

Durgapur Women's College

The Department of Mathematics

Syllabus Distribution Odd sem

Date: : 27:06: 2024

Name of the teacher	Course allotted	Number of classes per week
Surajit Karmakar	First sem major (BSCMTMMJ101)	3
	First sem minor (BSCMTMMN101)	3
	3rd sem Major (BSCMTMMJ301)	7
	Fifth sem C11 (BSCHMTMC501)	6
	First sem MDC (MDC113)	1
Sutapa Mandal	First sem major(BSCMTMMJ101)	3
	First sem minor(BSCMTMMN101)	3
	First sem SEC(BSCMTMSE101)	3
	Third sem minor(BSCMTMMN301)	2
Amit Sarkar	3rd sem major(BSCMTMMJ302)	6
	3rd sem MDC(MDC305)	3
	5th sem C12(BSCHMTMC502)	6
	First sem minor remedial(BSCMTMMN101)	2
Palash Roy	First sem SEC (BSCMTMSE101)	3
	3rd sem Minor(BSCMTMMN301)	2
	5th DSE 2(BSCHMTMDSE502)	6
Ashima Mandal	3rd sem(BSCMTMMN301)	2
	5th sem DSE 1(BSCHMTMDSE501)	6

Surajit Karmakar

Dr Surajit Karmakar

Head of the Department

The Department of Mathematics

Durgapur Women's College

(Affiliated to Kazi Nazrul University)
Mahatma Gandhi Road
Durgapur-713209

Lesson Plan (CBCS) 2023-24

Department: POLITICAL SCIENCE

Semester: 3rd

CC-5 Hons

Course Name: Western Political Thought(Ancient & medieval)

Course Code: BAPLSH301

Credit (No. of Hours per Week): 6

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic.
I	Background of Wester Political Thought: A brief outline with special emphasis on Stoics and Sophists.	MG	Lecture with Board work & tutorial	Western Political Thought- O.P GAUBA	20
II	Greek Political Thought: a) Plato - Theory of justice b) Aristotle - Concepts of state and constitution	MG	Lecture with Board work & tutorial	A.K. Mukhopadhyay, Western Political Thought : From Plato to Marx	20
III	Roman Political Thought: Law and jurisprudence Medieval Political Thought in Europe: Features.	MG	Lecture with Board work & tutorial	S. Mukherjee and S. Ramaswamy, A History of Political Thought	10
IV	Post-Medieval Political Thought in Europe: Nicole Machiavelli - Secularization of politics.	MG	Lecture with Board work & tutorial.	S. Mukherjee and S. Ramaswamy, A History of Political Thought	10
V	Jean Bodin - Theories of state and sovereignty.	MG	Lecture with Board work & tutorial.	A.K. Mukhopadhyay, Western Political Thought: From Plato to Marx	12
					72

	Total No. of Hours allotted to the Course				

Department: POLITICAL SCIENCE
Semester: 3rd SEC
SEC-1
Course Name: Public Opinion and Survey Research:
Course Code: BAPLSEC101
Credit (No. of Hours per Week): 4*
Total Teaching Days: 90* (As per KNU Academic Calendar)
Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic.
I	Definition and Characteristics of Public Opinion	KM	Lecture with Board work & tutorial	An Introduction to Political Theory- O.P GAUBA	KM
II			Lecture with Board work & tutorial	An Introduction to Political Theory- O.P GAUBA	
III	Interviewing: Types-Structured, Unstructured, Focused	JB	Lecture with Board work & tutorial	Ahuja,Ram, Research Methods	9
IV			Lecture with Board work & tutorial.	Dc bhattacharya- Political theory	
V	: Prediction in polling research: possibilities and pitfalls	MG	Lecture with Board work & tutorial.	Ahuja, Ram, Research Methods	9
Total No. of Hours allotted to the Course					

Department: POLITICAL SCIENCE
Semester: IV
CC-8 Hons
Course Name: Modern Western Political Thought
Course Code: BAPOLH -
Credit (No. of Hours per Week):6
Total Teaching Days: 90* (As per KNU Academic Calendar)
Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic.
I	Thomas Hobbes: Materialism, Human nature, and Sovereignty.	MG	Lecture with Board work & tutorial.	A.K. Mukhopadhyay, Western Political Thought : From Plato to Marx	10
II	Thomas Hobbes: Materialism, Human nature, and Sovereignty.	MG	LectureChalk and Board	A.K. Mukhopadhyay, Western Political Thought : From Plato to Marx	10
III	J.J. Rousseau: Concept of General Will.	MG	Lecture with Board work & tutorial	A.K. Mukhopadhyay, Western Political Thought : From Plato to Marx	10
IV	Hegel: Dialectics and State.	JB	Lecture with Board work & tutorial	Western Political Thought- O.P GAUBA	14
V	Karl Marx and Fredrick Engels: Dialectical and Historical Materialism	MG	Lecture with Board work & tutorial	Western Political Thought- O.P GAUBA	12
VI	Jeremy Bentham: Utilitarianism.	MG	Lecture with Board work & tutorial	Western Political Thought- O.P GAUBA	08

VII	J.S. Mill: Utilitarianism, and Liberalism	MG	Lecture with Board work & tutorial	Western Political Thought- O.P GAUBA	08
Total No. of Hours allotted to the Course					72

Department: POLITICAL SCIENCE
Semester: IV
CC-9 Hons
Course Name: Indian Government and Politics
Course Code: BAPOLH -
Credit (No. of Hours per Week):6
Total Teaching Days: 90* (As per KNU Academic Calendar)
Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic.
I	Framing of the Indian Constitution	BD	Lecture with Board work & tutorial.	D D Basu, The Constitution of India	10
II	Fundamental Rights and Duties	BD	LectureChalk and Board	D D Basu, The Constitution of India	10
III	Nature of Indian Federalism : Union - State relations	BD	Lecture with Board work & tutorial	D D Basu, The Constitution of India	10
IV	Union Executive : President and Vice- President	BD	Lecture with Board work & tutorial	DC Bhattachariya, Indian Govt. and Politics	14
V	Union Legislature : Rajya Sabha and Lok Sabha	BD	Lecture with Board work & tutorial	DC Bhattachariya, Indian Govt. and Politics	12
VI	The judiciary Supreme court and High courts	BD	Lecture with Board work & tutorial	DC Bhattachariya, Indian Govt. and Politics	08
VII	Constitutional amendment : Procedures,Electoral reforms	BD	Lecture with Board work	DC Bhattachariya	08

			& tutorial	a, Indian Govt. and Politics	
Total No. of Hours allotted to the Course					72

Department: POLITICAL SCIENCE

Semester: 4th

CC-10 Hons

Course Name: Basic Theories of International Relations

Course Code: BAPL

Credit (No. of Hours per Week): 6

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic.
I	Basic concepts of International Relations: (a) National power, (b) Balance of power. (c) Collective security. (d) Bipolarity, (e) Unipolarity. (f) Multipolarity, (g) National interest, and (h) Globalization.	MG	Lecture with Board work & tutorial	Bandyopadhyaya, Jayantanuja, A General Theory of International Relations	20
II	Realism: As an approach to the study of International Relations.	MG	Lecture with Board work & tutorial	Bandyopadhyaya, Jayantanuja, A General Theory of International Relations	10
III					

IV					
Total No. of Hours allotted to the Course					

Department: POLITICAL SCIENCE

Semester: 4th

CC: - **GE-4**

Course Name: **Governance: Issues and Challenges**

Course Code: **BAHPLSGE401**

Credit (No. of Hours per Week): 6

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic.
I	Governance: Meaning and evolution of the concept.	KM	Lecture with Board work & tutorial	Smith, B.C., Good Governance and Development	12
II	Good governance: Basic components.	KM	Lecture with Board work & tutorial	Evans, J. P., Environmental Governance	12
III	Forms of governance: Democratic governance, e-governance and corporate governance.	KM	Lecture with Board work & tutorial	Chakrabarty, B and Bhattacharya (eds.), M., The Governance Discourse	12
IV	Law, Policy and governance: Scope and Challenges.	JB	Lecture with Board work & tutorial	Chakrabarty, B and Bhattacharya (eds.), M., The Governance Discourse	18

V	Environmental governance.	JB	Lecture with Board work & tutorial	Smith, B.C., Good Governance and Development	18
Total No. of Hours allotted to the Course					72

Department: POLITICAL SCIENCE

Semester: 4th

Hons: SEC

Course Name: Legislative Practices and Procedures

Course Code: BAPLSEC

Credit (No. of Hours per Week): 4*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic.
I	Powers and functions of people's representative at different tiers of governance: Members of Parliament. State Legislative Assemblies - functionalities of rural and urban local governance	MG	Lecture with Board work & tutorial	Bhambhri, P.C., Parliamentary Control over State Enterprise in India	14
II	Legislative Process: Making of a law	MG	Lecture with Board work & tutorial	Bhambhri, P.C., Parliamentary Control over State Enterprise in India	10
III	Legislative Committees: Types and role	MG	Lecture with Board work & tutorial	B. Jalan, (2007) India's Politics (8
IV	Overview of Budget Process	MG	Lecture with Board work & tutorial.	B. Jalan, (2007) India's Politics (8

V	Media monitoring and communication: Types of media and their significance for legislators	MG	Lecture with Board work & tutorial.	B. Jalan, (2007) India's Politics (8
Total No. of Hours allotted to the Course					

Semester: 5

Major/Minor/Hons/Prog: HONS

Course Name: WORLD POLITICS :ORGANIZATIONS & ISSUES

Course Code:BAHPLSC501

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/ E-Content	No. of Hours Allotted to the Topic.
II	The United Nations:General Assembly,security council,reform of the UN	JT	LectureChalk and Board	Andrew Heywood-Global Politics	5
Total No. of Hours allotted to the Course					5

Major/Minor/Hons/Prog: HONS

Course Name: Basic Theories of Public Administration

Course Code:BAHPLSC 502

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Nature ,Scope and Evolution of Public Administration	BD	Lecture Chalk and Board	Mohit Bhattachraya, Public Admt.	14
II	Major concepts of Organization	BD	Lecture Chalk and Board	Mohit Bhattachraya, Public Admt.	15
III	Bureaucracy : Marx and Max Weber	BD	Lecture Chalk and Board	Mohit Bhattachraya, Public Admt.	14
IV	Development Administration Fried W Riggs	BD	Lecture Chalk and Board	Mohit Bhattachraya, Public Admt.	15
V	Decision Making Model : Herbert Simon	BD	Lecture Chalk and Board	Mohit Bhattachraya, Public Adm	14
Total No. of Hours allotted to the Course					72

Semester: 5

DSE-: HONS

Course Name: SOCIAL MOV. IN CONTEMPORARY INDIA

Course Code: BAHPLSDSE-503

Credit (No. of Hours per Week): 6*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
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I	MEANING & FEATURES	JT	Lecture with Board work & tutorial.	Ghanshyam shah- SOCIAL movt. In india	8
II	Social movt. & new social movt	JT	LectureChalk and Board	-DO-.	4
111	Peasant Movement - Telengana and Singur Unit	MG	LectureChalk and Board	Shah. Ghanshyam, Social Movements in India: A Review of Literature	18
IV	Tribal Movements - POSCO and Niyamgiri	MG	LectureChalk and Board	Shah. Ghanshyam, Social Movements in India: A Review of Literature	18
V	Environmental movts-CHIPKO, NARMADA & SILENT VALLEY	JT	LectureChalk and Board	Environmental movt of india- Krishna Mallick	25
Total No. of Hours allotted to the Course					72

DSE-: HONS 5th SEM

Course Name:HumanRights

Course Code: BAHPLSDSE-503

Credit (No. of Hours per Week): 6*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/ E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
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I	Meaning & a brief history of human rights (UDHR)	JB	Lecture with Board work & tutorial.	Clapham, Andrew, Human rights	8
II	Human rights- Terrorism & Counter- terrorism	JB	LectureChalk and Board	-DO-.	4
111	Indian Constitution & protection of human rights	JB	LectureChalk and Board	Narayan,S, Human rights Dynamic in India	18
IV	National human rights commission-Composition& Function	JB	LectureChalk and Board	Do	18
V	Human rights movements in India-Evolution, nature, challenges and prospects.	JB	LectureChalk and board	Do	24
Total No. of Hours allotted to the Course					72

SEMESTER: 5

Major/Minor/Hons/Prog: PROG

Course Name:READING GANDHI

Course Code: BAPPLSGE-502

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

I	HIND SWARAJ: Gandhi in his own words, commentaries on Hind Swaraj & Gandhian thought.	KM	LectureChalk and Board	A J Parel- Introduction MK Gandhi.	15
II	GANDHI & MODERN INDIA: Communal unity, Untouchability	JT	LectureChalk and Board	B PAREKH- GANDHI chapter 4&5 & ignou study material MGP.	12
Total No. of Hours allotted to the Course					27

Semester: 5

DSE: PROG

Course Name: Administration and Public Policy: Concepts and Theories

Course Code: BAPPLS-502

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/E-Content
I	Nature, Scope and Evolution of Public Administration - Private and Public Administration.	MG	LectureChalk and Board	Mohit Bhattacharya New Horizons of Public Administration
11	Major Concepts of Organization: (a) Hierarchy (b) Unity of Command (c) Span of Control (d) Authority (e) Centralization, Decentralization, and Delegation (f) Line and Staff	KM		Mohit Bhattacharya New Horizons of Public Administration
111	Administrative Theories: The Classical Theories, Scientific Management, The Human-Relation Theory and Rational Decision-Making	KM		Mohit Bhattacharya New Horizons of Public Administration
1V	Meaning, concept and theories of Public Policy; Relevance of policy making in public administration and process of policy formulation and implementation and evaluation.	MG	LectureChalk and Board	S.R. Maheshwari, Administrative Theories An Introduction
Total No. of Hours allotted to the Course				60

Semester: 5
SEC-3- PROG
Course Name:GLOBALIZATION:Theories & concepts.
Course Code: BAPPLSSE-504

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.I	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/ E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
II	GLOBALIZATION & TERRORISM	JT	LectureCha lk and Board	KK GHAI- INTERNATI ONAL RELATIONS	03
111	Globalization and new international order	MG	LectureCha lk and Board	Internation al relation by Indrani Mukhopad hyaya	03
Total No. of Hours allotted to the Course					

DSE-: HONS 6Th SEM

Course Name:Understanding Global Politics

Course Code: BAHPLSDSE-601

Credit (No. of Hours per Week): 6*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/ E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Evolution of the state system and the concept of sovereignty	JB	Lecture with Board work & tutorial.	Heywood, Andrew, Global politics	12
II	Global economy; Bretton woods institutions and W.T.O	JB	Lecture and Board	R.Mansbach and K Taylor. International political economy	12
111	Transitional economic actors	JB	Lecture and Board	Do	18
IV	Global poverty: Millennium development Goals and unfulfilled promises	JB	Lecture and Board	Do	18
Total No. of Hours allotted to the Course					60

Semester: 6
CC-DSE

Course Name: Environmental Politics.
Course Code: BAHPLSDSE
Credit (No. of Hours per Week): 6*
Total Teaching Days: 90* (As per KNU Academic Calendar)
Total Teaching Weeks: 12*

