**2**	**2**	**1**	**2**	**3**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**3**	**Semester**		**5**	
Course Name	**Enterprise Design Thinking**				
Code	**NBBAB5503**				
Course Type	**Discipline Specific Course**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic knowledge of NBBAB5403**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Exciting field of design thinking and business processes. ❖ World of innovation and systematic process of tackling relevant business and/or social problems ❖ Skills that will help them to solve complex real-world problems in for decision support. ❖ Social and thinking space for the recognition of innovation challenges and the design of creative solutions. ❖ The Tools required for design thinking like IBM Mural				
Course Outcomes					
CO1	Remembering and Understand approaches before design thinking and evolution of design thinking with some case studies.				
CO2	Applying key habits for effective design thinking and design thinking concepts for creating models with team member's collaboration to evaluate real life scenarios.				
CO3	Analyse design thinking concepts like loop and key.				
CO4	Evaluate various technology domains and apply design thinking concepts for creating problem solving models with respect to cloud, AI, cyber etc.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: ENTERPRISE DESIGN THINKING – HISTORY, CASE STUDY** Understand what came before Design Thinking, Identify who did what to bring it about, Learn how it built upon previous approaches, See how design thinking is introduced in an organization, Understand the transformation required, What outcomes are possible.	15	1
2	**Module II: OVERVIEW, 7 KEY HABITS, THE LOOP** Get an overview of the whole approach to design thinking, understand the principles, loop and keys, determine what is most important, Learn 7 key habits of effective design thinkers, Avoid common anti-patterns, Optimize for success with these habits, Understand the importance of iteration, Learn how to observe, reflect, & make, Get ready to drill down & do tomorrow.	15	1&2
3	**Module III: ENTERPRISE DESIGN THINKING – USER RESEARCH, MAKE, USER FEEDBACK** Understand the importance of user research, Appreciate empathy through listening, Learn key methods of user research. Understand how Make fits into the Loop, Learn how to leverage Observe information, Learn Ideation, Storyboarding, & Prototyping, Understand user feedback and the Loop, Learn the different types of user feedback, Learn how to carry out getting feedback.	15	2&3
4	**Module IV: ENTERPRISE DESIGN THINKING – TEACHING, LOGISTICS, APPLICATION**	15	4

	Understand the challenges of teaching EDT, Learn valuable hints and tips, Getting ready to teach the course, Understand what type of room you need, Learn what materials and supplies you need, Learn how to set up the room, Understand the domains that are applicable, Learn about digital versus physical, Explore some technology specializations.		

Suggested Readings

1. IBM SKILLS ACADEMY.
2. The Art of Innovation by Tom Kelley.
3. The Design Thinking Toolbox: A Guide to Mastering the Most Popular and Valuable.
4. Design Thinking in Play: An Action Guide for Educators

Online Resources

1. eGyanKosh http://egyankosh.ac.in//handle/123456789/16457
2. https://www.youtube.com/watch?v=8mcClemz_pM&list=PLmwXmxSPuaRw0l9WmoKCzFAEdrjEJUCGG

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	3	3	1		2	1	1		2	2		2	2	2
CO2	3	2	2			1		1	1	1	1	2	2	2
CO3	3	2	1	1		2	1		2	1		2	2	2
CO4		2			2				1	2		2	2	2
Avg	**3**	**2.25**	**1.33**	**1**	**2**	**1.33**	**1**	**1**	**1.5**	**1.5**	**1**	**2**	**2**	**2**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**3**	**Semester**		**5**	
Course Name	**Business Policy and Strategy**				
Code	**NBBAB5504**				
Course Type	**Discipline Specific Course**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Pass Certificate of 10+2**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ The core concepts, frameworks, and techniques of strategic management. ❖ The major initiatives taken by a company's top management involving resources and performance in internal and external environments.				
Course Outcomes					
CO1	Remembering and understanding the basic concept of policy and strategy and its implementation in various business situations.				
CO2	Applying strategic planning for: Multinationals, small businesses, non-profit organizations and public sector.				
CO3	Analyzing different strategies and their impact on various organizations.				
CO4	Evaluating corporate portfolio through different techniques.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Introduction** Nature & importance of Business Policy, Development Classification of Business Policy; Mechanism of policy making Business Policy and strategy. Business policy and corporate governance.	**15**	**1**
2	**Module II: Strategic Planning and Management** Concept of corporate strategies Strategic Planning: Process, importance and 7S framework. Strategic planning for: Multinationals, small businesses, non-profit organizations and public sector.	**15**	**2**
3	**Module III: Strategy Formulation, Strategic Analysis and Choice** Objectives and goals of the organization. ETOP. Competitive analysis. Internal environment, scanning, mission and vision statement, SAP and KSF. Choice of strategy. Business level strategies: generic, cost leadership, differentiation and focus. Multi business strategies: coordination, diversification, venturing and restructuring for national and international companies. Evaluation of alternatives and selection of strategies.	**15**	**3**
4	**Module IV: Corporate Portfolio Analysis and Implementation** BCG, Ansoff model, Gap Analysis, GE model. Implementing strategy through business function, implementing strategy through structure. Leadership and Culture.	**15**	**4**

Suggested Readings

1. Lawrence R.Jauch. and Glueck William F., Business Policy and Strategic Management, Frank Brothers.
2. Kazmi, Azhar, Business Policy, Tata McGraw-Hill, New Delhi, 2000.
3. Pearce II John A. and Robinson J.R. and Richard B., Strategic Management, AITBS.

Online Resources

1. eGyanKosh: Business Policy and Strategy online available at https://egyankosh.ac.in/bitstream/123456789/16016/1/Unit-3.pdf
2. Krishna Kanta Handiqui State Open University: Business Policy and Strategy online available at https://kkhsou.ac.in/eslm/ESLM_Main/3rd%20Sem/Master%20Degree/MBA%203rd%20Sem/Business%20policy%20and%20strategic%20Management/BP&SM%20-2/BPSM%20PDF%20file/BPSM%20Block-1/Unit-1.pdf

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2	2	2	2	2	2			2	2	2	2	2	2
CO2	3		2	2	2	2	1		2	2	2	2	2	2
CO3	2	2	2	2	2	2		1	2		2	2	2	2
CO4	2	2	2	2	2	2			2	2	2	2	2	2
Avg	**1**	**2**	**2**	**2**	**1.75**	**1.75**	**2**	**2**	**2**	**2**	**1.5**	**2**	**2**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**3**	**Semester**		**5**	
Course Name	**Data Analysis using SPSS**				
Code	**NDSE54501**				
Course Type	**Discipline Specific Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic Knowledge of NBBAB5304**	**3**	1	**0**	**4**
Course Objectives	To familiarize students with: ❖ Power and functionality of IBM SPSS Statistics as a data.				
Course Outcomes					
CO1	Remembering and understating the concept of Data Analysis				
CO2	Applying and Analysing data through graphical Approaches.				
CO3	Evaluating the concept of Descriptive statistics on real life scenario				
CO4	Creating the models and testing the hypothesis				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Introduction to SPSS:** An Overview of SPSS, Data handling: open SPSS data file, save, import from other data source, data entry, labeling for dummy numbers, recode in to same variable, recode in to different variable, transpose of data, insert variables and cases, merge variables and cases.	15	1
2	**Data handling:** Split, select cases, compute total scores, table looks, Changing column, font style and sizes, Data Transformation - Syntax files and scripts - Output management. **Diagrammatic representation:** Simple Bar diagram, Multiple bar diagram, Sub-divided Bar diagram, Percentage diagram, Pie Diagram, Frequency Table, Histogram, Scatter diagram, Box plot.	15	2
3	**Descriptive Statistics:** Mean, Median, Mode, SD, Skewness, Kurtosis, Correlation, Karl Pearson's and Spearman's Rank Correlation, Regression analysis: Simple and Multiple Regression Analysis.	15	3
4	**Testing of Hypothesis**: Parametric, one sample, Two sample Independent t– test, Paired t–test, Non – parametric: One sample KS test, Mann-Whitney U test, Wilcoxon Signed Rank test, Kruskal Wallis test, Friedman test, Chi- square test. Analysis of variance: One way and Two way ANOVA.	15	4

Suggested Readings

1. George, D. 2011. SPSS for Windows Step-by-Step: A Simple Guide and Reference 18.0 Update. Eleventh Edition. Allyn and Bacon, Boston, MA, USA.
2. Green, Samuel B. and Neil J. Salkind. 2010. Using SPSS for Windows and Macintosh:
3. Analysing and Understanding Data. Sixth Edition. Prentice Hall, New Yoik, USA
4. Ho, Robert. 2006. Handbook of Univariate and Multivariate Data Analysis and Interpretation with SPSS. Chapman & Hall/CRC, New York, USA
5. Clifford E. Lunneborg (2000). Data analysis by resampling: concepts and applications. Dusbury Thomson learning. Australia.

Online Resources

1. eGyanKosh http://egyankosh.ac.in//handle/123456789/76749
2. https://www.youtube.com/watch?v=0S89RyIVu2k

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	1	3	2	2	1	1		3	1	2	2	2	2	3
CO2	1	3		2			1	3	2	2		2	2	3
CO3	1	3	2	2	1	1		3	1	2	1	3	2	3
CO4	1	3		2				3	1	2		2	2	3
Avg	**1**	**3**	**2**	**2**	**1**	**1**	**1**	**3**	**1.25**	**2**	**1.5**	**2.25**	**2**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**3**	**Semester**		**5**	
Course Name	**Data Warehousing and Mining**				
Code	**NDSE54502**				
Course Type	**Discipline Specific Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic knowledge of NBBAB5304**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Understand the architecture of Data warehouse and its organization. ❖ Introduce DM as a cutting-edge business intelligence method and acquaint the students with the DM techniques for building competitive advantage through proactive analysis, predictive modeling, and identifying new trends and behaviors. ❖ Describing and demonstrating basic data mining algorithms, methods, and tools. ❖ Identifying business applications of data mining. ❖ Overview of the developing areas - web mining, text mining, and ethical aspects of data mining.				
Course Outcomes					
CO1	Remembering what knowledge discovery and data mining are; define the concept, structure and major issues of data warehousing.				
CO2	Understanding and discover interesting patterns from large amounts of data to analyze and extract patterns to solve problems, make predictions of outcomes.				
CO3	Applying and selecting proper data mining algorithms to build analytical applications.				
CO4	Analysing and comprehending the roles that data mining plays in various fields and manipulate different data mining techniques.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	Introduction: Data Mining Definition, Steps In Data Mining, Architecture Of Data Mining System, Types Of Data For Data Mining: Relational Databases, Data Warehouses, Transactional Databases, Adverse Data Information System And Advance Applications, Classification Of Data Mining Systems, Data Mining Task Primitives, Integration Of A Data Mining System With A Data Base Or Data Warehouse System, Major Issues In Data Mining, Approaches to Build A Data Warehouse, Building A Data Warehouse, Metadata & Its Types.	**15**	**1**
2	Data Pre-processing: Need of data pre-processing, descriptive Data Summarization: Measuring the crystal Tendency, Measuring the Dispersion of data, Graphic Display of Basic Descriptive Data Summaries, Data cleaning, Data Integration and transformation, Data Reduction. Data Warehouse and OLAP Technology: Data warehouse, differences between operational Database systems and Data warehouses, Multidimensional data model. A three- tier data warehouse architecture.	**15**	**2**
3	Mining Frequent Patterns: Basic concepts Frequent Item set mining method: the Apriori Algorithm, Generating Association Rules from frequent item sets. FP-Growth Algorithm: FP Tree Representation. Frequent item set Generation in FP- Growth Algorithm.	**15**	**3**
4	Classification: General Approach to solving classification problems, Classification by decision Tree Induction: Attribute selection measure, Tree	**15**	**4**

	pruning, Bayesian Classification: Bayes' Theorem Rule based classification, Nearest neighbour classifier. Evaluating the performance of a classifier: Holdout Method, Random sub sampling, cross-validation		