I	ENVIRONMENTALISM: MEANING & RELATED IDEAS, SIGNIFICANCE	JT	LectureCha lk and Board & Tutoria	J VOLGER- ENVIRONM ENTAL ISSUES & J BAYLIS, S SMITH & OWENS- GLOBALIZ ATION OF WORLD POLITICS.	15
11	Collective action problems and environmental challenges in developing and developed countries	MG	LectureCha lk and Board & Tutorial	Ramachan dra Guha, Environme ntalism: A Global Histor	15
III	MAJOR ENVIRONMENTAL MOVEMENTS IN INDIA-CHIPKO, NARMADA & SILENT VALLEY	JT	LectureCha lk and Board & Tutorial	ENVIRONM ENTAL ISSUES IN INDIA- MAHESH RANGARAJ AN	12
IV	Regional and international efforts to address climate change.	MG	LectureCha lk and Board & Tutorial	Ramachan dra Guha, Environme ntalism: A Global Histor	15
V	GREEN GOVERNANCE- SUSTAINABLE DEVELOPMENT	JT	LectureCha lk and Board & Tutoria	A HEYWOOD -GLOBAL POLITICS	12

TOTAL NUMBER OF HOURS ALLOTTED TO THE COURSE

69

Semester: 6

CC-PROG SEC**Course Name: Environment Politics.****Course Code: BAPPLSSE-602****Credit (No. of Hours per Week): 4*****Total Teaching Days: 90*** (As per KNU Academic Calendar)**Total Teaching Weeks: 12***

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/ E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	ENVIRONMENTALISM: MEANING & RELATED IDEAS, SIGNIFICANCE	JT	Lecture Chalk and Board & Tutorial	J VOLGER- ENVIRONMENTAL ISSUES & J BAYLIS, S SMITH & OWENS- GLOBALIZATION OF WORLD POLITICS.	8
11	Collective action problems and environmental challenges in developing and developed countries	MG	Lecture Chalk and Board & Tutorial	Ramachandra Guha, Environmentalism: A Global Histor	10
III	MAJOR ENVIRONMENTAL MOVEMENTS IN INDIA- CHIPKO, NARMADA & SILENT VALLEY	JT	Lecture Chalk and Board & Tutorial	ENVIRONMENTAL ISSUES IN INDIA- MAHESH RANGARAJAN	12
IV	Regional and international efforts to address climate change.	MG	Lecture Chalk and Board & Tutorial	Ramachandra Guha, Environmentalism: A Global Histor	8

V	GREEN GOVERNANCE- SUSTAINABLE DEVELOPMENT	JT	LectureChalk and Board & Tutoria	A HEYWOOD -GLOBAL POLITICS	12
	Total no of Hours allotted for the course				50

Semester: 6

CC-PROG GE

Course Name: . Human Rights: Theories and Concepts

Course Code: BAPPLSGE

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/ E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*

111	Indian Constitution and protection of human rights	MG	LectureCha lk and Board & Tutorial	Baxi, Upendra, The Future of Human Rights	10
IV	National Human Rights Commission - Composition and functions	MG	LectureCha lk and Board & Tutorial	Priyam, Menon and Banerjee, Human Rights, Gender and the Environme nt	8
V	Human Rights Movements in India - Evolution, nature, challenges and prospects	MG	LectureCha lk and Board & Tutorial		10
	Total no of Hours allotted for the course				

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Lesson Plan (Academic Year: 2024-2025)

Department: Commerce

Semester: 1st

Major/Minor/Hons/Prog: 3 Years Degree Course

Course Name: Financial Accounting

Course Code: Major

Credit (No. of Hours per Week): 5

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Introduction: Conceptual Framework	Rupak Das	Lecture with ICT Tools	Introductin to Financial Accounting, Pearson	8
II	Preparation of Financial Statements:	Rupak Das	Lecture Chalk and Board	Advanced Accounts VOL.I	6
III	Accounting for consignment	Rupak Das	Lecture Chalk and Board	Financial Accounting, Pearson Education	7
IV	Royalties	Rupak Das	Lecture Chalk and Board	Financial Accounting, Pearson	7
V	Hire Purchase and Installment Payment System	Rupak Das	Lecture Chalk and Board	Financial Accounting I, Oxford	12

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VI	Insurance Claim	Rupak Das	Lecture Chalk and Board	Financial Accounting I	10
VII	Accounting for Partnership Firm	Rupak Das	Lecture Chalk and Board	Financial Accounting, PHI Learning	10
Total No. of Hours allotted to the Course					60

* **Guideline to calculate** (kindly omit this section afterwards):

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2024-2025)

Department: Commerce

Semester: 1st

Major/Minor/Hons/Prog: 3 Years Degree Course

Course Name: Principles of Management

Course Code: Minor

Credit (No. of Hours per Week): 5

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Introduction	Samrat Dasgupta	Lecture with ICT Tools	Principles of Management, McGraw Hill Education	8
II	Planning and Decision Making	Samrat Dasgupta	Lecture with ICT Tools	Business Management	6
III	Organizing	Samrat Dasgupta	Tutorial with ICT Tools	Principles and Practice of Management	7
IV	Directing and Staffing	Samrat Dasgupta	Tutorial with ICT Tools	Management	7
V	Motivation and Leadership	Samrat Dasgupta	Tutorial with ICT Tools	Principles of Management	12
VI	Controlling	Samrat Dasgupta	Tutorial with ICT Tools	Management Principles and Application, Cengage Learning	10

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VII	Company Management	Samrat Dasgupta	Tutorial with ICT Tools	Essentials of Management	10
Total No. of Hours allotted to the Course					60

* **Guideline to calculate** (kindly omit this section afterwards):

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Lesson Plan (Academic Year: 2024-2025)

Department: Commerce

Semester: 1st

Major/Minor/Hons/Prog: 3 Years Degree Course

Course Name: Microeconomics

Course Code: Multi-Disciplinary

Credit (No. of Hours per Week): 5

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Basics of Demand & Supply	Krishanu Sarkar	Lecture with ICT Tools	Economics. Tata Mc-Graw Hill	10
II	Theory of Consumer Behaviour	Krishanu Sarkar	Lecture Chalk and Board	Modern Micro-Economics	10
III	Theory of Production and Costs	Krishanu Sarkar	Tutorial with ICT Tools	Managerial Economics, Oxford University	10
IV	Market Structure	Krishanu Sarkar	Lecture Chalk and Board	Managerial Economics, Tata McGraw Hill	10
V	Factor Price Determination	Krishanu Sarkar	Lecture Chalk and Board	"A Textbook of Economic Theory"	20
Total No. of Hours allotted to the Course					60

* **Guideline to calculate** (kindly omit this section afterwards):

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Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2024-2025)

Department: Commerce

Semester: 1st

Major/Minor/Hons/Prog: 3 Years Degree Course

Course Name: Entrepreneurship Development

Course Code: Skill Enhancement Course(SEC)

Credit (No. of Hours per Week): 5

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Entrepreneurship	Rupak Das	Lecture with ICT Tools	Entrepreneurship:The Ten Commandments for Building a Growth Company	10
II	Creativity	Rupak Das	Lecture Chalk and Board	Entrepreneurship: Strategies and Resources	10
III	Innovation	Rupak Das	Tutorial with ICT Tools	Entrepreneurship:New Venture Creation	10
IV	Enterprise Formation	Rupak Das	Lecture Chalk and Board	Entrepreneurship. Oxford University	10
V	Understanding and Analysing Business Opportunities	Rupak Das	Lecture Chalk and Board	Entrepreneurship Development	20
Total No. of Hours allotted to the Course					60

* **Guideline to calculate** (kindly omit this section afterwards):

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Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2024-2025)

Department: Commerce

Semester: 2nd

Major/Minor/Hons/Prog: 3-Year Degree Course

Course Name: Cost Accounting

Course Code: Major

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Introduction	Rupak Das	Lecture with ICT Tools	Cost Accounting, McGraw Hill Education	8
II	Material	Rupak Das	Lecture Chalk and Board	Cost Accounting, Principles and Practice	7
III	Labour	Rupak Das	Tutorial with ICT Tools	Advanced Cost and Management Accounting	8
IV	Overheads	Rupak Das	Lecture Chalk and Board	Management and Cost Accounting, Cengage Learning	12
V	Method of Costing	Rupak Das	Lecture Chalk and Board	Cost and Management Accounting, Dey Book Concern	12
VI	Variance Analysis	Rupak Das	Lecture Chalk and Board	Cost Accounting: Principles	8

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				and Practice, Pearson	
VII	Cost Accounting Systems	Rupak Das	Lecture Chalk and Board	Cost Accounting: Theory and Problems	5
Total No. of Hours allotted to the Course					60

* **Guideline to calculate** (kindly omit this section afterwards):

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2024-2025)

Department: Commerce

Semester: 2nd

Major/Minor/Hons/Prog: 3-Year Degree Course

Course Name: Principles of Marketing Management

Course Code: Minor

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Introduction to Marketing	Samrat Dasgupta	Lecture with ICT Tools	Marketing(14 th ed.), McGraw Hill	8
II	Marketing Environment	Samrat Dasgupta	Tutorial with ICT Tools	Principles of Marketing.PHI	7
III	Consumer Behavior	Samrat Dasgupta	Tutorial with ICT Tools	Principles of Marketing, Pearson	8
IV	Product Decisions	Samrat Dasgupta	Tutorial with ICT Tools	Principles of Marketing.Taxmann's	12
V	Pricing Decisions	Samrat Dasgupta	Lecture with ICT Tools	Principles of Marketing, Pearson	12
VI	Place and Promotion Decisions	Samrat Dasgupta	Lecture with ICT Tools	Principles of Marketing.PHI	8
VII	Developments in Marketing	Samrat Dasgupta	Lecture with ICT Tools	Marketing(14 th ed.), McGraw Hill	5
Total No. of Hours allotted to the Course					60

* **Guideline to calculate** (kindly omit this section afterwards):

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Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2024-2025)

Department: Commerce

Semester: 2nd

Major/Minor/Hons/Prog: 3-Year Degree Course

Course Name: Macro Economics

Course Code: Multi-Disciplinary

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Basic Concepts and National Income Determination	Krishanu Sarkar	Lecture with ICT Tools	Macroeconomics, Pearson Education	10
II	Consumption Function	Krishanu Sarkar	Tutorial with ICT Tools	Macroeconomic Theory and Policy	10
III	Economy in the Short Run and IS-LM Framework	Krishanu Sarkar	Tutorial with ICT Tools	Macroeconomic Analysis	10
IV	Demand for money and Supply of money	Krishanu Sarkar	Tutorial with ICT Tools	Principles of Macroeconomics	10
V	Inflation, Unemployment and Labor Market	Krishanu Sarkar	Lecture with ICT Tools	Macroeconomics, McGraw Hill Education	20
Total No. of Hours allotted to the Course					60

* **Guideline to calculate** (kindly omit this section afterwards):

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2024-2025)

Department: Commerce

Semester: 2nd

Major/Minor/Hons/Prog: 3-Year Degree Course

Course Name: Computer Application In Business

Course Code: Skill Enhancement Course(SEC)

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Data Processing	Samrat Dasgupta	Lecture with ICT Tools	Fundamentals of Database Systems, Pearson Education	10
II	Word Processing	Samrat Dasgupta	Tutorial with ICT Tools	Computer Application in Business, Taxmann's	10
III	Preparing Presentations	Samrat Dasgupta	Tutorial with ICT Tools	Computer Application in Business, Scholar Tech Press	10
IV	Spreadsheet and its Business Applications	Samrat Dasgupta	Tutorial with ICT Tools	Computer Application in Business, Galgotia Publishing	10
V	Computerised Accounting Systems (ERP-Tally)	Samrat Dasgupta	Lecture with ICT Tools	Data Analysis & Business Modeling, PHI	20
Total No. of Hours allotted to the Course					60

* **Guideline to calculate** (kindly omit this section afterwards):

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Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2024-2025)

Department: Commerce

Semester: 3rd

Major/Minor/Hons/Prog: B.Com (Program)

Course Name: Human Resource Management

Course Code: BCOMMN301 (Minor)

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Introduction	Samrat Dasgupta	Lecture with ICT Tools	Fundamentals of Human Resources Management. India: Wiley	11
II	Human Resource Planning, Recruitment, and Selection	Samrat Dasgupta	Lecture Chalk and Board	Human Resource Management. Pearson	10
III	Training & Development	Samrat Dasgupta	Tutorial with ICT Tools	Human Resource Management: A Case Study Approach. CIPD	9
IV	Job Evaluation, Performance Appraisal and Compensation	Samrat Dasgupta	Lecture Chalk and Board	Human Resource Management : Text and cases.	10

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				Excel	
V	Compensation Management	Samrat Dasgupta	Lecture Chalk and Board	Management of Human Resources. Sun India	10
VI	Employee Maintenance and Employer Employee Relations	Samrat Dasgupta	Lecture Chalk and Board	Managing Human Resources, Prentice Hall. New Jersey	5
VII	Human Resource Management in Changing Environment	Samrat Dasgupta	Lecture Chalk and Board	Human Resources Management, MacMillan. Delhi	5
Total No. of Hours allotted to the Course					60

* **Guideline to calculate** (kindly omit this section afterwards): Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total become

Lesson Plan (Academic Year:2024-2025)

Department: Commerce

Semester: 3rd

Major/Minor/Hons/Prog: B.Com (Program)

Course Name: Indian Economy

Course Code: BCOMMMD301

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

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Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Basic Features of Indian Economy	Mahananda Kanjilal	Lecture with ICT Tools	Indian Economy, Himalaya Publishing House	11
II	Agriculture	Mahananda Kanjilal	LectureChalk and Board	Indian Economics, Sultan Chand & Sons	9
III	Industry	Krishanu Sarkar	Tutorial with ICT Tools	Indian Economy, S.Chand & Company	20
IV	Financial Sector	Krishanu Sarkar	Tutorial with ICT Tools	Indian Economy, Pearson	10
V	(i)Planning in India (ii)Economic Reforms	Moumita Karmakar	Tutorial with ICT Tools	The Indian Economy Since 1991, Pearson	10
Total No. of Hours allotted to the Course					60

* **Guideline to calculate** (kindly omit this section afterwards):

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

Lesson Plan (Academic Year:2024-2025)

Department: Commerce

Semester: 3rd

Major/Minor/Hons/Prog: B.Com (Program)

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Course Name: FINANCIAL ACCOUNTING-II

Course Code: BCOMMJ301

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Theoretical Framework and Basic Concept	Rupak Das	Lecture with ICT Tools	"Fundamentals of Financial Accounting" Taxmann	11
II	Business Income, Accounting for Property, Plant and Equipment, and Valuation of Inventory	Rupak Das	Lecture Chalk and Board	"Financial Accounting" Vikas Publishing House Pvt.Ltd.	9
III	(i)Business Projection (ii)Investment Accounting	Rupak Das	Tutorial with ICT Tools	"Advanced Accounts. Vol.- I." Sultan Chand Publishing	10
IV	Accounting for Inland Branches, Departments	Rupak Das	Lecture Chalk and Board	"Financial Accounting" Gayatri Publications, Guwahati	10
V	Self &Sectional Balancing System	Rupak Das	Lecture Chalk and Board	"Financial Accounting" Cengage Learning, Boston	7
VI	Advanced Issues in Partnership Accounts	Rupak Das	Lecture Chalk and Board	"Financial Accounting" Taxmann Publication, New	7