Suggested Readings

1. Data Warehousing, Data Mining, and OLAP, Alex Berson, First Edition, Tata Mc Graw Hill
2. Modern Data Warehousing, Mining & Visualization Core Concepts, George M Marakas, First Edition, Pearson Education
3. Data Warehousing, Architecture & Implementation, Hawkin, Prentice Hall
4. Data Mining: Modeling Data for Marketing, Risk and Customer Relationship Mgmt, Rud, Olivia, Paperback Edition.
5. Data Mining, Data Warehousing and OLAP, Sharma, Gajendra, Second Edition
6. Data Mining with Case Studies, Gupta GK, Second Edition

Online Resources

1. eGyanKosh https://egyankosh.ac.in/bitstream/123456789/25880/1/Unit-1.pdf
2. https://www.lkouniv.ac.in/site/writereaddata/siteContent/20200412081504666 5Nandita_Kaushal_Digital_Governance.pdf

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	1	2		2	2	2		2	2	2		2	2	3
CO2			2		1	1			2		2		2	3
CO3	1	2		2	2	2	2	2	2	2		2	2	3
CO4	1	2		2	2	2		2	2	2	1	2	2	3
Avg	**1**	**2**	**2**	**2**	**1.75**	**1.75**	**2**	**2**	**2**	**2**	**1.5**	**2**	**2**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**3**	**Semester**		**5**	
Course Name	**Marketing Management**				
Code	**NGE54509**				
Course Type	**Generic Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Pass certificate of 10+2**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ All aspects of marketing, including product planning & development, promotion, distribution, pricing and branding. ❖ Theories of the marketing mix variables. ❖ Practical applications of marketing theories in the context of the marketing management.				
Course Outcomes					
CO1	Remembering and appreciate the concept of marketing in theory and practice. Identify different types of marketing environment and the forces which affect the working of the company in short and long run.				
CO2	Understanding segmentation and learn different ways of selecting the appropriate target and positioning the product in the market.				
CO3	Applying different types of products, levels of hierarchy and classification of products along with the concept of branding and its types.				
CO4	Analysing the marketing channels, channel dynamics and pricing of the products and Evaluate different promotional strategies and media planning.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	Marketing: Nature, meaning, scope, concepts and orientation towards market. Marketing mix. Customer's value and satisfaction: concepts and delivery. Marketing environment: Needs and trends in macro environment forces. Introduction to strategic marketing. Segmentation: Concept of market Segmentation, Patterns and Process of Segmentation, Segmenting Consumer Markets. Market Targeting. Positioning concept and types.	**15**	**1**
2	Product: Concepts, Product Level Hierarchy, Classification of Products, Product Mix, Product Line, Product Life Cycle, Product Positioning. Brand: Concept, Challenges, Brand Equity, Brand Repositioning.	**15**	**2**
3	Nature of Marketing Channels, Channel functions and flows, Channel Design and Management Channel Dynamics, Factors affecting choice of distribution channel Pricing: objectives, factors influencing pricing, basic methods of pricing and pricing strategies.	**15**	**3**
4	Promotion: Promotion Mix. Managing Advertisement: Objectives, Budget, Message. Media planning and Sales Promotion Tools.	**15**	**4**

Suggested Readings

1. Kotler Philip and Armstrong G., Principles of Marketing, Pearson.
2. Sherlekar S. A., Marketing Management, Himalaya Publishing House.
3. Saxena R., Marketing Management, Tata McGraw Hill.

Online Resources

1. eGyanKosh: Marketing Management online available at https://egyankosh.ac.in/handle/123456789/3415
2. NPTEL: Marketing Management online available at https://nptel.ac.in/courses/110104068

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2		2	1	2				2	3	1	2	3	2
CO2	2		2	1		2			2	3		2	3	2
CO3	2		2	1	2				2	3		2	3	2
CO4	2		2	1		2			2	3	1	2	3	2
Avg	**2**	**0**	**2**	**1**	**2**	**2**	**0**	**0**	**2**	**3**	**1**	**2**	**3**	**2**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**3**	**Semester**		**5**	
Course Name	**Social Media Marketing**				
Code	**NGE54510**				
Course Type	**Generic Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Pass certificate of 10+2**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Social media marketing concept and practices. ❖ Digital marketing practices and consumers online engagement.				
Course Outcomes					
CO1	Remembering and understanding the scope and functions of Digital Marketing & the social media marketing				
CO2	Applying different forms of various digital channels to acquire and engage consumers online.				
CO3	Analysing new digital world.				
CO4	Evaluating the latest social media practices for marketing and promotion				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Introduction** Social media- meaning and definition, social networking, Social Media Marketing –Introduction, need and objectives, Implement effective social media marketing campaigns, issues in social media marketing.	**15**	**1**
2	**Module II: Engaging Users through Social Media Platforms** Introduction to Face book, Twitter, Google +, LinkedIn, YouTube, Instagram and Pinterest; their channel advertising and campaigns, Introduction to Blogging, Create a blog post for your project. Include headline, imagery, links and post, Content Planning and writing.	**15**	**2**
3	**Module III: Digital Marketing** Introduction to Digital Marketing: The new digital world - trends that are driving shifts from traditional marketing practices to digital marketing practices, the modern digital consumer and new consumer's digital journey. Marketing strategies for the digital world - latest practices.	**15**	**3**
4	**Module IV: SEO and Current Scenario in Social Media** Overview of search engine optimization (SEO), search engine marketing, mobile marketing, video marketing, Understanding the relationship between content and branding and its impact on sales, Online campaign management, Understanding trends in social media marketing – Indian and global context.	**15**	**4**

Suggested Readings

1. Vandana, Ahuja; Digital Marketing, Oxford University Press India (November, 2015).
2. Eric Greenberg, and Kates, Alexander; Strategic Digital Marketing: Top Digital Experts Share the Formula for Tangible Returns on Your Marketing Investment; McGraw-Hill Professional (October, 2013).
3. Ryan, Damian; Understanding Digital Marketing: marketing strategies for engaging the digital generation; Kogan Page (3rd Edition, 2014).

Online Resources

1. eGyanKosh http://egyankosh.ac.in//handle/123456789/15592
2. https://www.youtube.com/watch?v=Xuq6_udbeH0&list=PLi3oNa09iwJRByiNwEJNaZ3XVKcveovzk

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2		2	1	2				2	3	1	2	3	2
CO2	2	1	2	1		2	1		2	3		2	3	2
CO3	2		2	1	2			1	2	3		2	3	2
CO4	2		2	1		2			2	3	1	2	3	2
Avg	**2**	**1**	**2**	**1**	**2**	**2**	**1**	**1**	**2**	**3**	**1**	**2**	**3**	**2**

Program	Bachelor of Business Administration -Business Analytics				
Year	3	Semester		5	
Course Name	Entrepreneurial Finance				
Code	NSMVC5501				
Course Type	VC	L	T	P	Credit
Pre-Requisite	Pass Certificate of 10+2	2	0	0	2
Course Objectives	To familiarize students with: ❖ To understand the role of finance in entrepreneurship and develop a new business plan. ❖ To analyze financial statements and ratios to assess the financial health of a start-up. ❖ To analyze the various sources of investment and also know the support provided by the state and central government for entrepreneurship. ❖ To determine the various financial support schemes provided by different institutions to entrepreneurs.				
Course Outcomes					
CO1	Understand the importance of finance in entrepreneurship and developing a business plan.				
CO2	Analysis of the financial statements and ratios to assess the financial health of a start-up.				
CO3	Identify the various investment sources and the support provided by the state and central government for entrepreneurship.				
CO4	Determine the various financial support schemes provided by different institutions to entrepreneurs.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Introduction to Entrepreneurial Finance:** Definition and scope of entrepreneurial finance, Role of finance in entrepreneurship, Characteristics of entrepreneurial finance, Developing a business plan, Estimating start-up costs and funding needs, Financial projections and forecasting, Valuation of start-ups.	8	1
2	**Financial Statements & Analysis:** Introduction to financial statements (balance sheet, income statement, and cash flow statement), financial ratio analysis for start-ups, assessing the financial health of a start-up, Benchmarking, and industry analysis.	7	2
3	**Sources of Finance:** Various sources of Investment - Basics of Venture Capital and Angel Investment - Start-up Culture - Various measures of encouragement and support being provided by the State and Central Government for strengthening the Entrepreneurial Culture.	7	3
4	**Institutional Financial Support:** Schemes and functions of rate of Industries-District Industries Centres (DICs)-IndustrialDevelopment Corporation (IDC)-State Financial Corporation (SFCs)-Small Scale IndustriesDevelopment Corporations (SSIDCs) -Khadi and Village Industries Commission (KVIC)-Technical Consultancy Organisation (TCO)- Small Industries Service Institute (SISI)-National Small Industries Corporation (NSIC)-Small Industries Development Bank of India (SIDBI).	8	4

Suggested Readings

1. Philip J. Adelman, Alan M. Marks, Entrepreneurial Finance, 5e, Pearson, 2011.
2. Steven Rogers, Entrepreneurial Finance: Finance and Business Strategies for the Serious Entrepreneur 3e, Tata Mc Graw Hill, 2014.
3. Charantimath, Poornima, Entrepreneurship Development and Small Business Enterprises, 2nd Edition, Pearson Education, 2012

Online Resources

1. https://www.youtube.com/watch?v=c9ZENOt1j_w&list=PLLy_2iUCG87CUSdZ0z0ihunS1QSrNqXFN&index=3
2. https://www.youtube.com/watch?v=UL86GGHBX5Q&list=PLLy_2iUCG87CUSdZ0z0ihunS1QSrNqXFN&index=37&pp=iAQB

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2	1	2	3	2	1	1			1	1	2	2	2
CO2	2	1	2	1	2	1	1			1	2	2	2	2
CO3	2	1	2	3	1	1	1			2	1	2	2	2
CO4	2	1	2	3	2	1	1			1	1	2	2	2
Avg	**2**	**1**	**2**	**2.5**	**1.75**	**1**	**1**	**0**	**0**	**1.25**	**1.25**	**2**	**2**	**2**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**3**	**Semester**		**6**	
Course Name	**Data Privacy and Security**				
Code	**NBBAB5601**				
Course Type	**Discipline Specific Course**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic knowledge of NBBAB5501**	**3**	**0**	**1**	**4**
Course Objectives	To familiarize students with: ❖ Different Data Security technologies. ❖ Risk Management and the different types of controls ❖ Different software available for protecting and securing data ❖ Different data security laws. ❖ Hands on Practical Tools for implementation of Data Security, Recovery and Storage Hacking.				
Course Outcomes					
CO1	Remembering top targeted industries and trends in data security and uncover why cyber criminals are changing their techniques to access data and illegal profits.				
CO2	Understanding what steps you can take to protect your organization against these threats.				
CO3	Applying and know how does "TRIM" effect SSD performance and recovery possibility.				
CO4	Analysing different ways of backing up data and information and recover a lost/deleted partition, and main the integrity of your data.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	Cyber Security, Need of Cyber Security, Domains in cyber security, Job Opportunities, Types of Attacks, Hacking vs Ethical Hacking, Types of Hackers, Phases of Hacking, Art of Information Gathering: Reconnaissance and Scanning. Familiarize with the taxonomy of cyber-attacks, Explore the enterprise cyber security domains **Explore the most frequently targeted industry sectors including**: Government, Energy and Utilities, Retail and Telecom Explore the cyber resilience framework understand the cyber resilience lifecycle	**15**	**1**
2	Introduction and Objectives, Data Security, International Laws and Standards, Data Breach, Data Remanence, Data Theft, Wireless Identity Theft, Data loss, Cause and Effects of Data Loss, HDD vs SSD, Disk Failure, HDD and SSD Health **Data Back Up**: Introduction, Back up Types, Windows cloning, folder syncing, clone partition, files history, restoration of data and windows image.	**15**	**2**
3	Risk Management, Types of Controls, Potential Risk Treatments, Single Loss Expectancy **Data Security:** Data Security in Organization, Data Recovery Fundamentals, Data Recovery Techniques, Storage Hacking, Tools and Methodology, Anomaly Detection, Air Gap, Firewall, ATM Security, Data shredding, Disk Utility, DHDerase, MyDLP, BCWipe, Nuke Drive, Shredding Test, Wipe with Cipher	**15**	**3**
4	Data Breaches – Industry Overview, Global Scale Attacks, Insider Threats and Different Data Breaches across the globe, Ransomware and Fraud Attacks. Industry Case Study.	**15**	**4**