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				Delhi	
VII	Government Accounting	Rupak Das	Lecture Chalk and Board	"Financial Accounting" Singhal Publication	6
Total No. of Hours allotted to the Course					60

* **Guideline to calculate** (kindly omit this section afterwards):

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

Lesson Plan (Academic Year:2024-2025)

Department: Commerce

Semester: 3rd

Major/Minor/Hons/Prog: B.Com (Program)

Course Name: Direct Tax

Course Code: BCOMKJ302

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Introduction		Lecture with ICT Tools	Income Tax Law and Practice V.P. Gaur & D.B Narang, Kalyani Publishers	21

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II	Income from Salaries		LectureChalk and Board	Taxation: Dr. M.N. Ravi, PBP	19
III	Income from House Property		Tutorial with ICT Tools	Direct Taxes Law & Practice: Dr. Vinod K. Singhanian & Dr. Kapil Singhanian, Taxmann	20
IV	Profits and Gains of Business or Profession			Income Tax: B.B. Lal, Pearson Education	
V	Capital Gains and Income from Other Sources			Himalaya publishing House Pvt. Ltd.	
VI	Set off and Carry Forward, Deductions and Rebate			Income Tax: Johar, McGrawHill Education	
VII	Direct Tax Management			Direct Tax Law and Practice: Ahuja Girish	
Total No. of Hours allotted to the Course					60

* **Guideline to calculate** (kindly omit this section afterwards):

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5 x 12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2024 - 2025)

Department: Commerce

Semester: 4th

Major/Minor/Hons/Prog: 3 Years degree course

Course Name: Corporate Accounting

Course Code: BCOMPC401

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Accounting for Share Capital and Debentures	Samrat Dasgupta	Lecture with ICT Tools	Corporate Accounting Bhushan Kumar Publishers	6
II	Financial Statements of a Company	Samrat Dasgupta	Lecture Chalk and Board	Corporate Accounting Kumar , Alok	4
III	Valuation of Shares	Samrat Dasgupta	Tutorial with ICT Tools	Monga , J.R Corporate Accounting	5
IV	Amalgamation , Capital Reductions	Samrat Dasgupta	Lecture Chalk and Board	Sah , Raj Kumar Corporate Accounting	3
V	Accounts of Holding Companies	Samrat Dasgupta	Lecture Chalk and Board	Sehgal Ashok and Sehgal Deepak Corporate Accounting	2

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				Advanced Cost & management Accounting	
				World Press	
Total No. of Hours allotted to the Course					20

* **Guideline to calculate** (kindly omit this section afterwards):

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

Lesson Plan (Academic Year: 2024 - 2025)

Department: Commerce

Semester: 4th

Major/Minor/Hons/Prog: 3 Years degree course

Course Name: Indirect Tax Laws and Practice

Course Code: BCOMPC402

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Introduction		Lecture with ICT Tools	Ahuja, Gupta Ravi, GST and Customs Law	12
II	Levy and Collection of GST		Lecture Chalk and Board	Rasleen and Khurana, GST and Customs Law	9

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III	Input Tax Credit		Tutorial with ICT Tools	Bansal, K.M. , GST and Customs Law	11
IV	Producers and Special Provisions under GST			Gupta, S.S. , GST and Customs Law	15
V	Customs Law			Gupta, S.S. , Vastu and Sevakar, GST and Customs Law	13
Total No. of Hours allotted to the Course					20

* **Guideline to calculate** (kindly omit this section afterwards):

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Department: Commerce

Semester: 4th

Major/Minor/Hons/Prog: 3 Years degree course

Course Name: E- COMMERCE

Course Code: BCOMPSE401

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Introduction to E-Commerce	Rupak Das	Lecture with ICT Tools	Amit and Aggarwal, Business on Net: An Introduction to the whats and hows of E-Commerce	4
II	Online Business Transactions	Rupak Das	Lecture Chalk and Board	Bajaj KK, E-Commerce.Tata McGraw Hill Company	4
III	Website Designing	Rupak Das	Tutorial with ICT Tools	Chhabra, An Introduction to HTML	4
IV	E- Payment System	Rupak Das	Lecture Chalk and Board	Dietel, E-Business and E-Commerce for Managers. Pearson Education	5
V	Security and Legal Aspects of E-Commerce	Rupak Das	Lecture Chalk	Parag and	3

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			and Board	Sharma Electronic Commerce- A Manager's Guide to E-Business	
Total No. of Hours allotted to the Course					20

* **Guideline to calculate** (kindly omit this section afterwards):

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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LESSON PLAN (ACADEMIC YEAR: 2024-2025)

Department: Commerce

Semester: 5TH

Major/Minor/Hons/Program : Bachelor of Commerce (Program)

Course Name : **Advanced Financial Accounting**

Course Code : BCOMPACDSE502

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Accounting for Branches and Department	Samrat Dasgupta	Lecture with ICT Tools	P.C. Tulsian, Financial Accounting, Pearson Education	21
II	Investment accounts and Voyages accounting	Samrat Dasgupta	Lecture Chalk and Board	Mukherjee and Mukherjee, Financial Accounting I, Oxford	19
III	Accounting For Local Bodies	Samrat Dasgupta	Tutorial with ICT Tools	M.C Shukla, T.S Grewal and S.C.Gupta, Advanced Accounts, Vol- I.S.Chand & Co.	20
IV	Insurance Claim	Samrat Dasgupta		Rajasekaran, Financial Accounting , Pearson	
V	Royalties Accounting	Samrat		Amitabha	

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		Dasgupta		Mukherjee , Mohammed Hanif , Financial Accounting I, McGraw Hill Education	
Total No. of Hours allotted to the Course					60

* **Guideline to calculate** (kindly omit this section afterwards):

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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LESSON PLAN (ACADEMIC YEAR: 2024-2025)

Department: Commerce

Semester: 5TH

Major/Minor/Hons/Program : Bachelor of Commerce (Program)

Course Name : **Cost Accounting**

Course Code : BCOMPACDSE503

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Introduction	Rupak Das		Drury, Colin. Management and Cost Accounting. Thomson Learning.	
II	Elements of Cost: Material and Labour	Rupak Das		Arora, M.N. Cost Accounting- Principals and practice. Vikas Publishing House, New Delhi.	

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III	Overheads	Rupak Das		Singh, Surender, Fundamentals of Cost Accounting. Kitab Mahal, Allahabad/New Delhi	
IV	Methods Of Costing	Rupak Das		Jhamb, H.V. Fundamentals of Cost Accounting. Ane Books Pvt Ltd, New Delhi	
V	Cost Accounting System	Rupak Das		Lal, Jawahar, and Srivastava, Seema. Cost accounting. McGraw Hill Publishing Co., New Delhi.	

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LESSON PLAN (ACADEMIC YEAR: 2024-2025)

Department: Commerce

Semester: 5TH

Major/Minor/Hons/Program : Bachelor of Commerce (Program)

Course Name : Management Accounting

Course Code : BCOMPACDSE501

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks:

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Introduction	Samrat Dasgupta	Lecture Chalk and Duster	Goel,Rajiv kumar & Ishaan Goel.Concept Bulding Approach to Management Accounting	12

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II	Ratio Analysis	Samrat Dasgupta	Lecture Chalk and Duster	Cengage	12
III	Working Capital Management	Samrat Dasgupta	Lecture Chalk and Duster	Lal, Jawahar and Srivastava, Seema. Cost Accounting. McGraw Hill Publishing Co., New Delhi,	12
IV	Cash Flow and Fund Flow analysis	Samrat Dasgupta	Lecture Chalk and Duster	Singh, Surender. Management Accounting. PHI Learning Pvt. Limited, Delhi	12
V	Budgeting and Budgetary Control	Samrat Dasgupta	Lecture Chalk and Duster	Singh, S.K. and Gupta, L. "Management Accounting". A.K. Publications, New Delhi.	12

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LESSON PLAN (ACADEMIC YEAR: 2024-2025)

Department: Commerce

Semester: 5TH

Major/Minor/Hons/Program : Bachelor of Commerce (Program)

Course Name : Principles of Micro Economics

Course Code : BCOMPGE501

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks:

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Basics of Demand and Supply	Mahananda Kanjilal	Lecture Chalk and Duster	Samuelson, P.A. and Nordhus, W.D., Economics. Tata Mc-Graw Hill Publication Co. Ltd.	12

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II	Theory of Consumer Behaviour	Mahananda Kanjilal	Lecture Chalk and Duster	Koutsoyiannis, A.: Modern Micro Economics, Macmillan.	12
III	Theory of Production and Costs	Krishanu Sarkar	Lecture Chalk and Duster	Damodoran, S: Managerial Economics, Oxford University Press, New Delhi.	12
IV	Market Structure	Krishanu Sarkar	Lecture Chalk and Duster	Salvatore, D.: Managerial Economics, Tata McGraw Hill.	12
V	Factor Price Determination	Moumita Karmakar	Lecture Chalk and Duster	Stonier and Hague (1953) "A Textbook of Economic Theory". Longmans.	12

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LESSON PLAN (ACADEMIC YEAR: 2024-2025)

Department: Commerce

Semester: 5TH

Major/Minor/Hons/Program : Bachelor of Commerce (Program)

Course Name : Entrepreneurship Development

Course Code : BCOMPSE501

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks:

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Introduction	Rupak Das	Lecture chalk and duster	Brandt, S. C. Entrepreneuring The Ten Commandments for Building a Growth MacMillan Business Books.	12

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II	Individual and Entrepreneurship	Rupak Das	Lecture chalk and duster	Dollinger, M. J. Entrepreneurship Strategies and Resources Illinois Irwin Company	12
III	Entrepreneurial Sustainability	Rupak Das	Lecture chalk and duster	Holt, D. H. Entrepreneurship New Venture Creation. New Delhi: Prentice Hall of India.	12
IV	Entrepreneurial Process	Rupak Das	Lecture chalk and duster	Panda, S. C. Entrepreneurship Development, New Delhi. Anmol Publications	12
V	Managerial Aspects of Business	Rupak Das	Lecture chalk and duster	Roy, R. (2011) Entrepreneurship. Oxford University Press	12

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Lesson Plan (Academic Year: 2024-2025)

Department: commerce

Semester: 6th

Major/Minor/Hons/Prog: B.COM PROG

Course Name: Advance cost Accounting

Course Code: BCOMPACDSE601

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Process Costing	Rupak Das	Lecture with ICT Tools	Computerised Accounting Garima Agarwal,Himalaya	11
II	Uniform Costing and inter firm	Rupak Das	LectureChalk and Board	Murali Krishna	9
III	Marginal Costing	Rupak Das	Tutorial with ICT Tools	Dr. G. Yogeshweran,PBP	10
IV	Standard Costing and Variance Analysis	Rupak Das	LectureChalk and Board	J.L. Kundu,Auditing,ABS Publishing House.	10
V	Cost Audit and Cost Control	Rupak Das	LectureChalk and Board	D.Banerjee,Auditing,Book Syndicate Pvt.Ltd	10
		Rupak Das	LectureChalk and Board		10
Total No. of Hours allotted to the Course					60

* **Guideline to calculate** (kindly omit this secerwards):

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Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

Lesson Plan (Academic Year:2024-2025)

Department: commerce

Semester: 6th

Major/Minor/Hons/Prog: 3 years degree course

Course Name AUDITING

Course Code: BCOMPACDSE602.

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Introduction	Samrat Dasgupta	Lecture with ICT Tools	Ravinder Kumar, Auditing Principles and Practice	11
II	Audit of Companies	Samrat Dasgupta	LectureChalk and Board	Aruna Jha, Auditing	9
III	Audit Report and Certificates	Samrat Dasgupta	Tutorial with ICT Tools	A.K.Singh, Auditing	10
IV	Audit of Different Institutions	Samrat Dasgupta	Lecture with ICT Tools	B.K Maity, Auditing	20
V	Special Areas of Audit	Samrat Dasgupta	Lecture with ICT Tools	Gangopadhyay & Sengupta, Auditing	10
Total No. of Hours allotted to the Course					60

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* **Guideline to calculate** (kindly omit this secerwards):

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5 x 12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

Lesson Plan (Academic Year:2024-2025)

Department: commerce

Semester: 6th

Major/Minor/Hons/Prog: 3 years degree course

Course Name: Indian Economy

Course Code: BCOMPACDSE601

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Basic features of the Indian Economy	Krishanu Sarkar	Lecture with ICT Tools	Mishra and Puri, Indian Economy	11
II	Agriculture	Krishanu Sarkar	LectureChalk and Board	IC Dhingra, Indian Economics	9
III	Industry	Moumita Karmakar	Tutorial with ICT Tools	Gaurav Dutt, Indian Economy	20
IV	Financial Sector	Moumita Karmakar	LectureChalk and Board	Bhagwati, Planning and Industrialization	10

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V	Five Year Planning	Mahananda Kanjilal	LectureChalk and Board	Ahluwalia, Indian Economy	10
Total No. of Hours allotted to the Course					60

* **Guideline to calculate** (kindly omit this secerwards):

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year:2024-2025)

Department: commerce

Semester: 6th

Major/Minor/Hons/Prog: 3 years degree course

Course Name: Personal Selling and Salesmanship

Course Code: BCOMPSE601

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Introduction to Personal Selling	Rupak Das	Lecture with ICT Tools	Spiro, Management	11
II	Buying Motives	Rupak Das	Lecture Chalk and Board	Rusell, Principles and Practice	9
III	Selling Process	Rupak Das	Tutorial with ICT Tools	Futrell, Sales Management	20
IV	Sales Planning and Control	Rupak Das	Lecture Chalk and Board	A. P. Govoni, Sales Management	10
V	Sales Reports	Rupak Das	Lecture Chalk and Board	Schueing, Sales Management	10
		Rupak Das	Lecture Chalk and Board		
Total No. of Hours allotted to the Course					60

* **Guideline to calculate** (kindly omit this secerwards):

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Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2023-24)

Department: Computer Science

Semester: 6th

Major/Minor/Hons/Prog: Hons

Course Name: Computer Graphics

Course Code: BSCHCOSC601

Credit (No. of Hours per Week): 6 (L-T-P:4-0-4)

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
Theory					
Unit I	Application Areas of Computer Graphics, Overview of Graphics Systems and Devices. Points and Lines, Line Drawing Algorithms, Mid-Point Circle and Ellipse Algorithms. Filled Area Primitives, Polygon Filling Algorithms. Curve Generation: Bezier and B-Spline Curves.	Dolan Dutta	Lecture with Chalk and Board	1. Donald Hearn and M. Pauline Baker, Computer Graphics with Open GL, Prentice Hall	12
Unit II	2-D Geometrical Transforms: Translation, Scaling, Rotation, Reflection and Shear Transformations Composite Transforms, Transformations between Coordinate Systems. 2-D Viewing: The Viewing Pipeline, Viewing Coordinate Reference Frame, Window to Viewport Coordinate Transformation, Viewing Functions.	Dolan Dutta	Lecture with Chalk and Board	2. Computer Graphics by Mandeep Kaur	8
Unit III	Line Clipping Algorithms- Cohen-Sutherland and Cyrus Beck Line Clipping	Dolan Dutta	Lecture with Chalk and		7