Suggested Readings

1. Cyber Security Practitioner by IBM Corporation
2. Data Security Module by IBM Corporation

Online Resources

1. https://cognitiveclass.ai/courses/data-privacy

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	1	3		2		3	3	2		1		2	3	3
CO2		3			1	3	3	2		1		2	3	3
CO3	1	3		2		3		2				2	3	3
CO4		3		2	1	3		2		1		2	3	3
Avg	**1**	**3**	**0**	**2**	**1**	**3**	**3**	**2**	**0**	**1**	**0**	**2**	**3**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**3**	**Semester**	**6**		
Course Name	**Data Privacy and Security -Lab**				
Code	**NBBAB5602**				
Course Type	**Discipline Specific Course**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic knowledge of NBBAB5602**	**0**	**0**	**2**	**2**
Course Objectives	To familiarize students with: ❖ Data Security Methodologies. ❖ Encrypt or decrypt the data. ❖ The tools so that they can cope up with industry standard and requirements. ❖ The skills that will help them to recover and protect their Data. ❖ Social Engineering Methodologies and identity thefts				
Course Outcomes					
CO1	Remembering and learning about the different Methodologies about Steganography and Cryptography.				
CO2	Understanding how to protect from being trapped into Social Engineering Data Theft Attacks.				
CO3	Applying the skills to recover and protect their data from being compromised.				
CO4	Analysing how to create backup and restoration points as a prevention to data loss and learn about the spywares and keyloggers.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	Demonstrating use of Steganography - the art of sending secret message Using Data Encryption and Decryption techniques. Protect your data from being Social Engineered. Practical to demonstrate the concept of Data Shredding. Practical to recover Data from USB, HDD, SSD.	**30**	**1 & 2**
2	Practical to Create Backups using Cloning Partition Demonstration of Creating Backups using File History Demonstration of methodology to Protect against Identity Theft. Practical to illustrate the concept of System Restoration – Restoration of data after virus impact Demonstration of Spywares and Keyloggers	**30**	**3 & 4**

Suggested Readings

1. IBM Content/Books

Online Resources

1. https://cognitiveclass.ai/courses/data-privacy

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	1	3		2		3	3	2		1		2	3	3
CO2		3			1	3	3	2		1		2	3	3
Avg	**1**	**3**	**0**	**2**	**1**	**3**	**3**	**2**	**0**	**1**	**0**	**2**	**3**	**3**

Program	Bachelor of Business Administration -Business Analytics				
Year	3	Semester		6	
Course Name	Database Management System				
Code	NBBAB5603				
Course Type	Discipline Specific Course	L	T	P	Credit
Pre-Requisite	Basic knowledge of NDSE54502	3	0	1	4
Course Objectives	To familiarize students with: ❖ The importance of database technology in today's environment and to use this technology to manage their own data requirements. ❖ Understand database design and their applications.				
Course Outcomes					
CO1	Remembering and Understanding the role of Database management system applicable in an organization.				
CO2	Applying languages of data and architecture of DBMS.				
CO3	Analysing the handling of file and normalization of data.				
CO4	Evaluating and creating the various system devices that apply to database management system.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Introduction** Data Base Management System: Introduction, Advantages and Disadvantages. Data Models: Network data model, Hierarchical data model, Relational data model. Keys: Primary Key, Foreign Key and Candidate Key. Referential Integrity.	15	1
2	**Module II: Languages of Data and DBMS Architecture** DDL and DML. E.R. Diagram. Architecture of DBMS. Data Independence. Schema and Subschema. Functions of DBA.	15	2
3	**Module III: File Handling** Types of files: Sequential files, Random files and Indexed Sequential files. Functional Dependency. Normalization: INF, 2NF, 3NF, BCNF.	15	3
4	**Module IV: System Devices and Security System** Input and Output devices, offline storage devices, Tapes, Disks, Drums Information System and their Application. Programme Files, Security Consideration in Data Base Management System and performance improvements in Data Base.	15	4

Suggested Readings

1. Leon, Alexis. and Leon ,Matthews., Data Base Management System ,Leon Vikas Publishing.
2. Ramakrishnan, R. and J. Gehrke., (2000), Database Management Systems, McGrawHill, Company, Higher Education.
3. Elmasri, R. and S B Navathe.,(2000), Fundamentals of Database Systems, Addison Wesley.

Online Resources

1. eGyankosh https://egyankosh.ac.in/handle/123456789/35788
2. https://www.cet.edu.in/noticefiles/279_DBMS%20Complete1.pdf

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2		2	3	2			3	2	2		3	3	3
CO2	2		2	3	2	1		3		2		3	3	3
CO3	2	1		3	2		1	3	2	2		3	3	3
CO4	2	1	2	3	2			3	2	2		3	3	3
Avg	**2**	**1**	**2**	**3**	**2**	**1**	**1**	**3**	**2**	**2**	**0**	**3**	**3**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**3**	**Semester**		**6**	
Course Name	**Human Resource Management**				
Code	**NBBAB5604**				
Course Type	**Discipline Specific Course**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic knowledge of 10+2**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Importance and function of HR department. ❖ Process of recruitment and selection. ❖ Different training methods used for employees. ❖ Wage determination and welfare activities for employees.				
Course Outcomes					
CO1	Remembering HRM and its objectives and identify its importance and functions in present scenario. Meaning and importance of Human Resource Development.				
CO2	Understanding manpower planning and personnel policies and List the factors affecting recruitment and sources of recruitment.				
CO3	Applying the skills to evaluate the objectives of promotion, demotion and transfer.				
CO4	Analysing to describe the basic concepts of different training and development methods used for employees and Understand concept of career planning and counseling.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Basic of HRM:** Concept, objectives, importance and functions of HR department. Manpower planning. Personnel policies, programs and procedures. **Staffing:** Recruitment: Factors affecting recruitment, sources of recruitment. Selection: Process, selection test, interview, group discussion, orientation, placement, promotion, demotion, transfer and job analysis	**15**	**1**
2	Objectives and importance of training. Training methods: on the job training, vestibule training, apprenticeship. Development methods: case study, business games, in basket, role playing, sensitivity training, transactional analysis, special courses, coaching, understudy, position rotation, multiple management, selective readings, special meetings and special projects Welfare activities, Health and safety to workers, social security measures. Wages and salary determination, Performance appraisal: objectives, methods and job evaluation	**15**	**2**
3	**HRD:** Meaning, need, mechanism, processes and outcomes, HRD strategies, HRD areas, individual employee, the role, the team, the Organization. HRM matrix. Role of line manager in HRD. Various forms of HRD Organization, HRD departments and their tasks. Trends of issues relating to HRD functions. Task Analysis: Meaning & Uses. Potential Appraisal	**15**	**3**
4	**Job Enrichment:** Concept, Principles, steps for job enrichment, hurdles in job enrichment, making job enrichment effective, job and work redesign. **Stress Management:** Definition, sources of stress, consequences of stress, managing stress. Introduction to HR Analytics, Functions and needs of HR Analytics, Key issues in HR Analytics, Dealing with challenges in HR Analytics, Basic Tools in HR Analytics. Meaning and concept of Human Resource Information system.	**15**	**4**

Suggested Readings

1. Aswathappa K., Human Resource and Personnel Management, TMH, 5th Edition.
2. Rao V.S.P., Human Resource Management: Text and Cases, Excel Books, 2nd Edition.
3. Ivansevich, Human Resource Management, Tata McGraw Hill, 10th Edition.
4. Predictive HR Analytics: Mastering the HR Metric Kirsten & Martin Edwards

Online Resources

1. NPTEL: Human Resource Management & Development online available at https://onlinecourses.nptel.ac.in/noc20_hs48/preview
2. eGyanKosh: Human Resource Management and Development online available at https://egyankosh.ac.in/handle/123456789/25214

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2		2	1	2		1		1	3		3	3	3
CO2	2	2	2						1	2		3	3	3
CO3	2	1		1	2		2		1				3	3
CO4	2		2		2		2	2	1	2		2	3	3
Avg	**2**	**1.5**	**2**	**1**	**2**	**0**	**1.66**	**2**	**1**	**2.3333**	**0**	**2.66**	**3**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**3**	**Semester**		**6**	
Course Name	**Business Data Management**				
Code	**NDSE54503**				
Course Type	**Discipline Specific Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic knowledge of NBBAB5104 & NGE54504**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Identify the techniques used to represent and structure this data ❖ Understand the business context: consumption patterns, micro-economic concepts underlying demand and supply ❖ Get a handle on the data that originates from business processes.				
Course Outcomes					
CO1	Remembering how businesses operate, and how they are actively managed using data dashboards.				
CO2	Understanding how to work with large data sets.				
CO3	Applying firm-level and industry-level data.				
CO4	Analysing and gaining skills on the use of worksheets to organise, interpret and present data.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	Consumption and demand: Micro & Macroeconomics: the role of data, production, consumption and exchange, consumption baskets, sources of consumer survey data Micro-economic concepts: Utility: cardinal vs ordinal, indifference curves. Demand and supply curves, changes in demand and elasticity. production cost, cost curves. Make vs buy decisions, production quantity decisions Firm level strategies and performance data: Objectives and types of pricing strategies, analysis of firm performance - key ratios. Analysis examples: Ultratech, Page Industries, Nestle, TCS	**15**	**1**
2	Analysing industry level data: Industry definition and classification codes, IIP and PMI, industry market structure and concentration indices, competitive positioning in an industry - Porter's five forces. Analysis examples: Cement industry, Textile industry, FMCG industry, IT industry Case study 1 - Fabmart (E-Commerce): Introduction to E-Commerce, Fabmart case introduction, explanation of data set & questions to be answered, revenue pareto, volume pareto, scatter plot of sales and revenue, revenue trend Fabmart case continued: Sales analysis, organisation of distribution centre, analysis of sales trends, average days of inventory, ledger, avoiding stockouts	**15**	**2**
3	Nature of Marketing Channels, Channel functions and flows, Channel Design and Management Channel Dynamics, Factors affecting choice of distribution channel Pricing: objectives, factors influencing pricing, basic methods of pricing and pricing strategies.	**15**	**3**
4	Promotion: Promotion Mix. Managing Advertisement: Objectives, Budget, Message. Media planning and Sales Promotion Tools.	**15**	**4**

Suggested Readings

1. Business Analytics for Managers- Taking business intelligence beyond reporting, Gert H N Laursen, Jesper Thorlund 2nd Edition Wiley
2. Managerial Economics in a Global Economy- Dominick Salvatore Oxford University Press.