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	Algorithms, Sutherland–Hodgeman Polygon Clipping Algorithm. 3-D Object Representation: Polygon Surfaces, Quadric Surfaces, Spline Representation		Board	3. https://www.geeksforgeeks.org/introduction-to-computer-graphics/	
Unit IV	3-D Geometric Transformations: Translation, Rotation, Scaling, Reflection and Shear Transformations, Composite Transformations, 3-D Viewing: Viewing Pipeline, Viewing Coordinates, View Volume, General Projection Transforms and Clipping.	Dolan Dutta	Lecture with Chalk and Board		6
Unit V	Visible Surface Detection Methods: Classification, Back -Face Detection, Depth Buffer, Scanline, Depth Sorting, BSP-Tree Methods, Area Sub-Division and Octree Methods Illumination Models and Surface Rendering Methods: Basic Illumination Models, Polygon Rendering Methods Computer Animation: Design of Animation Sequence, General Computer Animation Functions Key Frame Animation, Animation Sequence, Motion Control Methods, Morphing, Warping (Only Mesh Warping)	Dolan Dutta	Lecture with Chalk and Board	4. https://www.javatpoint.com/computer-graphics-tutorial	8
Unit VI	Virtual Reality : Basic Concepts, Classical Components of VR System, Types of VR Systems, Three Dimensional Position Trackers, Navigation and Manipulation Interfaces, Gesture Interfaces. Input Devices, Graphical Rendering Pipeline, Haptic Rendering Pipeline, Open GL Rendering Pipeline. Applications of Virtual Reality.	Dolan Dutta	Lecture with Chalk and Board		7

Practical

Unit I	Line Drawing Using DDA and Bresenham.	Dolan Dutta	Tutorial with Lab Practice		4
Unit II	Circle Drawing Using Midpoint Algorithm.	Dolan Dutta	Tutorial with	1. https://www.ahirlabs.com/practicals/	4

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			Lab Practice	computer-graphics-practical/	
Unit III	Ellipse Drawing Using Midpoint Algorithm.	Dolan Dutta	Tutorial with Lab Practice		4
Unit IV	Curve Generation: Bezier and B-Spline Curves.	Dolan Dutta	Tutorial with Lab Practice		6
Unit V	Line Clipping Algorithms- Cohen-Sutherland and Cyrus Beck.	Dolan Dutta	Tutorial with Lab Practice		6
Unit VI	Sutherland–Hodgeman Polygon Clipping Algorithm.	Dolan Dutta	Tutorial with Lab Practice		6
Unit VII	Polygon Filling Algorithms.	Dolan Dutta	Tutorial with Lab Practice		6
Unit VIII	Performing the basic 2D transformations such as translation, Scaling, Rotation, shearing and reflection for a given 2D object.	Dolan Dutta	Tutorial with Lab Practice		10
Total No. of Hours allotted to the Course					94(48+46)

* **Guideline to calculate (kindly omit this section afterwards):**

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5 x 12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2023-24)

Department: Computer Science

Semester: 3rd

Major/Minor/Hons/Prog: Major

Course Name: Discrete Mathematics

Course Code: BSCCOSMJ301

Credit (No. of Hours per Week): 5 (L-T-P: 4-1-0)

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
Unit I	Sets: Finite and Infinite Sets, Uncountable Infinite Sets, problems based on set theory.	Dolan Dutta	Lecture with Chalk and Board	1. C.L. Liu & Mahopatra, Elements of Discrete mathematics, 2nd Sub Edition 1985, Tata McGraw Hill 2. Kenneth Rosen, Discrete Mathematics and Its	4
	Functions: Domain, Co-domain, Range, Injective, surjective and bijective functions Equal function, Exponential function, Logarithmic function, Square function, Cube function	Dolan Dutta	Lecture with Chalk and Board		6
	Relations: Reflexive, Symmetric, Anti-symmetric, Properties of Binary Relations, Closure, Partial Ordering Relations; Counting - Pigeonhole Principle	Dolan Dutta	Lecture with Chalk and Board		8

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	Algebraic Structures: Algebraic Structures with one Binary Operation, Semi Groups, Monoids, Groups, Algebraic Structures with two Binary Operation, Rings, Integral Domain and Fields.	Dolan Dutta	Lecture with Chalk and Board	Applications, Sixth Edition, McGraw Hill	6
	Permutation and Combination: Introduction to Permutation and Combination, Permutation of thing not all different, Multiplication Principle, Addition Principle.	Dolan Dutta	Lecture with Chalk and Board	3. Discrete Mathematics, with Graph Theory and Combinatorics-	4
	Basics of probability: Random Experiment, sample space, event, types, definition, simple problems.	Dolan Dutta	Lecture with Chalk and Board	T. Veerarajan	4
	Mathematical Induction: Principle of Inclusion and Exclusion.	Dolan Dutta	Lecture with Chalk and Board	4. Graph Theory- Narsingh Deo	2
Unit II	Growth of Functions: Asymptotic Notations, Summation Formulas and Properties, Bounding Summations, Approximation by Integrals.	Dolan Dutta	Tutorial with ICT Tools	5. https://www.geeksforgeeks.org/d	4
Unit III	Recurrences: Recurrence Relations, Generating Functions, Linear Recurrence Relations with Constant Coefficients and their Solution, Substitution Method, Recurrence Trees, Master Theorem.	Dolan Dutta	Tutorial with ICT Tools	6. https://www.javatpoint.com/disc	4
Unit IV	Graph Theory: Basic Terminology, Models and Types, Multigraphs and	Dolan Dutta	Tutorial with ICT Tools	rete-	12

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	Weighted Graphs, Directed Graph, Graph Representation, Graph Isomorphism, Connectivity, Euler and Hamiltonian Paths and Circuits, Planar Graphs, Graph Coloring, Trees, Basic Terminology and Properties of Trees, Introduction to Spanning Trees.			tutorial	
Unit V	Propositional Logic: Proposition or Statements, Truth table, Logical Connectives, Well-formed Formulas, Tautologies, Contradiction, Equivalences, Inference Theory, Conjunctive Normal Form, Disjunctive Normal Form.	Dolan Dutta	Lecture with Chalk and Board		6
Total No. of Hours allotted to the Course					60

* **Guideline to calculate (kindly omit this section afterwards):**

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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DEPARTMENT OF PHYSICS

Lesson Plan (Academic Year: 2024-25)

Semester-I:

Course Name: Mechanics and General properties of Matter

(MJC-1)

Course Type: MJC -1

(Theory and Practical)

Credit: 5 (L-T-P: 3-0-4) Full Marks: 100

Course Code: BSCPHYMJ101

Course Learning Outcomes:

After the completion of course, the students will have ability to:

1. Understand vector calculus, classical mechanics of single as well as system of particles within the scope the Newtonian formulation.
2. Understand the dynamics of rigid body and concept of moment of inertia. Study of moment of inertia of different bodies and its applications.
3. Examine phenomena of simple harmonic motion and the distinction between undamped, damped and forced oscillations and the concepts of resonance and quality factor in a driven system.
4. Apply Kepler's laws to describe the motion of planets and satellite in circular orbit.
5. Study the properties of matter, response of the classical systems to external forces and their elastic deformation and its applications and comprehend the dynamics of Fluid and concept of viscosity and surface tension along with its applications

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Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books/Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
1	Vector triple product(review)	Dr. A. K.Kole	Lecture and Experiential learning	Mentioned Later	1
1	Derivatives of vectors, Gradient, Divergence, Curl of a vector field;	Dr. A. K.Kole			2
1	Vector integrations-line, surface and volume integration	Dr. A. K.Kole			2
1	Gauss' divergence theorem, Stoke's theorem, Green's theorem (statement only with simple applications);	Dr. A. K.Kole			1
1	Introduction to Orthogonal curvilinear Co-ordinate systems, unit vectors	Dr. A. K.Kole			1
1	Jacobian;	Dr. A. K.Kole			1
1	Special cases: plane, spherical and cylindrical co-ordinate systems; Infinitesimal line segment, area and volume elements in them.	Dr. A. K.Kole			2
2	Introduction to Inertial & Non-inertial reference frames; Velocity and Acceleration - tangential and normal components,	D. Banerjee			1
2	Radial and Cross-radial components; Newton's laws, Inertial frame, Work, Energy, Impulse of a force,	D. Banerjee			1
2	Freely falling bodies, Motion in a resistive medium	D. Banerjee			1
2	Projectile motion. Conservative force and concept of potential; Conservation of energy; Dissipative forces	D. Banerjee			1
2	Translation invariance and conservation of linear momentm; Central force & Conservation of angular momentum; Torque; Brief reference to fundamental forces in nature	D. Banerjee			2

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3	Oscillations: Simple Harmonic Motion and its properties, energy of a simple harmonic oscillator	Dr. A. K.Kole			1
3	Damped oscillations: under damped, over-damped, and critically damped motion,	Dr. A. K.Kole			2
3	Forced Oscillations and Resonance,	Dr. A. K.Kole			2
3	Q factor and Sharpness;	Dr. A. K.Kole			1
3	Examples of Oscillators from various branches of physics	Dr. A. K.Kole			2
4	Kepler's laws, Newton's law of gravitation	Dr. A. K.Kole			1
4	Motion of satellites in circular orbit. Geosynchronous orbits.	Dr. A. K.Kole			1
5	Degrees of freedom, Centre of mass and Centre of gravity	Dr. A. K.Kole			1
5	Momentum, Angular momentum, Torque, Kinetic energy of a system of particles;	D. Banerjee			1
5	Conservation of linear momentum, angular momentum, and Energy for a system of particles;	D. Banerjee			1
5	Centre of mass motion and Centre of mass coordinate; Examples: two coupled harmonic oscillators,	D. Banerjee			1
5	two-body systems with (i) gravitational, (ii) Coulomb interaction etc	D. Banerjee			1
6	Concept of rigid body, Euler's theorem, General motion of rigid bodies: Chasle's theorem,	D. Banerjee			1
6	Rotational motion about an axis, Moment of inertia, Radius of gyration,	D. Banerjee			1
6	Perpendicular and Parallel Axis Theorems; Moment of inertia of a uniform body-Solid and hollow cylinders, Solid and hollow spheres,	D. Banerjee			2
6	Rectangular plane, thin rod; Rotational energy, Conservation of energy, Work and Power,	D. Banerjee			1
6	Motion of a flywheel, Theory of compound pendulum- Bar and Kater's pendulum,	D. Banerjee			1
6	Foucault Pendulum; determination of "g"; Principal axis and Product of Inertia; Rotating Coordinate & Coriolis force	D. Banerjee			1
7	Elasticity: Relation between different elastic moduli and Poisson's ratio,	D. Banerjee			1
7	Torsional pendulum, Bending of beam	D. Banerjee			1

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7	Surface Tension: Angle of contact, surface tension and surface energy,	D. Banerjee			1
7	pressure difference across curved surface example, excess pressure inside spherical liquid drop	D. Banerjee			1
7	Viscosity: Streamline flow, turbulent flow, equation of continuity, determination of coefficient of viscosity by Poiseuille's method	D. Banerjee			2
7	Stoke's method. Bernoulli's theorem and its applications	D. Banerjee			1

Suggested Books /Journals/E-Content

- 1) *Vector Analysis - M. R. Spiegel, (Schaum's Outline Series) (Tata McGraw-Hill)*
- 2) *Classical Mechanics – J. C. Upadhyay, (Himalaya Publ.).*
- 3) *Introduction to Classical Mechanics - R. G. Takwale and P. S. Puranik (Tata McGraw-Hill).*
- 4) *Theoretical Mechanics - M. R. Spiegel, (Schaum's Outline Series) (McGraw-Hill).*
- 5) *Berkeley Physics Course, Vol – I (Mechanics) (Mc Graw Hill).*
- 6) *Advanced Accoustics- D. P. Raychaudhury.*
- 7) *Waves and Oscillations by N K Bajaj*
- 8) *Waves and Oscillations by R. N. Chowdhury*
- 9) *An Introduction to Mechanics by Kleppner and Kolenkow*
- 10) *Classical Mechanics by Rana Joag*
- 11) *Introduction to classical Mechanics with problems and solutions by Davis Morin, Cambridge University Press*
- 12) *Feynman Lectures Vol. 1, R. P. Feynman, R. B. Leighton, M. Sands, 2008, Pearson Education*
- 13) *Elements of properties of matter by D.S. Mathur*
- 14) *A Treatise on general properties of matter by Sengupta and Chatterjee*

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Semester-I:

Mechanics and General properties of Matter

(MNC-1)

Course Type: MNC-1

(Theory and Practical)

Credit: 5 (L-T-P: 3-0-4) Full Marks: 100

Course Code: BSCPHYMN101

Course Learning Outcomes:

After the completion of course, the students will have ability to:

1. Understand vector calculus, classical mechanics of single as well as system of particles within the scope the Newtonian formulation.
2. Understand the dynamics of rigid body and concept of moment of inertia. Study of moment of inertia of different bodies and its applications.
3. Examine phenomena of simple harmonic motion and the distinction between undamped, damped and forced oscillations and the concepts of resonance and quality factor in a driven system.
4. Apply Kepler's laws to describe the motion of planets and satellite in circular orbit.
5. Study the properties of matter, response of the classical systems to external forces and their elastic deformation and its applications and comprehend the dynamics of Fluid and concept of viscosity and surface tension along with its applications.

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books/Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
1	Vector triple product(review)	A. Dawn	Lecture and Experiential	Mentioned Later	1

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			learning	
1	Derivatives of vectors, Gradient, Divergence, Curl of a vector field;	A. Dawn		2
1	Vector integrations-line, surface and volume integration	A. Dawn		2
1	Gauss' divergence theorem, Stoke's theorem, Green's theorem (statement only with simple applications);	A. Dawn		1
1	Introduction to Orthogonal curvilinear Co-ordinate systems, unit vectors	A. Dawn		1
1	Jacobian;	A. Dawn		1
1	Special cases: plane, spherical and cylindrical co-ordinate systems; Infinitesimal line segment, area and volume elements in them.	A. Dawn		2
2	Introduction to Inertial & Non-inertial reference frames; Velocity and Acceleration - tangential and normal components,	A. Dawn		1
2	Radial and Cross-radial components; Newton's laws, Inertial frame, Work, Energy, Impulse of a force,	A. Dawn		1
2	Freely falling bodies, Motion in a resistive medium	A. Dawn		1
2	Projectile motion. Conservative force and concept of potential; Conservation of energy; Dissipative forces	A. Dawn		1
2	Translation invariance and conservation of linear momentm; Central force & Conservation of angular momentum; Torque; Brief reference to fundamental forces in nature	A. Dawn		2
3	Oscillations: Simple Harmonic Motion and its properties, energy of a simple harmonic oscillator	S. Sarkar		1
3	Damped oscillations: under damped, over-damped, and critically damped motion,	S. Sarkar		2
3	Forced Oscillations and Resonance,	S. Sarkar		2
3	Q factor and Sharpness;	S. Sarkar		1
3	Examples of Oscillators from various branches of physics	S. Sarkar		2
4	Kepler's laws, Newton's law of gravitation	A. Dawn		1
4	Motion of satellites in circular orbit. Geosynchronous orbits.	A. Dawn		1
5	Degrees of freedom, Centre of mass and Centre of gravity	A. Dawn		1
5	Momentum, Angular momentum, Torque, Kinetic energy of a system of	A. Dawn		1

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	particles;				
5	Conservation of linear momentum, angular momentum, and Energy for a system of particles;	A. Dawn			1
5	Centre of mass motion and Centre of mass coordinate; Examples: two coupled harmonic oscillators,	A. Dawn			1
5	two-body systems with (i) gravitational, (ii) Coulomb interaction etc	A. Dawn			1
6	Concept of rigid body, Euler's theorem, General motion of rigid bodies: Chasle's theorem,	S. Sarkar			1
6	Rotational motion about an axis, Moment of inertia, Radius of gyration,	S. Sarkar			1
6	Perpendicular and Parallel Axis Theorems; Moment of inertia of a uniform body-Solid and hollow cylinders, Solid and hollow spheres,	S. Sarkar			2
6	Rectangular plane, thin rod; Rotational energy, Conservation of energy, Work and Power,	S. Sarkar			1
6	Motion of a flywheel, Theory of compound pendulum- Bar and Kater's pendulum,	S. Sarkar			1
6	Foucault Pendulum; determination of "g"; Principal axis and Product of Inertia; Rotating Coordinate & Coriolis force	S. Sarkar			1
7	Elasticity: Relation between different elastic moduli and Poisson's ratio,	S. Sarkar			1
7	Torsional pendulum, Bending of beam	S. Sarkar			1
7	Surface Tension: Angle of contact, surface tension and surface energy,	S. Sarkar			1
7	pressure difference across curved surface example, excess pressure inside spherical liquid drop	S. Sarkar			1
7	Viscosity: Streamline flow, turbulent flow, equation of continuity, determination of coefficient of viscosity by Poiseuille's method	S. Sarkar			2
7	Stoke's method. Bernoulli's theorem and its applications	S. Sarkar			1

Suggested Books /Journals/E-Content

- 1) *Vector Analysis - M. R. Spiegel, (Schaum's Outline Series) (Tata McGraw-Hill)*
- 2) *Classical Mechanics – J. C. Upadhyay, (Himalaya Publ.).*

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- 3) *Introduction to Classical Mechanics* - R. G. Takwale and P. S. Puranik (Tata McGraw-Hill).
- 4) *Theoretical Mechanics* - M. R. Spiegel, (Schaum's Outline Series) (McGraw-Hill).
- 5) *Berkeley Physics Course, Vol – I (Mechanics)* (Mc Graw Hill).
- 6) *Advanced Accoustics-* D. P. Raychaudhury.
- 7) *Waves and Oscillations* by N K Bajaj
- 8) *Waves and Oscillations* by R. N. Chowdhury
- 9) *An Introduction to Mechanics* by Kleppner and Kolenkow
- 10) *Classical Mechanics* by Rana Joag
- 11) *Introduction to classical Mechanics with problems and solutions* by Davis Morin, Cambridge University Press
- 12) *Feynman Lectures Vol. 1*, R. P. Feynman, R. B. Leighton, M. Sands, 2008, Pearson Education
- 13) *Elements of properties of matter* by D.S. Mathur
- 14) *A Treatise on general properties of matter* by Sengupta and Chatterjee

SEMESTER-I

MD COURSE

PHYSICAL SCIENCE

COURSE CODE: MDC101

Course Type: MDC-1 Course Details: Physical Science L-T-P: 3-0-0

Credit: 3 Full Marks: 50

Learning objectives:

- 1) On completion of this course students should be able to demonstrate a comprehensive understanding of the fundamental concepts of matter, energy, gravity, and space, as well as their applications in various fields including medicine, communication, and modern storage technology.
- 2) Students will also be able to critically analyze the universe's structure and evolution based on the Big Bang theory.
- 3) Additionally, they should have an awareness of the role of physics in everyday life and technological advancements.

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Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books/Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
1	What is matter? Constituents of matter (upto elementary particles), States of Matter, Fundamental forces in Nature	A. K.Kole	Lecture Based Teaching	Mentioned Later	3
1	What is energy?, Types of energy, Conservation of energy dissipation of energy,	A. K.Kole			3
1	Conversion of one form of energy to another, Equivalence of matter and energy	A. K.Kole			3
1	, energy generation and distribution in our daily life (Nuclear reactors, electrical energy)	A. K.Kole			3
1	Renewable and Non-renewable sources of energy; Solar energy, tidal energy, hydro energy	A. K.Kole			3
2	The force of Gravity; Planetary motion, Newton's third law	A. K.Kole			3
2	Weightlessness; Low earth orbit; Geosynchronous satellites; Spy satellites	S.Sarkar			3
2	Medium Earth Orbit satellite; Circular Acceleration; momentum	S.Sarkar			2
2	Rockets; Airplanes,	S.Sarkar			1
2	helicopters and fans; Hot air and helium balloons	S.Sarkar			2
2	Structure of the Universe (Milkyway, solar system, planets, comets)	S.Sarkar			3
2	Evolution of the Universe (Big Bang theory)	S.Sarkar			1
3	Medical Physics: stethoscope, x-ray,	A. K.Kole			2

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3	Ultrasound, Laser, Endoscopy,	A. K.Kole			2
3	Colonoscopy, NMR,				2
3	Pet-scan, Radiation- radiation hazards and safety	S.Sarkar			2
3	Communication: optical communication, radars, broad-band, mobile communication	S.Sarkar			2
3	Modern storage system: magnetic storage, solid state devices	S.Sarkar			3
	holography	A. K.Kole			3

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Semester-III

MJC-3, Mathematical Methods of Physics

(BSCPHYMJ301, 60 Hrs)

Credit: 5 (4-1-0). F.M: 100 (30+70)

Course Learning Outcomes:

After the completion of course, the students will have ability to:

Course outcome: Students will have achieved the ability to:

1. Use concepts of calculus and concepts of random variables
2. Solve differential equations of various types.
3. Describe special functions and their recurrence relations
4. Do fourier expansion and use Fourier transforms and delta function
5. evaluate some special integrals

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books/Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
1	Infinite sequences and series; Conditional and Absolute Convergence; Tests for Convergence (proofs not required), Functions of several real variables - partial differentiation, Constrained Maximization using Lagrange Multipliers.	A.K.Kole	Lecture Based Teaching		8
2	Random variables - joint and conditional probabilities,; Moments -	A.K.Kole	Lecture Based		6

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	mean, variance, skewness and curtosis, Examples of continuous probability distribution functions (Binomial, Gaussian, and Poisson). Citation of simple examples from Physics.		Teaching		
3	Basic idea of matrix algebra , Rank of a matrix; Solution of simultaneous equation of matrices by Cramer's rule; Solution of systems of linear homogenous and inhomogeneous equations by matrix method; Cayley-Hamilton theorem; Characteristics equation for a square matrix and diagonalization; Properties of Eigenvalues and eigenvectors of matrices; Symmetric, Skew- symmetric, Hermitian, Orthogonal and Unitary matrices and their properties.	D. Banerjee	Lecture Based Teaching		12
4	Classifications of singularities for a Second Order Ordinary Differential Equation (ODE) - Fuchs' theorem; Series Solution of second order ODE with variable coefficients by Frobenius-Fuchs'' method; Solutions of Legendre, Bessel and Hermite ODE. about $x=0$.	D.Banerjee	Lecture Based Teaching		8
5	Partial Differential Equations in Physics; Types – elliptical, hyperbolic and parabolic (examples from Physics), Solutions by separation of variables method; Basic examples- Laplace's equation, Diffusion equation, Wave equation. Solution of Laplace's equation in Cartesian, spherical polar (spherically symmetric cases), and cylindrical polar (cylindrically symmetric problems) coordinate systems.	S.Sarkar	Lecture Based Teaching		8
6	Properties of Legendre Polynomials: Rodrigues Formula, Generating Function. Simple recurrence relations. Expansion of function in a series of Legendre Polynomials. Bessel Functions of the First Kind: Generating Function, simple recurrence relations. Zeros of Bessel Functions and Orthogonality.	S.Sarkar	Lecture Based Teaching		8
7	Beta and Gamma Functions and Relation between them. Expression of Integrals in terms of Gamma Functions.	S.Sarkar	Lecture Based Teaching		3

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8	(a) Periodic functions in Physics, Dirichlet Conditions (Statement only). Wronskian of two functions - linear independence and completeness, orthogonality; Fourier series expansion of periodic functions in terms of sine and cosine as basis, Calculation of Fourier coefficients in some simple cases, Complex representation of Fourier series. Expansion of non-periodic functions, Even and odd functions as special cases. Applications in Physics – vibration of string. (b) Introduction of Fourier transform as Fourier series of infinite period, properties of Fourier transform, Inverse Fourier transform, Parseval Identity. Dirac delta function and its important properties.	A.K.Kole	Lecture Based Teaching	7
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References/ Suggested Readings

1. *Mathematical Methods in the Physical Sciences*, Mary L. Boas
2. *Essential Mathematical Methods for Physicists* by Hans J. Weber and George B. Arfken
3. *Introduction to Mathematical Physics* - C. Harper (Prentice-Hall of India).
4. *Mathematical Physics* by Binoy Bhattacharya
5. *Mathematical Physics* by D. Biswas
6. *Mathematical Physics* by B S Grewal
7. *Vector Analysis* - M. R. Spiegel, (Schaum's Outline Series) (Tata McGraw-Hill).
8. *Mathematical Physics* – P.K. Chattopadhyay (Wiley Eastern)
9. *Vector Analysis* - M. R. Spiegel, (Schaum's Outline Series) (Tata McGraw-Hill)
10. *Mathematical Methods for Physicists: Arfken, Weber, 2005, Harris, Elsevier.*
11. *Fourier Analysis* by M.R. Spiegel, 2004, Tata McGraw-Hill.
12. *Mathematics for Physicists*, Susan M. Lea, 2004, Thomson Brooks/Cole.
13. *Differential Equations*, George F. Simmons, 2006, Tata McGraw-Hill.

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14. *Partial Differential Equations for Scientists & Engineers*, S.J. Farlow, 1993, Dover Pub.
15. *Mathematical methods for Scientists & Engineers*, D.A. McQuarrie, 2003, Viva Books *Mathematical Physics* by Binoy Bhattacharya
16. *Mathematical Physics* by D. Biswas
17. *Mathematical Physics* by B S Grewal
18. *Introduction to Numerical Analysis*, S.S. Sastry, 5th Edn. , 2012, PHI Learning Pvt. Ltd.
19. *Schaum's Outline of Programming with C++*. J. Hubbard, 2000, McGraw-Hill Pub.
20. *Numerical Recipes in C: The Art of Scientific Computing*, W.H. Press et al, 3rd Edn., 2007, Cambridge University Press.
21. *Mathematical Methods for Physics and Engineers*, K.F Riley, M.P. Hobson and S. J. Bence, 3rd ed., 2006, Cambridge University Press.

SEMESTER-III

Course type: **MAJOR- MJC-4**

Course code: **BSCPHYMJ302**

Course details: **OPTICS**

Course Type: MJC-4

Course Details: OPTICS

L-T-P: 3-0-4

Course Objective:-

This course reviews the concepts of waves and optics learnt at school from a more advanced perspective and goes on to build new concepts. It begins with explaining ideas of lens and different types of optical devices. The course also provides an in depth understanding of wave phenomena of light, namely, interference, diffraction and polarization with emphasis on practical applications of the same.

Course Learning Outcomes:

On successfully completing the requirements of this course, the students will have the skill and knowledge to:

- Understand Interference as superposition of waves from coherent sources derived from same parent source.
- Demonstrate basic concepts of Diffraction: Superposition of wavelets diffracted from aperture, understand Fraunhofer and Fresnel Diffraction.

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• In the laboratory course, student will gain hands-on experience of using various optical instruments and making finer measurements of wavelength of light using Newton Rings experiment, Fresnel Biprism etc.

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books/Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
1	Concept of ray, ray optics limit, geometrical and optical path, Fermat's Principle, Principle of least path and extremum paths- example of extremum path. Aplanatic surface, Application to laws of reflection and refraction for a) plane surface and b) spherical surface. Application to determine lens formula	A. K.Kole	Lecture Based & Experiential Learning	Mentioned later	4
2	Translation, refraction and reflection matrix. System matrix for thick and thin lenses. Cardinal points of optical system. Application to image formation by combination of two lenses. Concept of objective and eyepiece, Huygens Eyepiece and Ramsden Eyepiece as examples of lens combination, merits and demerits.	A. K.Kole	Lecture Based & Experiential Learning		8
3	Seidal aberration and its different types. Its removal, Abbes Sine condition. Aplanatism and Aplanatic Surface. Its application to high power microscope objective. Chromatic aberration – longitudinal and transverse. Achromatism- achromatic doublet and separated doublet.	A. K.Kole	Lecture Based & Experiential Learning		4
4	Plane Progressive elastic waves, Spherical and Cylindrical Waves; Longitudinal and Transverse Waves, Differential Equation for progressive wave (1d and 3d) and harmonic solutions, Relations	A. K.Kole	Lecture Based & Experiential Learning		8

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	among dilatation, condensation and excess pressure, Derivations of wave velocity of a longitudinal wave through an elastic medium and transverse wave through a string, Phase and Group velocity, Energy Transport associated with a Longitudinal Wave, Intensity of Wave. Definition and properties of wave front, Huygens Principle				
5	Definition and properties of wave front, Huygens Principle, Young's experiment; spatial and temporal coherence; intensity distribution; Fresnel's biprism, interference in thin film; fringes of equal inclination and equal thickness; Newton's ring. Michelson's interferometer, Multiple beam interference – reflected and transmitted pattern. Fabry-Perot interferometer	A. K.Kole	Lecture Based & Experiential Learning		7
6	Fresnel and Fraunhofer class, Fresnel's half period zones; explanation of rectilinear propagation of light; zone plate. Fraunhofer diffraction due to a single slit, double slit and circular aperture (qualitative). Plane diffraction grating (transmission). Rayleigh criterion of resolution; resolving power of prism, telescope, microscope and transmission grating.	A. K.Kole	Lecture Based & Experiential Learning		7
7	Different states of polarisation; double refraction, Malus law, Huygen's construction for uniaxial crystals; polaroids and their uses. Lissajous Figures: Production and analysis of plane, circularly and elliptically polarised light by retardation plates and Babinet compensator; Rotatory polarisation and optical activity; Fresnel's explanation of optical activity; Biquartz and half shade polarimeter	A. K.Kole	Lecture Based & Experiential Learning		7

References/ Suggested Readings:

1. *Waves: Berkeley Physics Course, vol. 3, Francis Crawford, 2007, Tata McGraw-Hill.*
2. *Fundamentals of Optics, F.A. Jenkins and H.E. White, 1981, McGraw-Hill*
3. *Principles of Optics, Max Born and Emil Wolf, 7th Edn., 1999, Pergamon Press.*

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4. *Optics*, Ajoy Ghatak, 2008, Tata McGraw Hill
5. *The Physics of Vibrations and Waves*, H. J. Pain, 2013, John Wiley and Sons.
6. *Fundamental of optics*, F. A. Jenkins & H. E. White, 1981, Tata McGraw hill.
7. *Introduction To Optics*- A.K. Ghatak
8. *Optics- Hetch And Zajack*.
9. *A Textbook On Optics*- B. Ghosh And K.G. Mazumdar.