Online Resources

1. https://www.youtube.com/watch?v=FexbZQph2uM&list=PLZ2ps__7DhBbJ-X4TNz-elPXEvBN30iZq
2. eGyanKosh http://egyankosh.ac.in//handle/123456789/64510

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2		2	3	2			3	2	2		3	3	3
CO2	2		2	3	2	1		3		2		3	3	3
CO3	2	1		3	2		1	3	2	2		3	3	3
CO4	2	1	2	3	2			3	2	2		3	3	3
Avg	**2**	**1**	**2**	**3**	**2**	**1**	**1**	**3**	**2**	**2**	**0**	**3**	**3**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**3**	**Semester**		**6**	
Course Name	**Research Methodology**				
Code	**NDSE54504**				
Course Type	**Discipline Specific Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic knowledge of NBBAB5304**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: Core concepts, frameworks, and techniques of Research Methodology. Methods of data collection, data analysis and report writing.				
Course Outcomes					
CO1	Understand the basic concept of Research methodology and its implementation in various business situations.				
CO2	Examining the impact of sampling and its techniques and sources of data collection.				
CO3	Analysing measurement scale and data processing. Apply and relate decisions to formulate a good hypothesis.				
CO4	Analysing clear and meaningful understanding of business reports and its characteristic				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Introduction:** Meaning, objectives, types and significance of Research. Research Methods versus Methodology **Process of Research:** Steps involved in research process, Research problem and its selection, Necessity of defining the problem, techniques involved in defining a problem with example. **Research Design, Sample Design and Data Collection:** Methods of Research Design, Sampling- Concept & types, Data collection methods, Preparation of Questionnaire and Schedule, Types of Questions. **Preparation of Dissertation:** Types and layout of Research, Precautions in preparing the research dissertation, Drawing figures, graphs, tables, footnotes, references etc., discussion of results.	**15**	**1**
2	**Statistical Techniques for Analysing Data:** Sources, acquisition and interpretation of data, Graphical representations, Measures of Central tendency measures of Dispersion, Importance of sampling distributions. Testing of Hypothesis: Parametric and Non-Parametric tests. Application of analysis of variable (ANOVA) and Covariance (ANCOVA). **Research Modeling:** Types of Models, Model building and stages, Data consideration and testing, Heuristic and Simulation modeling.	**15**	**2**
3	**Philosophy and Ethics:** Introduction to philosophy: definition, nature and scope, concept, branches, Ethics: definition, moral philosophy, nature of moral judgments and reactions **Scientific Conduct:** Ethics with respect to science and research, Intellectual honesty and research integrity, Scientific misconducts: Falsification, Fabrication, and Plagiarism (FFP), Redundant publications: duplicate and overlapping publications, salami slicing **Publication Ethics:** definition, introduction and importance, Best practices / standards setting initiatives and guidelines: COPE, WAME, etc., Conflicts of interest, Publication misconduct: definition, concept, problems that lead to unethical behavior and vice versa, types, Violation of publication ethics,	**15**	**3**

	authorship and contributor ship, Identification of publication misconduct, complaints and appeals, Predatory publishers and journals		
4	**Open Access Publishing:** Open access publications and initiatives, SHERPA/RoMEO online resource to check publisher copyright & self-archiving policies, Software tool to identify predatory publications developed by SPPU, Journal finder / journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggester, etc. **Publication Misconduct:** Group Discussions-Subject specific ethical issues, FFP, authorship, Conflicts of interest, Complaints and appeals: examples and fraud from India and abroad. Software tools- use of plagiarism software like Turn tin, Urkund and other open source software tools **Databases and Research Metrics:** Databases- Indexing databases, Citation databases: Web of Science, Scopus, etc. Research Metrics- Impact Factor of journal as per Journal Citation Report, SNIP, SIR, IPP, Cite Score. Metrics: hindex, g index, i10 index, altmetrics	**15**	**4**

Suggested Readings

1. Research Methodology by Deepak Bhattacharya, Excel Books
2. Business Statistics, Sharma J K, Pearson Education 2nd Edition.
3. Statistics for Management, Pearson 2000, Levin Rubin, New Delhi, 7th Edition
4. Fundamentals of Information Technology, Leon, (Vikas)
5. Bird, A. (2006) Philosophy of science, Routledge.
6. MacIntyre, Alasdair (1967) A Short History of Ethics, London.
7. P. Chaddali, (2018) Ethics in Competitive Research: Do not get scooped; do not get plagiarized, ISBN:978-9387480865
8. National Academy of Sciences, National Academy of Engineering and Institute of Medicine (2009) On Being a Scientist: A Guide to Responsible Conduct in Research: Third edition, National Academics Press.

Online Resources

1. Resnik, D. B. (2011) What is ethics in research & why is it important. National Institute of Environmental Health Sciences, 1-10. Retrieved from https://www.niehs.nih.gov/research/resources/bioethics/whatis/index.cfm
2. Bcall, J. (2012). Predatory publishers are corrupting open access. Nature, 489(7415), 179—179. https://doi.org/10.1038/489179a
3. Indian National Science Academy (INSA), Ethics in Science Education, Research and Governance (2019), ISBN:978-81-939482-1-7. http://www.insaindia.res.in/pdf /Ethics_Book.pdf

Course Articulation Matrix

PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	1	3		2		3	3	2		1		2	3	3
CO2		3	1		1	3	3	2		1	1	2	3	3
CO3	1	3		2		3		2	1			2	3	3
CO4		3		2	1	3		2		1		2	3	3
Avg	**1**	**3**	**1**	**2**	**1**	**3**	**3**	**2**	**1**	**1**	**1**	**2**	**3**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**3**	**Semester**		**6**	
Course Name	**Project Management**				
Code	**NGE54511**				
Course Type	**Generic Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic knowledge of NGE54507**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ The concepts, processes, methods, techniques and tools required for the proper selection and management of each stage of the project. ❖ Techniques of project appraisal and risk control, needed for meeting stakeholder expectations.				
Course Outcomes					
CO1	Remembering how to examine the tools and techniques of project management to ensure successful delivery of projects with available resources and Explore the use of Feasibility study and its implications in the selection of best available project.				
CO2	Understanding and developing an understanding of technological, financial, Environmental and marketing appraisal of a project.				
CO3	Applying the various types of costs involved in the project and understand the principles of the project lifecycle.				
CO4	Analysing the different kinds of risk associated with project and use of risk minimization techniques in projects.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	Introduction to project management, starting a new venture, concept of projects. Characteristics, need and scope of project management. Project financing. Identification of investment opportunities. Preliminary screening and Project formulation. Feasibility study: Pre-feasibility and project feasibility. Life cycle phases of project.	**15**	**1**
2	Market and Demand Analysis: Situational Analysis and Specification of Objectives. Collection of Secondary Information, Conduct of Market Survey, Characterization of Market. Demand Forecasting, Uncertainties in Demand Forecasting. Market Planning, Technical Analysis of project: Manufacturing Process/ Technology, Technical Arrangements, Material Inputs and Utilities, Product Mix, Plant Capacity, Location and Site, Machineries and Equipment, Structures and Civil Works, Environmental Aspects, Project Charts and Layouts. Schedule of Project Implementation, Need for Considering Alternatives.	**15**	**2**
3	Financial analysis of projects. Discount rates as project appraisal criteria. Social cost-benefit analysis. Environmental appraisal of projects.	**15**	**3**
4	Project risks: Types of Project risks and measures of Project risks. Risk identification and risk analysis, Cost control. Network Techniques: Development of Project Network, Time Estimation with Simple Practical Problem, Determination of the Critical Path, Resource allocation, Scheduling , PERT Model, CPM Model	**15**	**4**

Suggested Readings

1. Marwah., Project Management, Wiley Dreamtech.
2. Chaturvedi and Jauhari., Project Management, Himalaya Publishing.
3. Chandra, Prasanna., Project: Preparation, Appraisal, Budgeting and Implementation, TMH, 5th Ed.
4. Mishra - Project Management, Excel Books.
5. Goyal, B.B., Project Management: A Development Perspective, Deep and Deep.
6. Gopalan., Project Management Core Text Book, Wiley.

Online Resources

1. eGyanKosh: Project Management online available at https://www.egyankosh.ac.in/handle/123456789/10726
2. Project Management online available at https://www.manage.gov.in/studymaterial/PM.pdf

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	3		3		1	2		2				2	2	2
CO2	2			1		2	1			2	1	2	2	2
CO3	3	1	3		1	2		2	1			2	2	2
CO4	2	1		2		2	1				1	2	2	2
Avg	**2.5**	**1**	**3**	**1.5**	**1**	**2**	**1**	**2**	**1**	**2**	**1**	**2**	**2**	**2**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**3**	**Semester**		**6**	
Course Name	**Supply Chain Management**				
Code	**NGE54512**				
Course Type	**Generic Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Pass Certificate of 10+2**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Develop understanding of basic concepts in Supply Chain Management and allied functions.				
Course Outcomes					
CO1	Remembering the basics of different aspects of Supply Chain Management with a focus on creating a successful venture with decision- and system-oriented perspective.				
CO2	Understanding the concept of Supply Chain Management terms.				
CO3	Applying the applications of Supply Chain Management to the business.				
CO4	Analysing the role of IT in Supply Chain Management				

Module	Course Contents	Contact Hrs.	Mapped CO
1	Concept & Definitions in Supply Chain, Brief History of Evolution of Supply Chain Management, Objectives of a Supply Chain, Stages of Supply chain, Cycle view of Supply Chain Process, Decision Phases in Supply Chain Management, Key issues in SCM, Supply Chain Management Framework, Supply Chain Components, Flows in Supply Chain Management, Obstacles of streamlined SCM.	**15**	**1**
2	Basic Terms from Supply Chain Management such as –Upstream, Downstream, Information/Material Flow, Push/Pull System, Value added services, Structure of a SC, Push based SC, Pull based SC, Trade-off between Push & Pull, Identifying appropriate Push & Pull Strategy for SC. Understanding the Benchmarking Concept, Benchmarking Process SCM.	**15**	**2**
3	Supply Chain Drivers and Obstacles, Resources & capacity Management, Procurement & supplier focus, Inventory Management, Operations Management, Distribution Management in SCM, Bullwhip effect. Concept of ERP in SCM, Quick Response and Accurate Response System in SCM.	**15**	**2 & 3**
4	Overview of Customer Focus and Demand, Role of Computer / IT in Supply Chain Management, CRM Vs SCM, Green Supply Chain Management, Outsourcing-basic concept, Future of SCM, New Developments in Supply Chain Management.	**15**	**3**

Suggested Readings

1. Raghuram G. (I.I.M.A.) - Logistics and Supply Chain Management (Macmillan, 1st Ed.)
2. Krishnan Dr. Gopal - Material Management, (Pearson, New Delhi, 5th Ed.)
3. Agarwal D.K. - A Text Book of Logistics and Supply chain Management (Macmillan, 1st Ed.).
4. Sahay B.S. - Supply Chain Management (Macmillan, 1st Ed.)
5. Chopra Sunil and Peter Meindl - Supply chain Management (Pearson, 3rd Ed.)
6. Sarika Kulkarni: Supply Chain Management, Tata Mc- Ashok Sharma Graw Hill Publishing Co Ltd., New Delhi, 2004

Online Resources

1. eGyanKosh https://egyankosh.ac.in/handle/123456789/81765
2. https://sjce.ac.in/wp-content/uploads/2021/10/jnu-Supply-Chain-Management.pdf

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	3		3		1	2		2				2	2	2
CO2	2			1		2	1			2	1	2	2	2
CO3	3	1	3		1	2		2	1			2	2	2
CO4	2	1		2		2	1				1	2	2	2
Avg	**2.5**	**1**	**3**	**1.5**	**1**	**2**	**1**	**2**	**1**	**2**	**1**	**2**	**2**	**2**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**4**	**Semester**		**7**	
Course Name	**Business Intelligence**				
Code	**NBBAB5701**				
Course Type	**Discipline Specific Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic knowledge of NBBAB5101**	**3**	**0**	**1**	**4**
Course Objectives	To familiarize students with: ❖ Understand the fundamentals of database theory and acquire the knowledge of Business Intelligence and Analytics. ❖ To Understand Business Processes and KPI's and Become an expert in Statistics, Decision making, and problem solving. ❖ Analyze current and historical data and discover how to find trends, market conditions, and research competitor positioning. ❖ Understanding visualization and Report studio.				
Course Outcomes					
CO1	Remembering and understanding how analytics provided a solution to industries using real case studies.				
CO2	Applying reporting application, its interface, and the different report types.				
CO3	Analysing different types of advanced reports and find insights with the help of KPI's for business growth.				
CO4	Evaluating powerful professional visualizations in Cognos and Able to create Interactive dashboards, stories and Pins.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Introduction of Business Intelligence and Processes** Introduction to BI and types, Analytics types, ETL Process, Data visualization techniques, Business Functions, Processes and KPIs, KPI definition and calculation, Understanding how business analytics can help turn data into insight, how to apply business intelligence, accessing content, use of reports, and create dashboards, Learning how personalize the IBM Cognos Analytics portal, Present information in the form of metrics, KPIs, reports, and dashboards, Perform quantitative and qualitative business analysis	**15**	**1**
2	**Module II: Reporting in BI** **Reporting types and uses,** Introduction to reporting studio, Report studio user interface, Creating, save and run reports, Report templates, managing reports, Types of reports, List reports, Crosstab reports charts, tables, repeated tables, text items, blocks, formatting a report, Report layout guidelines, working with filters, report templates, prompts, query calculation, drill through using reports, Navigating between pages, query calculation. Creating dynamic headers and titles that reflect report data, navigating to specific locations in reports, creating a customer invoice report, creating a report using an external data file, Using single data items to summarize report information.	**15**	**2**
3	**Module III: Dashboards and Visualization** Introduction to dashboards and its features, Basic Charts in Cognos, data visualization in BI, types of visualization in BI Demonstrate Hierarchies, Data Granularity and Highlighting features in charts, Perform Sorting,	**15**	**3**

	Filtering and Grouping techniques, implementing the widgets, Data processing techniques, working with Dashboards, pins and exploration. Describing characteristics of RAVE visualizations with Active Reports.		
4	**Module IV: Advance Reporting and Analytics** Examining the report specification structure, Modifying a report specification, Distributing reports using bursting, Creating burst keys, Describing Active Reports, and their value , Converting existing reports to Active Reports, Explaining security considerations in Active Reports , Debugging Active Report behaviour, working with connection and behaviour, Filtering and selecting active report controls, Modifying the interactive behaviour of report controls , Identifying active report controls and variables ,Controlling data display using decks and data decks , Optimizing decks for performance	**15**	**4**

Suggested Readings

1. IBM Course Material

2. Information Dashboard Design, Stephen Few, O'Reilly

Online Resources

1. https://cognitiveclass.ai/courses/course-v1:IBM+GPXX0JZ4EN+v1

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1		2		1	1			3	1	2		2	3	3
CO2	1	2		1				3	1	2	1	2	2	3
CO3		1	1	1			1	3	1	2		2	2	3
CO4		2	1	1		1	1	3	1	2		2	2	3
Avg	**1**	**1.75**	**1**	**1**	**1**	**1**	**1**	**3**	**1**	**2**	**1**	**2**	**2.25**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**4**	**Semester**		**7**	
Course Name	**Business Intelligence Lab**				
Code	**NBBAB5702**				
Course Type	**Discipline Specific Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic knowledge of NBBAB5102**	**0**	**0**	**2**	**2**
Course Objectives	To familiarize students with: ❖ Understand the fundamentals of database theory and acquire the knowledge of Business Intelligence and Analytics. ❖ To Understand Business Processes and KPI's and Become an expert in Statistics, Decision making, and problem solving. ❖ Analyze current and historical data and discover how to find trends, market conditions, and research competitor positioning. ❖ Understanding visualization and Report studio.				
Course Outcomes					
CO1	Remembering and understanding IBM Cognos Analytics and its position within an analytics solution. group, sort, and format list reports. Understand complex Crosstabs using drag and drop functionality, Present data using different chart types. Use micro charts for quick overview of data inside other data containers.				
CO2	Analyze current and historical data and discover how to find trends, market conditions, and research competitor positioning and create different types of advanced reports and find insights with the help of KPI's for business growth. Introduction to IBM Cognos Active Reports, Use Active Report connections, Active Report charts, visualizations, and decks.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I:** Create a report from a dimensionally-modelled relational data source. Create a report from a personal data source. Create a report using filters, detail filters on fact data in a report. Create complex crosstab reports. Create a gauge report and a pie chart report.	**30**	**1**
2	**Module II:** Create a prompt by adding a parameter, add value and text-box prompt in a report. Add calculations to a report and display prompt selections in the report title. Reuse objects and layout components within the same and different reports. You have been asked to create a report that displays revenue by order method, region and year. Management wants to enable users to drill-through from this report to a report that has more detailed information when required. You want to create an interactive Active Report using animated charts from RAVE visualizations. You will create a report displaying data using different visualizations to better engage the consumer.	**30**	**2**

Suggested Readings

1. IBM Courseware
2. The Elements of Data Mining, Statistical Learning, Inference, and Prediction, Robert Tibshirani, Trevor Hastie, Jerome Friedman.
3. Desktop (2nd Edition)

Online Resources

1. https://cognitiveclass.ai/courses/course-v1:IBM+GPXX0JZ4EN+v1

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1		2		1	1			3	1	2		2	3	3
CO2	1	2		1				3	1	2	1	2	2	3
Avg	**1**	**2**	**0**	**1**	**1**	**0**	**0**	**3**	**1**	**2**	**1**	**2**	**2.5**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**4**	**Semester**		**7**	
Course Name	**System Analysis & Designing**				
Code	**NDSE54505**				
Course Type	**Discipline Specific Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Pass Certificate of 10+2**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Understand system analysis and design skill in information management. ❖ Understand waterfall model (system development life cycle), system analysis and Design Technique (Process Modeling (DFDs), Logical Modeling (decision tree, decision table, structured English).				
Course Outcomes					
CO1	Remembering and understanding different phases of systems development life cycle				
CO2	Applying different fact-finding techniques in system analysis and design.				
CO3	Analysing logical and Physical Design and requirement of Form Design, Input Design, Output Design				
CO4	Evaluating implementation and maintenance of information systems.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I Overview of Systems Concepts:** Introduction to System Concept: Characteristics of the system, Elements of a System, Types of Systems, Physical and Abstract System, Open and Closed System, Formal and Informal System; Types of Information System, Needs of Information Systems, Qualities of Information System; Software Development Life Cycle (SDLC); Role and Attributes of System Analyst.	**15**	**1**
2	**Module II System Analysis:** Fact Finding Technique (Information gathering tools): Review of Literature, On-Site observation, Interviews and Questionnaires; The Tools of Structured Analysis: Data Flow Diagram, Components of a DFD, Zero Level DFD, DFD Transformation and Decomposition, Context Diagram, Leveling a DFD; Data Dictionary, Structured English, Decision Tree, Decision Table, Feasibility Study: Economic Feasibility (Cost & Benefit Analysis), Organizational Feasibility, Technical Feasibility, Behavioral Feasibility study, Steps in Feasibility study.	**15**	**2**
3	**Module III System Design: Process of Design:** Logical and Physical Design, Structured Design, Functional Decomposition. Form Design, Classification of Forms, Requirement of Form Design, Input Design, Output Design.	**15**	**3**
4	**Module IV System Testing And Quality Assurance:** System Testing, Types of System Tests, Quality Assurance, Quality factors specifications, Levels of Quality Assurance. Audit Trail; Software Maintenance. Hardware and Software Selection Procedure	**15**	**4**

Suggested Readings

1. System Analysis and Design Methods, Whitten, Bentaly and Barlow, Galgotia Publication.
2. System Analysis and Design Elias M. Award, Galgotia Publication
3. Modern System Analysis and Design, Jeffrey A. Hofer Joey F. George Joseph S. Valacich Addison Weseley.

Online Resources

1. https://onlinecourses.nptel.ac.in/noc23_ee126/preview
2. http://egyankosh.ac.in//handle/123456789/9847

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	1	1		2	1		1	3	2	2	1	2	3	2
CO2	1	2	1	2	1		1	3	2	2		2	3	2
CO3	1	1		2	1	1	1	3	2	2		2	3	2
CO4	1	1		2	1		1	3	2	2		2	3	2
Avg	**1**	**1.25**	**1**	**2**	**1**	**1**	**1**	**3**	**2**	**2**	**1**	**2**	**3**	**2**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**4**	**Semester**		**7**	
Course Name	**Operating System**				
Code	**NDSE54506**				
Course Type	**Discipline Specific Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic knowledge of NGE54502**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Able to Understand Operating systems and Different types of Operating systems. ❖ Develop an understanding of Processes, and CPU scheduling and able to solve process synchronization problems. ❖ Understand issues resource allocation and manage deadlock handling and memory management. ❖ Explain paging and segmentation methods suitable for virtual memory. ❖ Able to manage disk spaces management of file systems.				
Course Outcomes					
CO1	Remembering the main principles and techniques used to implement processes and threads as well As the different algorithms for process scheduling.				
CO2	Understanding the main mechanisms used for inter-process communication.				
CO3	Applying the skills to give the rationale for virtual memory abstractions in operating systems.				
CO4	Analysing the ability to evaluate security risks in operating systems and understand the role operating systems can and should play in establishing security.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Introduction and Process Management:** Operating System: System Components, System Calls and its types, System Programs; Types of Operating System; Operating System Structure: Simple Structure, Layered Approach, Microkernels, Exokernels; Virtual machine; Introduction to Process: Process States, Process Control Block; Process Scheduling: Scheduling Queues, Schedulers, Context Switch, Scheduling Objectives, Scheduling Criteria; Scheduling Algorithms: First Come First Serve, Shortest Job First, Round Robin, Priority; Multiple- Processor Scheduling; Real-Time Scheduling; Multilevel Feedback Queue Scheduling; Threads.	**15**	**1**
2	**Process Synchronization and Deadlocks:** Critical Section Problem; Peterson's Solution; Semaphore: Usage of Semaphore; Classical Problems of Synchronization: Producer-Consumer, Readers-Writer, Dining Philosophers; Deadlock System Model; Deadlock Characterization: Necessary Condition, Resource Allocation graph; Deadlock Handling Methods: Deadlock Prevention, Deadlock Avoidance Mechanisms: Resource Allocation graph Algorithm, Banker's Algorithm, Deadlock Detection and Recovery.	**15**	**2**
3	**Memory Management:** Memory Management Strategies: Address Binding, Logical and Physical Address Space, Dynamic Linking; Swapping; Contiguous and Non- Contiguous Memory Allocation; Paging; Segmentation; Virtual Memory Management Concept; Demand Paging; Page Replacement Policies: Basic Page Replacement, FIFO Page Replacement, LRU Page Replacement, Optimal Page Replacement,	**15**	**3**

	Counting Based Page Replacement; Allocation of Frames: Minimum Number of Frames, Allocation Algorithm, Global Versus Local Allocation; Thrashing: Cause of Thrashing, Working Set Model.		
4	**Storage Management:** File Concept: File Attribute, File Operations, File Types, File Structure; File Access Method: Sequential Method, Direct Access Method; Directory Structure; File System Implementation: File System Structure, Allocation Methods, Free space Management; **Secondary Storage Structure:** Disk Structure, Disk Scheduling Algorithms, Disk Management.	**15**	**4**

Suggested Readings

1. Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, "Operating System Concepts", Wiley India, 2009, 8th edition.
2. Andrew S. Tanenbaum, "Modern Operating Systems", PHI, 3rd Edition
3. Elmasri, Carrick, Levine," Operating Systems: A Spiral Approach ", TMH

Online Resources

1. https://onlinecourses.nptel.ac.in/noc23_cs101/preview
2. http://egyankosh.ac.in//handle/123456789/11839

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2		2	3	2			3	2	2		3	3	3
CO2	2		2	3	2	1		3		2		3	3	3
CO3	2	1		3	2		1	3	2	2		3	3	3
CO4	2	1	2	3	2			3	2	2		3	3	3
Avg	**2**	**1**	**2**	**3**	**2**	**1**	**1**	**3**	**2**	**2**	**0**	**3**	**3**	**3**

Program	Bachelor of Business Administration -Business Analytics				
Year	4	Semester		7	
Course Name	Management Accounting				
Code	NDSE54507				
Course Type	Discipline Specific Elective	L	T	P	Credit
Pre-Requisite	Pass Certificate of 10+2	3	1	0	4
Course Objectives	To familiarize students with: ❖ Management accounting concepts related to the management functions of planning, control, and decision making. ❖ Management accounting tools and quantitative techniques that can be used to analyze how business processes consume resources and create value for a firm. ❖ Management accounting data and analytical skills necessary to diagnose complex business problems in accounting context.				
Course Outcomes					
CO1	Remembering and Appreciate the usefulness of management accounting in management decision making. Describe the role of management accounting within an organization.				
CO2	Understanding and Identify the relevant inflows and outflows of funds in different situations and use this information to analyze and make a variety of short-term, operational decisions and long-term decisions.				
CO3	Applying the practice of how costs behave and use this information in a range of decisions.				
CO4	Analysing to State the meaning, objectives and structure of responsibility accounting as divisional performance measurement. Discuss the features of different budgeting systems and undertake budget variance analysis.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	Meaning, Nature, Scope and Function of Management Accounting, Role of Management Accounting in decision making, Management Accounting Vs Financial Accounting, Tools and Techniques of Management Accounting.	15	1
2	Meaning and components of financial statements. Objectives of financial statement Analysis, Methods of financial Statement Analysis: Ratio Analysis, classification of Ratios: Profitability Ratios, Turnover Ratios, Liquidity Ratios, Advantages and Limitation of Accounting Ratios. Fund flow statement, Cash Flow Statement as per Accounting Standard 3.	15	2
3	Meaning, Advantages and Limitation, Marginal Costing as a tool for decision making: Make or Buy, Change in product Mix, Pricing Decision, Exploring a New Market, Shut Down Decision. Cost Volume Profit Analysis, Break Even Point. Meaning of Standard cost and Standard Costing, Advantages and Application. Variance Analysis: Material and Labour Variance, Responsibility Accounting.	15	3
4	Meaning of Budget and Budgetary control, Objectives, Merits and Limitations, Types of Budgets: Fixed and Flexible Budget, Cash Budget, Zero Base Budgeting and Performance Budgeting.	15	4

Suggested Readings

1. Khan, M. Y. and Jain, P.K., Management Accounting, Tata McGraw Hill Education.
2. Maheshwari, S. N., Management Accounting, Sultan Chand and Sons.
3. Sharma, R. K., Management Accounting, Kalyani Publishers.
4. Arora, M.N., Cost and Management Accounting, Vikas Publishing.