WEB REFERENCES:

1. MIT Open Learning - Massachusetts Institute of Technology,
<https://openlearning.mit.edu/>
2. National Programme on Technology Enhanced Learning (NPTEL),
<https://www.youtube.com/user/nptelhrd>

SEMESTER: III

Course Name: Fundamentals of Optics

Course type: **MINOR**

Course code: **BSCPHYMN301**

Course details: MNC-3

Course Type: MNC-3

Course Details: Fundamentals of Optics

L-T-P: 3-0-4

Course Objective:-

This course reviews the concepts of waves and optics learnt at school from a more advanced perspective and goes on to build new concepts. It begins with explaining ideas of lens and different types of optical devices. The course also provides an in depth understanding of wave phenomena of light, namely, interference, diffraction and polarization with emphasis on practical applications of the same.

Course Learning Outcomes:

On successfully completing the requirements of this course, the students will have the skill and knowledge to:

- Understand Interference as superposition of waves from coherent sources derived from same parent source.

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- Demonstrate basic concepts of Diffraction: Superposition of wavelets diffracted from aperture, understand Fraunhofer and Fresnel Diffraction.
- In the laboratory course, student will gain hands-on experience of using various optical instruments.

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books/Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
1	Concept of ray, ray optics limit, geometrical and optical path, Fermat's Principle, Principle of least path and extremum paths-example of extremum path. Aplanatic surface, Application to laws of reflection and refraction for a) plane surface and b) spherical surface. Application to determine lens formula	A. Dawn	Lecture Based & Experiential Learning	Mentioned later	5
2	Plane Progressive elastic waves, Longitudinal and Transverse Waves, Differential Equation for 1d progressive wave and its solutions, Relations among dilatation, condensation and excess pressure, Derivations of wave velocity of a longitudinal wave through an elastic medium and transverse wave through a string, Phase and Group velocity, Energy Transport associated with a Longitudinal Wave, Intensity of Wave.	A. Dawn			8
3	Electromagnetic nature of light. Definition and Properties of wave front. Huygens Principle. Young's experiment; spatial and temporal coherence; intensity	A. Dawn			10

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	distribution; Fresnel's biprism, interference in thin film; fringes of equal inclination and equal thickness; Newton's ring.				
4	Fresnel and Fraunhofer diffraction, Fraunhofer diffraction due to a single slit, double slit. Plane diffraction grating (transmission). Rayleigh criterion of resolution; resolving power of prism.	S. Sarkar			8
5	Transverse nature of light waves. Different states of polarization; double refraction, retardation plates, Malus law, polaroids and their uses. polarizer and analyzer, Production and analysis of plane, circularly and elliptically polarized light, Rotatory polarisation and optical activity; Fresnel's explanation of optical activity; Biquartz and half shade polarimeter	S. Sarkar			7
6	Spontaneous and stimulated emissions, Population inversion, theory of lasing action (Laser). Basic principle of LED , Characteristics and applications . Basic principle of optical fiber, Characteristics and applications. Numerical aperture.	S. Sarkar			7

References/ Suggested Readings:

1. *Fundamentals of Optics*, F A Jenkins and H E White, 1976, McGraw-Hill •
2. Principles of Optics, B.K. Mathur, 1995, Gopal Printing 16 •
3. Fundamentals of Optics, H.R. Gulati and D.R. Khanna, 1991, R. Chand Publication
4. University Physics. F.W. Sears, M.W. Zemansky and H.D. Young 13/e, 1986. Addison Wesley

WEB REFERENCES:

1. MIT Open Learning - Massachusetts Institute of Technology,
<https://openlearning.mit.edu/>
2. National Programme on Technology Enhanced Learning (NPTEL),
<https://www.youtube.com/user/nptelhrd>

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SEMESTER- V

Course Name: Quantum Mechanics (Core 11)

Course Code:BSCHPHSC501

(Theory+Lab) [Credits: 06]

Theory - 45 Lectures [Marks : 50]

Course Type: Core (Theory & Practical)

Course Details: CC-11

L-T-P: 4-0-4

Course Learning Outcomes: After the completion of course, the students will have ability to: 1. Explain the failures of classical theory in explaining different experiments of early twentieth century are discussed. 2. Understand ideas of wave-particle duality, matter-wave. 3. Explain how the importance of Schrodinger equation (time-dependent and time-independent) to demonstrate solutions of some systems for different proto-type potentials (1d and 3d) . 4. Understand the concepts of quantum (hermitian) operators and basis vectors.

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books/Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
1	Planck's formula of black-body radiation	D. Banerjee	Lecture & Experiential Learning	Mentioned later	2

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1	Photoelectric effect	D. Banerjee		1
1	Bohr atom and quantization of energy levels	D. Banerjee		2
2	de Broglie hypothesis, Electron double-slit experiment	D. Banerjee		1
2	Compton effect	D. Banerjee		2
2	Davisson-Germer experiment	D. Banerjee		1
2	Heisenberg's uncertainty principle (statement) with illustrations	D. Banerjee		1
2	Concept of wave function as describing the dynamical state of a single particle	D. Banerjee		1
2	Group and phase velocities, classical velocity of a particle and the group velocity of the wave representing the particle Principle of superposition	D. Banerjee		1
2	Schrodinger equation. Probabilistic interpretation;	D. Banerjee		1
2	Equation of continuity, probability current density.	D. Banerjee		1
2	Boundary conditions on the wave function.	D. Banerjee		1
3	Dynamical variables as linear hermitian operators and eigenvalue equations	A.K.Kole		2
3	Momentum, energy and angular momentum operators	A.K.Kole		1
3	Measurement of observables, expectation values	A.K.Kole		1
3	Commutation relations between operators	A.K.Kole		2
3	Compatible observables and simultaneous measurements	A.K.Kole		2
3	Ehrenfest theorem	A.K.Kole		2
4	Eigenstates	A.K.Kole		2
4	normalization and orthonormality	A.K.Kole		2
5	One dimensional potential well and barrier, boundary conditions, bound and unbound states	A.K.Kole		2
5	Reflection and transmission coefficients for a rectangular barrier in one dimension – explanation of alpha decay	A.K.Kole		2
5	Free particle in one dimensional box, box normalization, momentum eigenfunctions of a free particle	A.K.Kole		3
5	Linear harmonic oscillator, energy eigenvalues from Hermite differential equation	A.K.Kole		2

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5	Wave function for ground state, parity of wave function	A.K.Kole			2
6	Angular momentum operators and their commutation relations	A.K.Kole			2
	Eigenvalues and eigenfunctions of L^2 and L_z	A.K.Kole			1
6	Theorem of addition of angular momenta [statement with examples]				1
6	The hydrogen atom problem – stationary state wavefunctions as simultaneous eigenfunctions of H , L^2 , and L_z				2
6	Radial Schrodinger equation and energy eigenvalues [Laguerre polynomial solutions to be assumed]				2
6	Degeneracy of the energy eigenvalues.				2

References/ Suggested Readings:

1. Introduction to Quantum Mechanics (2nd Edition) by David J. Griffiths
2. Quantum Physics of Atoms, Molecules, Solids, Nuclei and Particles, 2ed by Robert Eisberg, Robert Resnick
3. A Textbook Of Quantum Mechanics 2/E by P M Mathews and K Venkatesan
4. Quantum Mechanics: Theory and Applications by Ajoy Ghatak and S. Lokanathan
5. Introductory Quantum Mechanics by S. N. Ghoshal
6. Modern Physics by A. Beiser

SEMESTER-V

Course Name: Thermal Physics II

Course Code: BSCHPHSSC502

Course Type: Core(Theory)

Course Details:CC-12

L-T-P: 5-1-0

Course Learning Outcomes: After the completion of course, the students will have ability to:

1. Demonstrate a mastery of the core knowledge in the areas of Thermal Physics.

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2. Explain the concept of thermodynamic as an empirical description for the thermal properties of a macroscopic system.

3. Understand the applications of thermodynamics and the theory of the phase-transitions are discussed.

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books/Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
1	Basic concepts: microscopic and macroscopic points of view; exact and inexact differentials		Lecture	Mentioned later	1
1	Thermodynamic variables of a system;; thermal equilibrium and the zeroth law				1
1	Concept of temperature: internal energy; external work; thermodynamic equilibrium quasi –static processes				1
1	First law of thermodynamics and applications magnetic systems;				1
1	Specific heats and their ratio; isothermal and adiabatic changes in perfect and real gases.				2
2	Reversible and irreversible processes;;:				1
2	Carnot's cycle and Carnot's theorem – efficiency of heat engines				2
2	Entropy; second law of thermodynamics –different formulations and their equivalence				1
2	Clausius theorem: entropy changes in simple processes				2
2	T -S diagrams for simple processes; isothermal and adiabatic elasticities				1
2	Increase of entropy in natural processes; entropy and disorder				2

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2	Probabilistic interpretation of entropy. Kelvin's scale of temperature – relation to perfect gas scale				1
3	Enthalpy, Helmholtz and Gibbs Free energies				1
3	Legendre transformations				1
3	Maxwell's relations and simple deductions using these				2
3	thermodynamic equilibrium and free energies				1
4	External Combustion engine – steam engine and				1
4	the Rankinecycle				1
4	Internal combustion engines – Otto and				2
4	Diesel cycles				1
5	Compression and absorption types of machines				5
6	Gibbs Helmholtz equation				2
7	Equilibrium between phases and triple point; Clausius Clapeyron's equation				1
7	Gibbs phase rule and simple applications;				1
7	First and higher order phase transitions – Ehrenfest's classification				1
7	Joule Thomson effect; inversion temperature, regenerative cooling				1
7	Liquefaction of air, hydrogen and helium				1
7	Cooling by adiabatic expansion and adiabatic demagnetization				1
8	Thermodynamic functions for a mixture of gases				1
8	Change of entropy in diffusion				1
8	Law of mass action; heat of reaction; effect of temperature and pressure on reaction constant				1
8	Chemical potential; conditions of chemical equilibrium principle of Le - Chatelier				1
8	Nernst heat theorem; third law of thermodynamics				1

References/ Suggested Readings:

1. Saha and Srivastava : A Treatise on Heat – Indian Press, Allahabad.

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2. Zemansky and Ditman; Heat and Thermodynamics – McGraw Hill Kogakusha.
3. Sears and Salinger : Thermodynamics, Statistical Mechanics and Kinetic Theory – Narosa.
4. Kittel and Kroemer : Thermal Physics – Freeman.
5. Loeb : Kinetic Theory - Radha
6. Jeans : Dynamical theory of Gases - Cambridge
7. Fermi : Thermodynamics – Chicago University Press
8. Callen : Thermodynamics – Wiley International
9. Pratip Chaudhuri :Gaser Anabiktatwa (in Bengali) = W.B. state Book Board.
10. Ashoke Ghosh :Tapgatitawa (in Bengali) – W.B. state Book Board.
11. Thermal Physics by Roy & Gupta

SEMESTER-V

Discipline Specific Elective (DSE I & II)

Course Name: Nuclear and Particle Physics

Course Code: BSCHPHSDSE501

(Theory) [Credits: 06]

Theory - 60 Lectures [Marks : 50]

Course Type: DSEC(Theory)

Course Details: DSEC1&2

L-T-P: 5-1-0

Course Learning Outcomes:

After the completion of course, the students will have ability to:

1. *Explain structure and properties of nuclei, the mechanism of different radioactive decays and their applications in peaceful use of nuclear energy.*
2. *Understand what are the elementary particles that constitute this known universe.*
3. *Gather capability of elementary problem solving in nuclear and particle physics.*

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Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books/Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
1	Constituents of nucleus and their Intrinsic properties	D. Banerjee	Lecture Based Learning	Mentioned later	2
1	Quantitative facts about mass, radii, charge density (matter density)	D. Banerjee			1
1	Binding energy, average binding energy and its variation with mass number	D. Banerjee			2
1	Main features of binding energy versus mass number curve, N/A plot	D. Banerjee			1
1	Angular momentum, parity	D. Banerjee			2
1	Magnetic moment, electric moments, nuclear excited states	D. Banerjee			2
2	Liquid drop model approach	S.Sarkar			2
2	Semi empirical mass formula and significance of its various terms	S.Sarkar			2
2	Condition of nuclear stability, two nucleon separation energies	S.Sarkar			1
2	Fermi gas model (degenerate fermion gas, nuclear symmetry potential in Fermi gas)	S.Sarkar			2
2	Evidence for nuclear shell structure	S.Sarkar			1
2	Nuclear magic numbers, basic assumption of shell model	S.Sarkar			2
2	Concept of mean field, residual interaction	S.Sarkar			1
2	Concept of nuclear force	S.Sarkar			1
3	Alpha decay: basics of α -decay processes, theory of α - emission	A.Dawn			2
3	Gamow factor, Geiger Nuttall law, α -decay spectroscopy	A.Dawn			1

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3	(b) β -decay: energy kinematics for β -decay	A.Dawn			1
3	Positron emission, electron capture, neutrino hypothesis, Reines and Cowan experiment	A.Dawn			1
3	(c) Gamma decay: Gamma rays emission & kinematics	A.Dawn			2
3	Gamma ray interaction through matter	A.Dawn			1
3	Internal conversion	A.Dawn			1
3	Photoelectric effect	A.Dawn			1
3	Compton scattering, pair production	A.Dawn			1
3	Neutron interaction with matter	A.Dawn			1
4	Types of Reactions	D. Banerjee			1
4	Conservation Laws, kinematics of reactions	D. Banerjee			1
4	Q-value, reaction rate, reaction cross section	D. Banerjee			2
4	Concept of compound and direct Reaction	D. Banerjee			1
4	Resonance reaction	D. Banerjee			1
4	Coulomb scattering (Rutherford scattering)	D. Banerjee			2
5	Accelerator facility available in India:, Van-de Graaff generator (Tandem accelerator)	S.Sarkar			1
5	Linear accelerator	S.Sarkar			1
5	Cyclotron	S.Sarkar			1
5	Betatron	S.Sarkar			1
5	Synchrotrons	S.Sarkar			1
6	Discovery of elementary particles				2
6	Particle interactions; basic features				2
6	types of particles and its families				2
6	Symmetries and Conservation Laws: energy and momentum, angular momentum, parity, baryon number, Lepton number, Isospin, Strangeness and charm				5
6	concept of quark				2

References/ Suggested Readings:

1. Introductory nuclear Physics by Kenneth S. Krane (Wiley India Pvt. Ltd., 2008).

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2. Concepts of nuclear physics by Bernard L. Cohen. (Tata Mcgraw Hill, 1998).
3. Introduction to the physics of nuclei & particles, R.A. Dunlap. (Thomson Asia, 2004).
4. Introduction to High Energy Physics, D.H. Perkins, Cambridge Univ. Press.
5. Introduction to Elementary Particles, D. Griffith, John Wiley & Sons.
6. Quarks and Leptons, F. Halzen and A.D. Martin, Wiley India, New Delhi.
7. Basic ideas and concepts in Nuclear Physics - An Introductory Approach by K. Heyde (IOP- Institute of Physics Publishing, 2004).
8. Radiation detection and measurement, G.F. Knoll (John Wiley & Sons, 2000).
9. Physics and Engineering of Radiation Detection, Syed Naeem Ahmed (Academic Press, Elsevier, 2007).
10. Theoretical Nuclear Physics, J.M. Blatt & V. F. Weisskopf (Dover Pub.Inc., 1991).
11. Nuclear Physics by D C Tayal
12. Nuclear Physics by S B Pattel

SEMESTER-V

Discipline Specific Elective (DSE I & II)

Course Name: Atomic Physics & Spectroscopy

Course Code: BSCHPHSDSE503

(Theory) [Credits: 06]

Theory - 60 Lectures [Marks : 50]

Course Type: DSEC (Theory)

Course Details: DSEC1&2

L-T-P: 5-1-0

Course Learning Outcomes:

After the completion of course, the students will have ability to:

1. *Understand the concepts of atomic spectra and its origin using the old quantum theory whose consistency can be later verified by the direct application of the quantum mechanics.*
2. *Account for theoretical models, terminology & working methods used in atomic and molecular physics.*
3. *Carry out experimental and theoretical studies on atomic and molecular physics with focus on structure and dynamics of atoms and molecules.*

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Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books/Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
1	Good quantum numbers, and selection rules...	S. Sarkar	Lecture Based Learning	Mentioned later	2
1	Stern-Gerlach experiment and spin as an intrinsic quantum number	S. Sarkar			3
1	Incompatibility of spin with classical ideas	S. Sarkar			1
1	Bohr-Sommerfeld model.	S. Sarkar			3
1	Fine structure.	S. Sarkar			2
1	Study of fine structure by Michelson interferometer	S. Sarkar			3
2	Magnetic moment of the electron,...	D.Banerjee			2
2	Lande g factor	D.Banerjee			2
2	Vector model – space quantization	D.Banerjee			4
2	Zeeman effect	D.Banerjee			3
2	Explanation from vector atom model	D.Banerjee			3
3	Pauli exclusion principle	A.Dawn			2
3	Shell structure	A.Dawn			3
3	Hund's rule	A.Dawn			2
3	spectroscopic terms of many electron atoms in the ground state.	A.Dawn			3
4	Diatomic molecules – rotational and vibrational energy levels.	S. Sarkar			3
4	Basic ideas about molecular spectra.	A.Dawn			3

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4	Raman effect and its application to molecular spectroscopy (qualitative discussion only).	A.Dawn			6
5	Population inversion	D.Banerjee			2
5	Einstein's A and B coefficients	D.Banerjee			2
5	Feedback of energy on a resonator	D.Banerjee			2
5	3-level and 4- level systems	D.Banerjee			2
5	Ruby Laser and He-Ne Laser	D.Banerjee			2

References/ Suggested Readings:

1. Atomic Physics (Modern Physics) by Ghoshal S. N.
2. Concepts of Modern Physics by Arthur Beiser and Shobhit Mahajan.
3. Introduction to Atomic Spectra by Harvey Elliott White
4. Atomic & Molecular Spectra: Laser” by Raj Kumar
5. Elements of Spectroscopy Atomic, Molecular and Laser Physics” by Gupta
6. Modern Atomic Physics by Vasant Natarajan
7. Quantum Mechanics by S N Ghosal
8. Modern Physics by Mani & Mehta

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Lesson Plan (Academic Year: 2024-25 ODD SEM)

Department: English

Semester: 1

Major and Minor

Course Name: Understanding Poetry

Course Code: BAENGMJ101

Credit (No. of Hours per Week): 5

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Unit I: Literary Terms Sonnet, Lyric, Ode, Ballad, Dramatic Monologue Heroic Couplet Epic Elegy	AC CD RR SM	Lecture with ICT Tools		10
II	Unit II: Poetry and Critical Appreciation of poems 1. Loving in Truth-Sir Philip Sidney 2. To His Coy Mistress-Andrew Marvell 3. Lycidas-John Milton 4. La Belle Dame Sans Merci-John Keats	AC RR SM AC	LectureChalk and Board		30

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	5. Mac Flecknoe-John Dryden 6. I had gone a begging from-Gitanjali No. 50---Rabindranath Tagore 7. In the Bazaars of Hyderabad-Sarojini Naidu 8. Omeros Derek Walcott	CD AM AM RR			
III	Unit III: Rhetoric and Prosody	AC & AM	Lecture with ICT Tools		20
Total No. of Hours allotted to the Course					60

* **Guideline to calculate** (kindly omit this section afterwards):

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2024-25 ODD SEM)

Department: English

Semester: I

Major/Minor/Hons/Prog:

Course Name: English Communication

Course Code: AECE 101

Credit (No. of Hours per Week): 4*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Types and modes of Communication	Runa Chatterjee	Lecture with ICT Tools, role play, PPT PRESENTATION,	Business Communication by Asha Kaul; Business	21

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				Communication, OUP	
II	Interview process, Group Discussion, Public Speaking, Dialogue Monologue	Runa Chatterjee	LectureChalk and Board, Classroom exercises, practical practice, speaking exercises , mock interview	Business Communication by Shalini Verma, Fluency in English, Part II, OUP	19
III	Passage for Comprehension	Riman Rakshit	Reading exercises, classroom exercises, vocabulary quiz	Language through Literature and Creativity, Orient Blackswan, 2013	20
Total No. of Hours allotted to the Course					60

* **Guideline to calculate** (kindly omit this section afterwards):

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2024-25 ODD SEM)

Department: English

Semester: I

Major/Minor/Hons/Prog:

Course Name: Grammatical skills and Composition

Course Code: BAENGSE101

Credit (No. of Hours per Week): 3*

Total Teaching Days: 90* (As per KNU Academic Calendar)

- **Total Teaching Weeks:** 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Grammatical skills	Ayan Mukherjee	Lecture with ICT Tools, class room Grammar exercises	High School Grammar by Wren & Martin	21
II	Composition writing	Runa	LectureChalk	High School	19

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		Chatterjee	and Board	Grammar & Composition by Wren & Martin	
III	Not applicable	pqr	Tutorial with ICT Tools		20
Total No. of Hours allotted to the Course					60

* **Guideline to calculate** (kindly omit this section afterwards):

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2024-25 ODD SEM)

Department: English

Semester: 1

Major/Minor MDC

Course Name: Film Appreciation

Course Code: MDC107

Credit (No. of Hours per Week): 3

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Unit I: Cinematic Terms: Montage, Deep Focus , Long Shot, Flash Back, Art Film, Reels, Documentary, Jump-Cut	RC	Lecture with ICT Tools		10
II	Unit II: History and Development of Hindi and Bengali Cinema:	RR	LectureChalk and Board		25

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	Silent Films, Early Talkies, Mainstream Hindi Cinema, Angry Young Man, Art Films, Bollywood, Middle of the Road, Post-liberalism, Bengali Trio Directors- (Satyajit Ray, Ritwik Ghatak, Mrinal Sen)				
III	Unit III: Film Review: 1. Modern Times 2. Garam Hawa 3. Hirak Rajar Deshe 4. Throne of Blood 5. Unishe April 6. Haider 7. Taree Zameen Par	RC /Haider- RR	Tutorial with ICT Tools		25
Total No. of Hours allotted to the Course					60

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Lesson Plan (Academic Year:2024-25 ODD SEM)

Department: English

Semester: 3

Major

Course Name: Understanding Drama

Course Code: BAENGMJ302

Credit (No. of Hours per Week): 5

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Unit I: Dramatic Terms Tragedy, Comedy, Farce, Monologue (Soliloquy and Aside), Conflict, Chorus, Three Unities, Melodrama	CD-Chorus, Monologue, Melodrama SM-Comedy, Farce RR-Three Unities, Tragedy, Conflict	Lecture with ICT Tools		10
II	Unit II: Poetry 1. Christopher Marlowe: Dr. Faustus 2. Ben Jonson: Everyman in His Humour	AM SM	Lecture Chalk and Board		20+20

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III	Unit III: Origin and Development of English Drama	AC	ICT+ Lecture		10
Total No. of Hours allotted to the Course					60

* **Guideline to calculate** (kindly omit this section afterwards):

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year:2024-25 ODD SEM)

Department: English

Semester: 3

Major/Minor

Course Name: Anglo-Saxon to Early 16th Century (1543)

Course Code: BAENGMJ301

Credit (No. of Hours per Week): 5

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Unit I: Growth and Development of English Language Scandinavian, French, Latin and Shakespearean Influences and Loan Words	RC	Lecture with ICT Tools	Otto Jespersen's <i>Growth and Structure of the English Language</i>	10
II	Unit II: Poetry 1. Battle of Maldon 2. Dream of the Rood 3. Wife's Lament 4. Pearl 5. Chaucer: Prologue to The Canterbury Tales (l1-42)	CD RR CD RR CD AC AC	Lecture Chalk and Board	<i>The Anglo-Saxon World: An Anthology</i> <i>Pearl: A Transcreation of the 14th Century Middle English Poem</i> (J.D. Winter)	40

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	6. Thomas Wyatt: RemembranceR 7. Sir Henry Howard: "Sonnet no. 7"				
III	Unit III: History of Literature	AC, CD	Lecture+ICT		10
Total No. of Hours allotted to the Course					60

* **Guideline to calculate** (kindly omit this section afterwards):

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2024-25)

Department: English

Semester: 3

Minor

Course Name: Understanding Drama

Course Code: BAENGMN301

Credit (No. of Hours per Week): 5

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Unit I: Dramatic Terms Tragedy, Comedy, Farce, Monologue (Soliloquy and Aside), Conflict, Chorus, Three Unities, Melodrama	AR-Chorus, Monologue, Melodrama SM-Comedy, Farce AM-Tragedy, Conflict, Three Unities	Lecture with ICT Tools		10
II	Unit II: Poetry 1. Christopher Marlowe: Dr. Faustus 2. Ben Jonson: Everyman in His Humour	AM SM	LectureChalk and Board		20+20
III	Unit III: Origin and Development of English Drama	AC	ICT+ Lecture		10

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					Total No. of Hours allotted to the Course

* **Guideline to calculate** (kindly omit this section afterwards):

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 1 (NEP-2020)

Major:

Course Name: Fundamentals of Indian Philosophy

Course Code: BAPHIMJ101

Credit (No. of Hours per Week): 5

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	What is Philosophy?	Abdul Aziz-Us-Subhan	Lecture/ Chalk and Board	*An Introduction to Indian Philosophy by S. C. Chatterjee & D. M. Dutta. * A Critical Survey of Indian Philosophy by C. D. Sharma. * Bhāratīya DarśanerMarmakathā by Haridas Bandyopadhyay.	15
II	Some Ethical Concepts of Indian Philosophy.	Abdul Aziz-Us-Subhan	Lecture/ Chalk and Board	* Ethics of the Hindus by S. K. Maitra. * The Central Philosophy of Buddhism by T.R.V.Murti.	15
III	Some Basic Concepts of Indian Epistemology.	Abdul Aziz-Us-Subhan	Lecture/ Chalk and Board	* Nyaya-Vaiśeṣika Darśan by Karuna Bhattacharya. * Nyayatattva Parikrama by Kalikrishna Bandyopadhyay.	15
IV	Different Theories of Causation.	Rajibul Islam	Lecture/ Chalk and Board	* Sāṃkhyakārikā O Sāṃkhyatattvakaumudī by Rajat Bhattacharya. * Bhāratīya DarśanerMarmakathā by Haridas Bandyopadhyay.	15
Total No. of Hours allotted to the Course					60

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 1 (NEP-2020)

Minor:

Course Name: Fundamentals of Indian Philosophy

Course Code: BAPHIMN101

Credit (No. of Hours per Week): 5

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	What is Philosophy.	Abdul Aziz-Us-Subhan	Lecture/ Chalk and Board	*An Introduction to Indian Philosophy by S. C. Chatterjee & D. M. Dutta. * A Critical Survey of Indian Philosophy by C. D. Sharma. * Bhāratīya DarśanerMarmakathā by Haridas Bandyopadhyay.	15
II	Some Ethical Concepts of Indian Philosophy.	Abdul Aziz-Us-Subhan	Lecture/ Chalk and Board	* Ethics of the Hindus by S. K. Maitra. * The Central Philosophy of Buddhism by T.R.V.Murti.	15
III	Some Basic Concepts of Indian Epistemology.	Rajibul Islam	Lecture/ Chalk and Board	* Nyaya-Vaiśeṣika Darśan by Karuna Bhattacharya. * Nyayatattva Parikrama by Kalikrishna Bandyopadhyay.	15
IV	Different Theories of Causation.	Rajibul Islam	Lecture/ Chalk and Board	* Sāṃkhyakārikā O Sāṃkhyatattvakaumudī by Rajat Bhattacharya. * Bhāratīya DarśanerMarmakathā by Haridas Bandyopadhyay.	15
Total No. of Hours allotted to the Course					60

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 1 (NEP-2020)

SEC

Course Name: Reasoning: Deductive and Inductive

Course Code: BAPHISE101

Credit (No. of Hours per Week): 3

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
	*What is Reasoning? *Standard form categorical propositions: Forms and Classification. *Distribution of terms of standard form categorical propositions. *Proposition and argument	Rajibul Islam	Lecture/ Chalk and Board	* I. M. Copi, C. Cohen, P. Jetli & M. Prabhakar: Introduction to Logic (14th Edition) *Agarwal: A Modern Approach to Logical Reasoning. * Shukla Chakraborty: Tarkabidya.	6
	* Argument: deductive and inductive * Deductive Argument: Immediate inference, Categorical Syllogism * Opposition of propositions: Rules and Fallacies * Immediate inference: Rules and Fallacies	Abdul Aziz-Us-Subhan	Lecture/ Chalk and Board	* I. M. Copi, C. Cohen, P. Jetli & M. Prabhakar: Introduction to Logic (14th Edition) *Agarwal: A Modern Approach to Logical Reasoning. * Shukla Chakraborty: Tarkabidya.	9
	* Categorical Syllogisms: Rules and Fallacies *Fallacious Reasoning in Argumentation *Inductive Argument: Rules and Fallacies *Causal Reasoning	Rajibul Islam	Lecture/ Chalk and Board	* I. M. Copi, C. Cohen, P. Jetli & M. Prabhakar: Introduction to Logic (14th Edition) *Agarwal: A Modern Approach to Logical Reasoning. * Shukla Chakraborty: Tarkabidya.	9
	*Method of Scientific Reasoning *Cause and Effect *Mill's methods of causal reasoning *Scientific Thought and Unscientific Thought	Rajibul Islam	Lecture/ Chalk and Board	* I. M. Copi, C. Cohen, P. Jetli & M. Prabhakar: Introduction to Logic (14th Edition) *Agarwal: A Modern Approach to Logical Reasoning. * Shukla Chakraborty: Tarkabidya.	10
	*Hypotheses	Abdul Aziz-Us-Subhan	Lecture/ Chalk and Board	* Shukla Chakraborty: Tarkabidya.	2
Total No. of Hours allotted to the Course					36