Online Resources

1. eGyanKosh: Cost and Management Accounting online available at https://egyankosh.ac.in/handle/123456789/71348.

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2	3	1	2		1		1	2	1		2	2	3
CO2	2	3	2	2					2	2		2	2	3
CO3	2	1	1	2	1	2		1	1		1	2	2	3
CO4	2	2	1	2		3	1	1	2	1		2	2	3
Avg	**2**	**2.25**	**1.25**	**2**	**1**	**2**	**1**	**1**	**1.75**	**1.33**	**1**	**2**	**2**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**4**	**Semester**	**7**		
Course Name	**Securities Analysis & Portfolio Management**				
Code	**NDSE54508**				
Course Type	**Discipline Specific Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic Knowledge of NGE54507**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Stock markets of India, its terminology, types of securities, the determinants of the price Behavior of securities, evaluation of fair price, and a conceptual insight to the valuation of securities. ❖ Investment decisions related to financial assets, the risks and the returns involved. ❖ The functioning of securities market alongside the theories and concepts involved in portfolio management				
Course Outcomes					
CO1	Understand the concept of Security, derivatives and mutual funds and Evaluate role of SEBI with regard to Secondary Markets& Credit rating services				
CO2	Apply valuation models to estimate the value of stocks and bonds.				
CO3	Analyze the advantages and disadvantages of investing in security markets and Measure risk and return, analyze RBI guidelines for credit & market risk				
CO4	Calculate how financial derivatives like futures and options are valued and prepare a portfolio that meets an investor's risk and return objectives and satisfies investment constraints.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Introduction and Regulatory Framework** Introduction and regulatory framework, Securities: Investor Vs Speculator, Types of Investors, Aim & Approaches of Security Analysis. Trading Securities; Equity and Bonds/Debentures. Stock Exchanges: Listing of securities, Trading and operational mechanism of stock exchanges, types of order, margin trading, Settlement and clearing	**15**	**1**
2	**Module II: Risk and Return** Concept of Risk, Measures of risk and return, calculation, trade off, systematic and unsystematic risk components. Nature of Stock Markets: EMH (Efficient Market Hypothesis) and its implications for investment decision, Fundamental Analysis: Approach to Equity valuation – economy, industry and company analysis, Technical analysis: technical analysis charts: candlestick, bar, and line charts, Price trends, Gap Wave theory and Dow theory, Technical vs fundamental analysis.	**15**	**2**
3	**Module III: Valuation** Valuation concepts: different approaches to valuation, Valuation of Convertibles & Warrants, Valuation of Future & option, Estimation of Net asset value of mutual funds. Valuation of Equity: Nature of equity instruments, Equity Valuation Models, Technical Approach to Equity valuation–overview of concept & tools used, Valuation of Debentures/Bonds: nature of bonds, valuation, Bond theorem, Yield to Maturity.	**15**	**3**

4	**Module IV: Portfolio Management** Portfolio Analysis and Selection: Portfolio concept, Portfolio risk and return, Beta as a measure of risk, calculation of beta, Selection of Portfolio: Markowitz's Theory, Single Index Model, Capital market theorem, CAPM (Capital Asset Pricing Model) and Arbitrage Pricing Theory, Building Fixed Income Security Portfolio, Performance evaluation of existing portfolio, Sharpe, Jenson and Treynor measures of Performance Evaluation, Finding alternatives and revision of portfolio, Portfolio Management, Mutual Fund Industry.	**15**	**4**

Suggested Readings

1. Kevin –Security Analysis and Portfolio Management –PHI
2. Jack Clark Francis - Management of Invest, McGraw Hill
3. Elton & Gruber - Modern Portfolio Theory and Investment Strategy, Willey
4. Shape Alexander Ballen - Investment, Eastern Economy Ed
5. Donald E. Fisher and Ronald J. Jordan, "Securities Analysis and Portfolio Management", Prentice Hall, New Delhi
6. Sourain, Harry. "Investment Management", Prentice Hall of India

Online Resources

1. http://egyankosh.ac.in//handle/123456789/6339
2. https://www.youtube.com/watch?v=gNPPFjBAKlc

Course Articulation Matrix

PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	1		1	1	2			1		2	3	2	2
CO2		1	1	1	1	2	1		1		2	3	2	2
CO3	2	1		1	2	3		1		1	2	3	2	2
CO4	2	1		1	1	2			1		2	3	2	2
Avg	**2**	**1**	**1**	**1**	**1.25**	**2.25**	**1**	**1**	**1**	**1**	**2**	**3**	**2**	**2**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**4**	**Semester**		**7**	
Course Name	**Operation Research**				
Code	**NGE54513**				
Course Type	**Generic Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Pass Certificate of 10+2**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Deeper understanding of the quantitative techniques for improving the quality of managerial decisions. ❖ Generalist approach towards Operations Research.				
Course Outcomes					
CO1	Remembering and Understand the need of using operational research for effective decision making. Formulate mathematical models that may be useful in explaining interactive decision-making concepts, where two or more competitors are involved under conditions of conflict and competition.				
CO2	Understanding and explain how linear programming helps in business decision making & formulate linear programming problems and interpret such solutions. Also how transportation problem helps in business decision making and formulate transportation problems and interpret such solutions.				
CO3	Applying the assignment problem to check how it helps in business decision making formulate assignment problems and interpret such solutions. and to understand how optimal strategies are formulated in conflict and competitive environment.				
CO4	Analysing to distinguish between several queuing models and derive performance measures for each of them and apply replacement policy for items whose efficiency deteriorates with time and for items that fails completely.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	Uses, Scope and Applications of Operation Research in managerial decision-making. Decision-making under certainty, Uncertainty and risk situations, Decision tree approach and its applications.	**15**	**1**
2	**Linear programming:** Mathematical formulations of LP Models for product-mix problems, Graphical method of solving LP problems, Simplex method of solving LP problems, Sensitivity analysis, Duality of LP problem. **Transportation problem:** Various methods of finding Initial basic feasible solution and optimal solution. Assignment model: Hungarian Algorithm and its applications in terms of maximisation and minimisation.	**15**	**2**
3	**Game Theory:** Concept of game, Two-person zero-sum game, Pure and Mixed Strategy Games, Saddle Point, Odds Method, Dominance Method and Graphical Method for solving Mixed Strategy Game. **Discipline Specific Elective** Johnsons Algorithm for n Jobs and Two machines, n Jobs and Three Machines, Two jobs and m - Machines Problems.	**15**	**3**
4	**Queuing Theory:** Characteristics of M/M/I Queue model, Application of Poisson and Exponential distribution in estimating arrival rate and service rate, Applications of Queue model for better service to the customers.	**15**	**4**

	Discipline Specific Elective Replacement of assets that deteriorate with time, replacement of assets which fail suddenly. **Project Management:** Rules for drawing the network diagram, Applications of CPM and PERT techniques in Project planning and control, Crashing of operations.		

Suggested Readings

1. Vohra, Quantitative Techniques in Management, 2nd edition, Tata McGraw-Hill, 2003.
2. Taha Hamdy, Operations Research - An Introduction, 7th edition, Prentice-Hall.
3. Kothari, Quantitative Techniques, 3rd Edition, Vikas Publication, 1996.
4. Sharma J K, Operations Research, 3rd Edition. Pearson.
5. Kapoor V.K. ,Operations Research, 4th Edition, S. Chand.

Online Resources

1. http://egyankosh.ac.in//handle/123456789/62725
2. https://www.youtube.com/watch?v=knZrhVkZ71Q&list=PLU6SqdYcYsfLyEPjMPHT_1ZhTRrnXA55R

Course Articulation Matrix

PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	1	1	1			1	2	3	2		2	2	3
CO2	2	2	1	1		1		2	3	2		2	2	3
CO3	1	2		1			2	1	3	2		2	2	3
CO4	2	1	1				2	2	3	2		2	2	3
Avg	**1.75**	**1.5**	**1**	**1**	**0**	**1**	**1.66**	**1.75**	**3**	**2**	**0**	**2**	**2**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**4**	**Semester**		**7**	
Course Name	**Production and Operations Management**				
Code	**NGE54514**				
Course Type	**Generic Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Pass certificate of 10+2**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ The strategic significance of operations management in highly competitive global economy ❖ Various principles, concepts, tools and techniques developed in the area of operations management over the years. ❖ Practical applications in real life situation.				
Course Outcomes					
CO1	Understand and analyze the concepts of operations management, product & process design, analysis, plant location, layout, Scheduling and Material Management.				
CO2	Understand the importance and functions of inventory and to be able to apply selected technique for its control & management under depended & independent demand circumstance.				
CO3	Apply the principles & techniques for planning and control the inventory of the production to optimize/make best use of resources.				
CO4	Develop skills of Analysing and improving quality by utilizing techniques and methods of total quality management, continuous improvement, six-sigma quality, and statistical process control.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Introduction to Operations Management** Operations Management**:** An overview, Definition of operations management, Production Cycle, Classification of Operations Systems, Responsibilities of Operations Manager, the strategic role and Objectives of operations, Operations strategy: The 'top-down' and 'bottom up' perspective, The market requirements perspective, the operations resources perspective. Plant Location, Plant Layout Planning. Introduction to Operations in Service Industry: Nature of Services, Difference between operations in service and manufacturing industry, major operation management issues and decisions in service industry. Role of Technology in service operations, Service quality gap model.	**15**	**1**
2	**Module II : Forecasting & Work Study** Definition and Scope of Forecasting, Types and methods of Forecasting, Qualitative & Quantitative Methods, Delphi, Expert Opinion, Brainstorming, Market Survey Methods etc., Regression, Time Series based Method, Exponential smoothening, Box–Jenkins Method, Monitoring and Controlling forecasting models. Work study–Method study, Work Measurement	**15**	**1&2**
3	**Module III: Production Planning & Inventory Management** Introduction to Planning techniques, Capacity plan, Aggregate plan, Scheduling types & principles, Master production schedule, Inventory Management: Objectives & Factors, Inventory Control Techniques namely ABC, VED, FSN and EOQ analysis, JIT, Kanban.	**15**	**3**

4	**Module IV: Quality Management** Basic concepts of quality, Dimensions of quality, Juran's quality trilogy, Deming's 14 principles, PDCA cycle, Quality circles, Quality improvement and cost reduction, 7QC tools and 7 new QC tools, Six Sigma, LEAN Six-Sigma, Cost of Warranty, TPM.	**15**	**4**

Suggested Readings

1. Heizer and Render, Operations Management, , 10th edition, Prentice-Hall.
2. Hill T, Operations Management, Palgrave, 2000.
3. K. Aswathapa, Production and Operations Management , Himalayan Publication.

Online Resources

1. eGyanKosh: Production and Operations Management online available at https://www.egyankosh.ac.in/handle/123456789/4758
2. NPTEL: Production and Operations Management online available at https://onlinecourses.nptel.ac.in/noc20_mg06/preview

Course Articulation Matrix

PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	1	3		2	2	2		3	2	2		2	3	3
CO2	1	3		2	2	2		3	2	2		2	3	3
CO3		2		2	1			2	1	1		2	2	3
CO4	1	3		2	2	2		3	2	2		2	3	3
Avg	**1**	**2.75**	**0**	**2**	**1.75**	**2**	**0**	**2.75**	**1.75**	**1.75**	**0**	**2**	**2.75**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**4**	**Semester**		**8**	
Course Name	**Planning Analytics**				
Code	**NBBAB5801**				
Course Type	**Discipline Specific Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic Knowledge of NBBAB5401 & NBBAB5501**	**3**	**0**	**1**	**4**
Course Objectives	To familiarize students with: ❖ To provide creation of new server, dimensions, cubes and import data using TM1. Learners will be able to understand how to share data across cube and create complete model and use additional modeling techniques in TM1 ❖ To introduce the students about Customize Business Rules, SKIPCHECK, FEEDERS, Creation of applications in TM1 ❖ To teach the fundamental techniques and principles in text analytics so that their data analysis skills can be achieved. ❖ To enable students to have skills in MDX queries in TM1, integrate with Cognos BI and contribute to Planning Applications. ❖ To study, understand the Financial Performance Management, Overview of Cogon's TM1, Import Data to Create Objects, Create and Customize Dimensions and Cubes. ❖ To study, understand and implement each unit according to National Education Policy 2020 and Bloom's Taxonomy.				
Course Outcomes					
CO1	Remembering the concept of Strategies of Data Mining.				
CO2	Understanding the TM1 Model and create a process to load and delete data.				
CO3	Applying and creating the Development Process.				
CO4	Analysing security in the application.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Performance Management and Identify Common Data Structure.** This chapter provides Enterprise Performance Management Finance function in an organization financial performance management Importance of financial performance management for CFO; Architecture and components of Planning Analytics / TM1 server fundamentals, Fundamental modelling concepts TM1 MOLAP Solution In-Memory Data Storage. Identify characteristics of Operational and Reporting Databases Online Analytical Processing Core Model Design Principles create a TM1 model and deploy it; Guided Import data to create a dimension Import Data to Create and populate cube; Cubes dimensions and elements Create dimensions manually Import dimensions Edit dimensions Create dimension calculations.	**15**	**1**
2	**Module II: Create and Customize Cubes** This chapter provides Construct a new cube property Edit a cube structure Review and use a pick list Create cube calculations; Import Data: Identify	**15**	**2**

	data sources Create processes to load data Create a process to delete data in a cube Create processes to update and maintain the model; Share Data Across Cubes with Links: Types of links Create and modify links Review rule- and process-based links.		
3	**Module III : Customize Business Rules** This Chapter includes Automatically generated rules Rule Blocks Disable & Enable auto-generated rules Manual Rules; Optimize Rule Performance: Consolidations and Sparsity SKIPCHECK FEEDERS Complete Model: Discuss the model development process Complete objects for the model Review tools to aid in model development.	**15**	**3**
4	**Module IV: Create Applications** Application types Create a new application Apply security in the application Activate and de-activate an application; Additional Modelling Techniques: Create dynamic subsets Use dimension functions Implement business logic Improve cube performance Use TM1 utilities	**15**	**4**

Suggested Readings

1. IBM COURSEWARE

Online Resources

1. https://cognitiveclass.ai/courses/course-v1:IBM+ST0101EN+v1

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2	2	2	2		1	2	3	1	1		2	3	3
CO2	2		2	2		1	2		1	1		2	3	3
CO3		2	1	2	1	1		3	1		1	2	3	3
CO4	2	2	2	2		1	2	3	1	1		2	3	3
Avg	**2**	**2**	**1.75**	**2**	**1**	**1**	**2**	**3**	**1**	**1**	**1**	**2**	**3**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**4**	**Semester**		**8**	
Course Name	**Planning Analytics Lab**				
Code	**NBBAB5802**				
Course Type	**Discipline Specific Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic Knowledge of NBBAB5402**	**0**	**0**	**2**	**2**
Course Objectives	To familiarize students with: ❖ The objective of the course would be to understand Financial Performance Management, ❖ Overview of Cognos TM1 ❖ Import Data to Create Objects ❖ Create and Customize Dimensions & Cubes.				
Course Outcomes					
CO1	Remembering and understanding Financial Performance Management, Overview of Cognos TM1, Import Data to Create Objects, Create and Customize Dimensions Cube.				
CO2	Analyze new server, dimensions, cubes and import data using TM1, and to learn about Customize Business Rules, SKIPCHECK, FEEDERS, Creation of applications in TM1.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I:** Creating a new server and managing model: By using TM1 configuration and architecture. Creation of Dimension, Subset and attributes using Architect. Creation of Cubes using Architect. Loading Data in TM1 cube with the help of Turbo Integrator. Implementation of Business logics.	**30**	**1**
2	**Module II:** Advanced Modelling of Tm1 using Data Spreading, lookup cube, virtual cube and drill paths. Applying SKIPCHECK FEEDERS on Real Case Scenario. Create dynamic subsets Using Turbo Integrator. Creating Picklist using Subset. Create the Process using predefined function in Advance tabs: VIEWZEROOUT, SAVEDATAALL.	**30**	**2**

Suggested Readings

1. Fintech: The Beginner's Guide to Financial Technology Paperback by Jacob William .ISBN-10 1533443866 Publisher: CreateSpace Independent Pub
2. Supply Chain Planning and Analytics by Gerald Feigin Publisher: Business Expert Press
3. IBM Cognos TM1 Cookbook Publisher Packet Publishing ISBN 9781849682114

Online Resources

1. https://cognitiveclass.ai/courses/course-v1:IBM+ST0101EN+v1

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2	2	2	2		1	2	3	1	1		2	3	3
CO2	2		2	2		1	2		1	1		2	3	3
Avg	**2**	**2**	**2**	**2**	**0**	**1**	**2**	**3**	**1**	**1**	**0**	**2**	**3**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**4**	**Semester**		**8**	
Course Name	**Artificial Intelligence**				
Code	**NDSE54509**				
Course Type	**Discipline Specific Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Pass Certificate of 10+2**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ To introduce the fundamental concepts of artificial intelligence. ❖ To equip students with the knowledge and skills in logic. ❖ To explore the different paradigms in knowledge representation and reasoning. ❖ To evaluate the effectiveness of hybridization of different artificial intelligence techniques.				
Course Outcomes					
CO1	Remembering and understanding the history, development and various applications of artificial intelligence.				
CO2	Understanding the concept of searching and different searching technique.				
CO3	Applying the knowledge representation and reasoning techniques familiarize with propositional and predicate logic and their roles in logic and handling inconsistency.				
CO4	Analysing different learning concepts.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Introduction to AI:** Scope of AI; General Issues and Overview of AI; AI Techniques; AI Problems; **Intelligent Agents:** Definitions of a Rational Agent, Reflex, Model-Based, Goal-Based and Utility- Based Agents, Agent and its Environment; **Problem Solving**: Defining the problem as a State Space Search, Issues in defining problems solving rules, **Production System:** Components of Production System, Search Space Control Strategies;	**15**	**1**
2	**Searching**: Uninformed Search: Depth-First, Breadth-first search. Informed /Heuristic Search: Hill Climbing, Best-First Search, A*, AO* Search, Branch and Bound; Problem Reduction; Constraint Satisfaction;	**15**	**2**
3	**Knowledge Representation:** Predicate Logic, Unification, Modus Ponens, Declarative and Procedural Representation, Rule Based Systems, Structured Knowledge Representation: Semantic Nets, Slots, Exceptions and Default Frames, Conceptual Dependency, Handling Inconsistent and Incomplete Knowledge: Truth Maintenance Systems, Reasoning Techniques, Concept of Uncertainty, Bayes' Theorem.	**15**	**3**
4	**Learning:** Learning from observations, forms of learning, Inductive learning, Learning decision trees, Ensemble learning, Knowledge in learning – Logical formulation of learning – Explanation based learning – Learning using relevant information – Inductive logic programming, Statistical learning methods, Learning with complete data, Learning with hidden variable, Instance based learning, Neural networks	**15**	**4**

Suggested Readings

1. S. Russell and P. Norvig, “Artificial Intelligence: A Modern Approach” (2nd ed.), Pearson Education, 2005.
2. Elaine Rich and Kelvin Knight, “Artificial Intelligence”, Tata McGraw Hill, 2002.
3. Eugene Charniak and Drew McDermott, “Introduction to Artificial Intelligence”, Pearson Education, 2009.
4. Dan W. Patterson, “Introduction to Artificial Intelligence and Expert Systems”, Prentice Hall of India, 2006.
5. George F. Luger, “Artificial Intelligence, Structures and Strategies For Complex Problem Solving”, Pearson Education, 5th Edition, 2010

Online Resources

1. https://onlinecourses.nptel.ac.in/noc23_cs104/preview
2. http://egyankosh.ac.in//handle/123456789/36082

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2	2	3	2	2		1	3	1	2		2	2	3
CO2	2	2	2	2	2	1	1		1	2	1	2	2	3
CO3	2		3			1		3	1	2			2	3
CO4	2	2	3	2	2			3	1	2	1	2	2	3
Avg	**2**	**2**	**2.75**	**2**	**2**	**1**	**1**	**3**	**1**	**2**	**1**	**2**	**2**	**3**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**4**	**Semester**		**8**	
Course Name	**Data Visualization and Machine Learning Techniques**				
Code	**NDSE54510**				
Course Type	**Discipline Specific Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic knowledge of NBBAB5101**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Concepts of Data visualization and machine learning techniques				
Course Outcomes					
CO1	Remembering and understanding python visualization libraries with crash course.				
CO2	Analysing data through seaborn and folium library				
CO3	Analysing mathematical foundation of Data science in reference to the machine learning				
CO4	Remembering and understanding supervised and unsupervised learning				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Data Visualization with Python:** Introduction to Python, installation, Introduction to Jupyter Notebook, Python scripting basics, Numpy and Pandas, Matplotlib overview, Basic plots using matplotlib, Specialized Visualization Tools using Matplotlib, Advanced Visualization Tools using Matplotlib Waffle Charts, Word Clouds.	**15**	**1**
2	**Seaborn Overview:** Introduction to seaborn, Seaborn functionalities and usage, Spatial Visualizations and Analysis in Python with Folium, Distribution, Categorical Plots, Matrix Plots, Regression Plots, Choropleth Maps, Grids, Style and Colors, Case Study.	**15**	**2**
3	**Introduction to Machine Learning:** What is Machine Learning, Paradigm of Machine Learning, Representation Learning, Principal Component Analysis, Introduction to clustering, K Means Clustering, Linear Regression, Lasso Regression, Multiple Regression and Logistics Regression	**15**	**3**
4	Data Models and ML tasks, Supervised Learning: Regression, Supervised Learning: Classification, Unsupervised Learning: Dimensionality reduction, Unsupervised Learning: Density Estimation	**15**	**4**

Suggested Readings

1. "Matplotlib 3.0 Cookbook" by Srinivasa Rao Poladi.
2. "Data Visualization in Python" by David Landup.
3. The Elements of Statistical Learning Hastie Trevor, Tibshirani Robert Second Edition Springer

Online Resources

1. An introduction to seaborn: https://seaborn.pydata.org/tutorial/introduction
2. Supervised and Unsupervised learning https://www.geeksforgeeks.org/supervised-unsupervised-learning/

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	1	3	1	3			1	3	1	1		2	3	3
CO2	1	3	1	3		1	1		1	1	1	2	3	3
CO3	1	3	1	3		1		3	1	1		2	3	3
CO4	1	3	1	3				3	1	1	1	2	3	3
Avg	**1**	**3**	**1**	**3**	**0**	**1**	**1**	**3**	**1**	**1**	**1**	**2**	**3**	**3**

Program	Bachelor of Business Administration -Business Analytics				
Year	4	Semester		8	
Course Name	Marketing of Services				
Code	NDSE54511				
Course Type	Discipline Specific Elective	L	T	P	Credit
Pre-Requisite	Basic knowledge of NGE54509	3	1	0	4
Course Objectives	To familiarize students with: ❖ The characteristics of services and their implications on design and delivery. ❖ Various elements of service mix along with the role of service marketing in financial and telecom sector. ❖ In-depth understanding of international service marketing aspect.				
Course Outcomes					
CO1	Remembering and understanding the concept of service marketing, nature, scope and its importance.				
CO2	Applying the service mix elements of product, price, place, promotion, processes, physical evidence, and people along with their unique challenges.				
CO3	Analysing service marketing knowledge in providing various financial services related to banking and insurance.				
CO4	Evaluating the major trends affecting the service marketing in international scenario along with the various driving forces.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Introduction to marketing of Services:** Difference between Product and Services Marketing, Characteristics of Services Classification of Services, Paradigms in Services Marketing. Importance of Customer Relationship Management: Specific for Service Industry, Service Marketing System: Service Quality.	**15**	**1**
2	**Module II: Service Level, Segmentation, Targeting, Positioning, Pricing and Distribution:** Understanding Customer Expectations and Zone of Tolerance, Segmentation and Zone of Tolerance, Targeting and Positioning of Services, Services Marketing Mix, Augmented Marketing Mix, Developing the Service Product/ Intangible Product, Service Product Planning, Service Pricing Strategy, Services Promotions, Services Distributions, Physical Evidence, Role of Communication in Service Marketing, People and Internal Communication, Process of Operations and Delivery of Services, Role of Technology in Services Marketing.	**15**	**2**
3	**Module III: Marketing of Financial Services:** Marketing of Financial Services, Deciding the Service Quality, Understanding the Customer Expectations, Segmenting, Targeting and Positioning of Financial Services, Devising Financial Services, Marketing Mix Strategies with Special Reference to Credit Cards, Home Loans, Insurance and Banking, Marketing of Telecom/ Insurance Services.	**15**	**3**
4	**Module IV: International Marketing of Services:** International Marketing of Services, Recent Trends in international marketing of services, Principal Driving Force in Global Marketing of Services, Key Decisions in Global Marketing, Services Strategy and Organizing for Global Marketing.	**15**	**4**

Suggested Readings

1. Valerie Zeithaml and Bitner Mary jo, Gremler & Pandit, Services Marketing, Tata McGraw Hill
2. Baron S and Harrisk - Services Marketing: Text and Cases (Palgrave, 2nd Ed.).
3. Payne Adrian - The Essence of Service Marketing (Prentice Hall of India).

Online Resources

1. Marketing of Service eGyankosh https://egyankosh.ac.in/handle/123456789/4612
2. Service Marketing: Integrating People, Technology, Strategy- NPTEL https://onlinecourses.nptel.ac.in/noc20_mg07/preview

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2		2	1	2				2	1	1	2	2	2
CO2	2		2	1		2	1		2	1		2	2	2
CO3	1		1	1	2			1	2	1		2	2	2
CO4	2		2	1		2			2	1	1	2	2	2
Avg	**1.75**	**0**	**1.75**	**1**	**2**	**2**	**1**	**1**	**2**	**1**	**1**	**2**	**2**	**2**

Program	**Bachelor of Business Administration -Business Analytics**				
Year	**4**	**Semester**		**8**	
Course Name	**Product and Brand Management**				
Code	**NDSE54512**				
Course Type	**Discipline Specific Elective**	**L**	**T**	**P**	**Credit**
Pre-Requisite	**Basic knowledge of NGE54509**	**3**	**1**	**0**	**4**
Course Objectives	To familiarize students with: ❖ Basic principles of product management and to develop an understanding of the brand concept. ❖ Framework for managing brand equity and distinguishing different ways to leverage and measure brand equity.				
Course Outcomes					
CO1	Remembering and understanding the elements of a managing a product and brand.				
CO2	Applying criteria for 'good management practice' to develop and maintain sustainable brands.				
CO3	Analysing the framework and understand variables that drive the success of brands and product lines and the interrelationships among these variables.				
CO4	Evaluating comprehensive framework for managing brand equity and distinguish different ways to leverage and measure brand equity.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Introduction to Product & Branding** An Introduction to branding, Corporate Strategy and Product Policy, Product classifications on the basis of durability & tangibility, consumer goods, Industrial goods. Product line Decisions, Product Life Cycle and Marketing Strategies.	**15**	**1**
2	**Module II: New Product Development** Techniques of Idea Generation and Screening, Concept Development and Testing, Test Marketing, Launching and Tracking New Product Programmes, Organizing for New Products.	**15**	**2**
3	**Module III: Branding** Introduction to Brand Management and Crafting of Brand Elements, Consumer Brand Knowledge & positioning, Brand Identity, Personality and Brand Associations, Managing Brand Architecture and Brand Portfolios.	**15**	**3**
4	**Module IV: Brand Equity** Tools for Building Brand Equity, Leveraging Brand Equity, Brand Equity Models namely Brand Asset Valuation, Aaker Model, Brand Resonance, Brands, Measurement of Brand Equity.	**15**	**4**

Suggested Readings

1. Brand Management- Harish V Verma, 2/e, Excel Book
2. Best Practice Cases in Branding: Lessons from the World's Strongest Brands, by Kevin Keller, Prentice Hall

Online Resources

1. Product and Brand Management, Prof Vinay Sharma NPTEL https://onlinecourses.nptel.ac.in/noc22_mg82/preview
2. Brand Management, https://egyankosh.ac.in/bitstream/123456789/90627/1/Unit-11.pdf

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2		1		1				2	1	1	2	2	2
CO2	2		1			2	1		2	1	3	2	2	2
CO3	2		1		1			1	2	1		2	2	2
CO4	2		1			2			2	1	1	2	2	2
Avg	**2**	**0**	**1**	**0**	**1**	**2**	**1**	**1**	**2**	**1**	**1.66**	**2**	**2**	**2**

Program	Bachelor of Business Administration -Business Analytics				
Year	4	Semester		8	
Course Name	Entrepreneurship Development				
Code	NGE54515				
Course Type	Generic Elective	L	T	P	Credit
Pre-Requisite	Pass certificate of 10+2	3	1	0	4
Course Objectives	To familiarize students with: ❖ The concept of entrepreneurship by analyzing the nature, process, barriers, stages and opportunities available. ❖ The scope and methods of international entrepreneurship,				
Course Outcomes					
CO1	Understand entrepreneur, Entrepreneurial motivation, stages and the skills required to be a successful entrepreneur. Describe examples of entrepreneurial business and actual practice, both successful & unsuccessful and explain the role & significance of entrepreneurship as a career, in the firm and in society				
CO2	Apply the theories that will help students to illustrate the process of creativity and entrepreneurial plans. (With the help of case study and suitable examples) and describe the various stages faced by an entrepreneur				
CO3	Prepare and Analyze project report and present business plan to prospective investors and demonstrate the opportunities and institutional support for new ventures available with examples from real world.				
CO4	Evaluate the sources of finance available for an entrepreneur and identify the opportunities available internationally.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Introduction to Entrepreneurship** Definition of Entrepreneur, Characteristics of an Entrepreneur, Functions of an Entrepreneur, Entrepreneurial motivation and Barriers, Classification of Entrepreneur, Role of Entrepreneurs in economic development. Family and Non-Family Entrepreneur: Role of Professionals, Professionalism vs family entrepreneurs. Concept of Entrepreneurship, Theories of Entrepreneurship, Internal and External Factors influencing entrepreneurship, Stages in entrepreneurial process, Development of Entrepreneurship in India. Role of Woman entrepreneur.	15	1
2	**Module II: Creativity and Entrepreneurial Plan** **Creativity:** Creative Performance, Creative Problem Solving: Heuristics, Brainstorming, Synaptic, Value Analysis. **Entrepreneurial Plan:** Idea Generation, Screening and Project Identification. Feasibility Analysis: Economic, Marketing, Financial and Technical. Project Report **Project Implementation:** Evaluation, Monitoring and Control.	15	2
3	**Module III: Sources of finance and Institutional Support** Debt or equity financing, Role of Commercial Banks, Venture Capital: Nature and Overview of venture capital, Venture capital process, Locating venture capitalists. Institutional support for new ventures, Supporting Organizations, Incentives and facilities, Financial Institutions. Small scale Industries, Govt. Policies for SSIs.	15	3

4	**Module IV: International Entrepreneurship Opportunities** International Entrepreneurship Opportunities: The nature of international entrepreneurship, Importance of international business to the firm, International versus domestics' entrepreneurship, Stages of economic development.	**15**	**4**

Suggested Readings

1. S.S. Khanka, Entrepreneurial Development, S. Chand
2. Sangeeta Sharma, Entrepreneurship Development, PHI Learning
3. Vasant Desai, The Dynamics of Entrepreneurial Development and Management, Himalaya Publishing House
4. Bridge S et al- Understanding Enterprise: Entrepreneurship & Small Business (Palgrave, 2003)

Online Resources

1. https://egyankosh.ac.in/handle/123456789/56499
2. https://dde-ac.in/Books/M229.pdf

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2		2	3	2	1	2		1	1		2	2	2
CO2	2			3	2		2		2	1		2	2	2
CO3	2		1	3	2	1	2		1	1		2	2	2
CO4	2			3	2		2		1	1		2	2	2
Avg	**2**	**0**	**1.5**	**3**	**2**	**1**	**2**	**0**	**1.25**	**1**	**0**	**2**	**2**	**2**

Program	Bachelor of Business Administration -Business Analytics				
Year	4	Semester		8	
Course Name	Corporate Governance, Values & Ethics				
Code	NGE54516				
Course Type	Generic Elective	L	T	P	Credit
Pre-Requisite	Pass Certificate of 10+2	3	1	0	4
Course Objectives	To familiarize students with: ❖ In depth knowledge of corporate governance and the need for business ethics to ensure sustained business growth& stability. ❖ Analysis and study of corporate values & ethics and their critical understanding of impact & importance in Business.				
Course Outcomes					
CO1	Understand the importance of corporate values and governance and analyze the role of SEBI for corporate disclosure and investor protection in India.				
CO2	Apply and develop conceptual skills of the value system, corporate governance and traditional approach so that student can relate to other aspects of the organization.				
CO3	Analyze and Comprehend of Intellectual property rights, application of IPR.				
CO4	Evaluate and Critical analysis and principles of ethics by demonstrating a critical understanding of the importance of business ethics in corporate.				

Module	Course Contents	Contact Hrs.	Mapped CO
1	**Module I: Introduction to Corporate Governance & Investor Protection:** Basics of Corporate Governance, Need of corporate governance, Evolution of Corporate Governance system worldwide, Corporate Governance in India, Corporate Governance Issues, Code of Corporate Practices, Role of SEBI on Corporate Disclosure & Investor Protection in India. Relevant case studies must be discussed e.g. Enron Scandal, Satyam Scandal, Insider trading scandal like Raj Rajaratnam & Rajat Gupta	15	1
2	**Module II: Board of Directors, CSR & IPR** Board of Directors, Types of Directors & composition of Board, Role of Board (BoD) in Corporate Governance, Corporate Social Responsibility, Need and significance of CSR, Growth and sustainability with CSR, Laws and regulations related to CSR, Corporate Social Reporting, Laws & regulations relating to Corporate social reporting.	15	2
3	**Module III: Values-impact on Business** Values and their characteristics, Types of Values, Values and Behavior, Developing value system in Organizations. Indian Value System and Values, Management lessons from Indian scriptures and traditions namely Geeta, Ramayana, Mahabharata, Upanishads and Vedas, Bible and Quran.	15	3
4	**Module IV: Ethical-impact on Business** Business Ethics, Features of Ethics, Ethical theories and approaches, Ethical Issues in Capitalism and market systems, Ethics and social responsibility. Ethical issues in functional areas of marketing, finance, human resource and Information Technology, with Discussions related contemporary Business cases.	15	4

Suggested Readings

1. S.S. Iyer - Managing for Value (New Age International Publishers, 2002)
2. Laura P Hartman Abha Chatterjee - Business Ethics (Tata McGraw Hill, 2007)
3. S.K. Bhatia - Business Ethics and Managerial Values (Deep & Deep Publications Pvt.Ltd, 2000)
4. Velasquez – Business Ethics – Concepts and Cases (Prentice Hall, 6th Ed.)
5. Neeru Dr. Vasishtha – Business Ethics & Values-Taxmann's II ed.

Online Resources

1. https://egyankosh.ac.in/handle/123456789/82251
2. https://backup.pondiuni.edu.in/storage/dde/dde_ug_pg_books/Business%20ethics.pdf

Course Articulation Matrix														
PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	1		1		1	2	3		1	1		2	2	2
CO2	1					2	3		2	1		2	2	2
CO3	1		1	1	1	2	3		1	1		2	2	2
CO4	1					2	3		1	1		2	2	2
Avg	**1**	**0**	**1**	**1**	**1**	**2**	**3**	**0**	**1.25**	**1**	**0**	**2**	**2**	**2**