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 2

CC-3

Course Name: Outlines of Indian Philosophy-II

Course Code: BAHPHIC201

Credit (No. of Hours per Week): 6

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Yoga: <i>citta, cittabhūmi, cittavṛtti, cittavṛttinirodha</i> and <i>īśvara</i>	A.A.Subhan	Lecture/ Chalk and Board	* <i>An Introduction to Indian Philosophy</i> by S. C. Chatterjee & D. M. Dutta. * <i>A Critical Survey of Indian Philosophy</i> by C. D. Sharma. * <i>Bhāratīya DarśanerMarmakathā</i> by Haridas Bandyopadhyay.	15
II	Pūrva Mīmāṃsā : <i>pramāṇa</i> -s with special reference to <i>arthāpatti</i> and <i>anupalabdhi</i> , Theories of error: <i>akhyativāda</i> (prabhākara), <i>anyathakhyativāda</i> (Bhātta)	A.A.Subhan	Lecture/ Chalk and Board	* <i>Ethics of the Hindus</i> by S. K. Maitra. * Haridas Bandyopadhyay : <i>Bhāratīya Darśaner Marmakathā</i> ,	20
III	Advaita Vedānta : Nature of Brahman, <i>vivartavāda, māyā, jīva</i> and <i>jagat</i>	A.A.Subhan	Lecture/ Chalk and Board	* <i>Nyaya-Vaiśeṣika Darśan</i> by Karuna Bhattacharya. * <i>Nyayatattva Parikrama</i> by Kalikrishna Bandyopadhyay.	15
IV	Viśiṣṭādvaita Vedānta: Distinction between <i>advaitavāda</i> and <i>viśiṣṭādvaitavāda</i> , Nature of <i>īśvara, jīva</i> and <i>jagat</i> , Ramanuja's Criticism of Saṃkara's Doctrine of <i>māyā</i>	A.A.Subhan	Lecture/ Chalk and Board	* <i>An Introduction to Indian Philosophy</i> by S. C. Chatterjee & D. M. Dutta. * <i>A Critical Survey of Indian Philosophy</i> by C. D. Sharma. * <i>Bhāratīya DarśanerMarmakathā</i> by Haridas Bandyopadhyay	22
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 2

CC-4

Course Name: History of Western Philosophical Thoughts-II

Course Code: BAHPHIC202

Credit (No. of Hours per Week): 6

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Locke :(a) Refutation of Innate Ideas and Principles, (b) Theory of Ideas, (c) Distinction between Primary and Secondary Qualities, (d) Theory of Substance, (e) Theory of Knowledge, (f) The Extent and Validity of Knowledge	Rajibul Islam	Lecture/ Chalk and Board	W.K. Wright: A History of Modern Philosophy,	10
II	Berkeley : (a)Rejection of the Lockean notion of Substance, (b) Refutation of Abstract Ideas (c) Rejection of the Distinction between Primary and Secondary Qualities, (d) <i>Esse Est Percipii</i> (e) God and self	Rajibul Islam	Lecture/ Chalk and Board	B. Russell : History of Western Philosophy,G	10
III	Hume : (a)Origin of Knowledge : Impressions and Ideas, (b) Laws of Association, (c) Distinction between Relations of Ideas and Matters of Fact, (d) Notion of Causality, (e) The Problem of Personal Identity, (F) Hume's Scepticism, (g) rejection of metaphysics	Rajibul Islam	Lecture/ Chalk and Board	W.K. Wright: A History of Modern Philosophy,	10
IV	Kant :(a)Idea of the Critical Philosophy, (b) Possibility of Metaphysics, (c) Kant's Copernican Revolution in Philosophy, (d) Role of Sensibility and Understanding in the origin of Knowledge, (e) Possibility of Synthetic <i>a priori</i> Judgments, (f) Space and Time: Metaphysical and Transcendental expositions.	Rajibul Islam	Lecture/ Chalk and Board	F. Copleston : A History of Philosophy [Vols. I, IV, V, & VII], Y. Masih : <i>A Critical History of Western Philosophy</i> , Motilal I. Kant : <i>Critique of Pure Reason</i> , <i>Translated by N.K.Smith</i>	20
	Hegel : (a)Dialectical Method, (b)The Absolute.	Rajibul Islam	Lecture/ Chalk and Board	F. Copleston : A History of Philosophy [Vols. I, IV, V, & VII],	11
	A.J. Ayer : (a)The Elimination of Metaphysics (b)Verifiability Theory of Meaning	Rajibul Islam	Lecture/ Chalk and Board	F. Copleston : A History of Philosophy [Vols. I, IV, V, & VII],	11
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 2

GE-1/ CC-3

Course Name: History of Western Philosophy

Course Code: BAHPHIGE201/ BAPPHIC201/ BAPPHIGE601

Credit (No. of Hours per Week): 6

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Descartes : (a) Method of Doubt, (b) <i>Cogito Ergo Sum</i> , (c) Criterion of Truth, (d) Existence of God, e) Mind and Body	A.A.Subhan	Lecture/ Chalk and Board	B. Russell : History of Western Philosophy,G	10
II	Spinoza : (a) The Doctrine of Substance, Attributes and Modes, (b) Relation between Mind and Body : Parallelism, (c) Degrees of Knowledge	A.A.Subhan	Lecture/ Chalk and Board	W.K. Wright: A History of Modern Philosophy,	10
III	Leibniz : (a) Doctrine of Monads and Pre-established Harmony (b) Truths of Reason and Truths of Fact, (c) Theory of Knowledge	A.A.Subhan	Lecture/ Chalk and Board	R. Falckenberg : History of Modern Philosophy	10
IV	Locke : (a)Refutation of Innate Ideas and Principles, (b) Theory of Ideas, (c) Theory of Substance, (d) Distinction between Primary and Secondary Qualities, (e) Theory of Knowledge	A.A.Subhan	Lecture/ Chalk and Board	R. Falckenberg : History of Modern Philosophy	20
V	Berkeley : (a) Rejection of the Lockean notion of Substance, (b) Refutation of Abstract Ideas (c) <i>Esse Est Percipii</i>	A.A.Subhan	Lecture/ Chalk and Board	R. Falckenberg : History of Modern Philosophy	10
VI	Hume : (a) Origin of Knowledge : Impressions and Ideas, (b) Laws of Association, (c) Distinction between Relations of Ideas and Matters of Fact, (d) Notion of Causality (F) Hume's Scepticism.	A.A.Subhan	Lecture/ Chalk and Board	F. Copleston : A History of Philosophy [Vols. I, IV, V, & VII],	12
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 3

CC-5

Course Name: Indian Ethics

Course Code: BAHPHIC301

Credit (No. of Hours per Week): 6

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	<i>puruṣārtha</i> (Cārvāka, Bauddha and āstika views)	Rajibul Islam	Lecture/ Chalk and Board	Panchanan Shastri :Cārvāk Darśan	10
II	Vedic Concept of <i>ṛta</i> , <i>satya</i> , <i>yajña</i> , <i>ṛṇa</i> , <i>vidhi</i> and <i>niṣedha</i>	Rajibul Islam	Lecture/ Chalk and Board	M. Hiriyanna: Outlines of Indian Philosophy.	10
III	The concepts of <i>niṣkāmakarma</i> and <i>sthitaprajña</i> in the <i>Śrīmadbhagavadgītā</i>	Rajibul Islam	Lecture/ Chalk and Board	Panchanan Shastri : Bauddha Darśan	10
IV	Buddhist Ethics : <i>pañcaśīla</i> and <i>brahmavihārabhāvanā</i>	Rajibul Islam	Lecture/ Chalk and Board	Karuna Bhattacharya: Nyaya-Vaiśeṣika Darśan, R.D.Ranade : A Constructive Survey of Upanisadic Philosophy,	20
V	Jaina Ethics : <i>pañcamahāvratā</i> , <i>triratna</i> , <i>anuvratā</i> and <i>mahāvratā</i>	Rajibul Islam	Lecture/ Chalk and Board	Rajat Bhattacharya : Sāṃkhyakārikā O Sāṃkhyatattvakumudī, T.R.V.Murti : The Central Philosophy of Buddhism,	10
VI	Yoga Ethics : <i>himsā</i> , <i>ahimsā</i> , <i>yama</i> and <i>niyama</i>	Rajibul Islam	Lecture/ Chalk and Board	Haridas Bandyopadhyay : Bhāratīya Darśaner Marmakathā	12
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 3

CC-6

Course Name: Western Ethics

Course Code: BAHPHC302

Credit (No. of Hours per Week): 6

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Nature and Scope of Ethics; Nature of Morality	Rajibul Islam	Lecture/ Chalk and Board	W. Lillie : <i>An Introduction to Ethics</i> , * David S. Oderberg: <i>Applied Ethics: A Non-Consequential Approach</i>	8
II	Moral and Non-moral actions	Rajibul Islam	Lecture/ Chalk and Board	J. S. Mackenzie : <i>A Manual of Ethics</i> ,	8
III	Object of Moral Judgment : Motive and Intention	Rajibul Islam	Lecture/ Chalk and Board	* Patrick Hayden(ed.): <i>The Philosophy of Human Rights</i> , * B. Russell: <i>History of Western Philosophy</i>	8
IV	Postulates of Morality	Rajibul Islam	Lecture/ Chalk and Board	Somnath Chakraborty: <i>Kathāy Karne Ethics</i> ,	8
V	The Development of Morality	Rajibul Islam	Lecture/ Chalk and Board	*Tom Sorell & G. A. J. Rogers (ed.): <i>Analytic Philosophy and History of Philosophy</i> ,	10
VI	Normative Theories :Consequentialism(Teleology): Ethical Egoism; Utilitarianism: Act and Rule Utilitarianism; Act and Rule Deontology; Kant's Moral Theory; Divine Command Theory; Eudaemonism	Rajibul Islam	Lecture/ Chalk and Board	*Dikshit Gupta: <i>Nītiśāstra</i> * W.T. Stace: <i>A Critical History of Greek Philosophy</i>	12
VII	Theories of Punishment: Retributive, Deterrent And Reformatory Theory			* Peter Singer: <i>Practical Ethics</i> , * David S. Oderberg: <i>Applied Ethics: A Non-Consequential Approach</i>	8
VIII	Issues in Applied Ethics : Suicide; Mercy Killing and Euthanasia: Nature and Types; Famine and Affluence; Gender Equality; Basic Concerns of Environmental Ethics: Anthropocentrism, Non-anthropocentrism and Eco-feminism			* Tom L. Beauchamp: "The Nature of Applied Ethics", <i>A Companion to Applied Ethics</i> * W.T. Stace: <i>A Critical History of Greek Philosophy</i> ,	10
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 3

CC-7

Course Name: Indian Logic

Course Code: BAHPHIC303

Credit (No. of Hours per Week): 6

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Annambhatta : <i>Tarkasamgraha with Dīpikā</i> [From “ <i>sarvavyavahārahaturguṇo buddhirjñānam</i> ” to “ <i>smṛtirapi dvividhā yathārthāyathārthaśceti</i> ”]	Rajibul Islam	Lecture/ Chalk and Board	*Narayan Chandra Goswami : <i>Tarkasamgraha of Annambhatta</i> * Gopinath Bhattacharyya (tr. & elucidated) <i>Tarkasamgrahadīpikā on Tarkasamgraha,</i>	72
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 3

GE-3/CC-5

Course Name: Ethics

Course Code: BAHPHIGE301/ BAPPHIC301

Credit (No. of Hours per Week): 6

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Nature and Scope of Ethics; Nature of Morality	Rajibul Islam	Lecture/ Chalk and Board	W. Lillie : <i>An Introduction to Ethics</i> , * David S. Oderberg: <i>Applied Ethics: A Non-Consequential Approach</i>	8
II	Object of Moral Judgment: Motive and Intention	Rajibul Islam	Lecture/ Chalk and Board	J. S. Mackenzie : <i>A Manual of Ethics</i> ,	8
III	Postulates of Morality	Rajibul Islam	Lecture/ Chalk and Board	* Patrick Hayden(ed.): <i>The Philosophy of Human Rights</i> , * B. Russell: <i>History of Western Philosophy</i>	8
IV	Normative Theories: (a) Consequentialism (Teleology): Ethical Egoism & Utilitarianism, b) Kant's Moral Theory	Rajibul Islam	Lecture/ Chalk and Board	Somnath Chakraborty: <i>Kathāy Karme Ethics</i> ,	8
V	Theories of Punishment	Rajibul Islam	Lecture/ Chalk and Board	*Tom Sorell & G. A. J. Rogers (ed.): <i>Analytic Philosophy and History of Philosophy</i> ,	10
VI	Issues in Applied Ethics: Suicide, Euthanasia, Basic Concerns of Environmental Ethics	Rajibul Islam	Lecture/ Chalk and Board	*Dikshit Gupta: <i>Nītiśāstra</i> * W.T. Stace: <i>A Critical History of Greek Philosophy</i>	12
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 4

CC-8:

Course Name: Western Logic -I

Course Code: BAHPHIC401

Credit (No. of Hours per Week): 6*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Deduction: Propositional Logic , 1 st Order Predicate Logic up to singly general proposition.	R.Islam	Lecture/ Chalk and Board	M. Copi, C. Cohen, K. McMahon : <i>Introduction to Logic</i> (14 th Edition) [Chapters 5 to 10]	40
II	Induction	R.Islam	Lecture/ Chalk and Board	M. Copi, C. Cohen, K. McMahon : <i>Introduction to Logic</i> (14 th Edition) [Chapters 11 to 14].	32
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 4

CC-9:

Course Name: Psychology

Course Code: BAHPHIC402

Credit (No. of Hours per Week): 6*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	*Nature of Psychology *Psychological Research Methods	R.Islam	Lecture/ Chalk and Board	*G. F. Stout : <i>A Manual of Psychology</i>	10
II	*Biological Processes and Behavior: Nervous *System and Endocrine System *Perception : Colour and Depth , Pattern *Recognition, Perceptual Organization	R.Islam		* E. B. Titchener : <i>A Text- book of Psychology</i> * Baron & Misra : <i>Psychology</i> ,	20
III	*Attention *Learning: Classical Conditioning Theory, *Instrumental(Operant) Conditioning *Theory	R.Islam		* Sadhan Chakrabarti : <i>Monovidyar Prathamik Porichay</i> ,	15
IV	*Memory *Cognition and emotion : Appraisal Theory of Emotion, Cognition-emotion- action	R.Islam		Sadhan Chakrabarti : <i>Monovidyar Prathamik Porichay</i> ,	17
V	*Consciousness: Content and Levels of *Consciousness *Intelligence	R.Islam		* E. B. Titchener : <i>A Text- book of Psychology</i> * Baron & Misra : <i>Psychology</i> ,	10
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 4

SEC-2:

Course Name: Reasoning, Logical Rules & Fallacies (Western)

Course Code: BAHPHISE401/ BAPPHIC401

Credit (No. of Hours per Week): 4

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	*Argument: deductive and inductive *Deductive Argument: Immediate inference , Categorical Syllogism, truth functional argument and quantificational argument	R.Islam	Lecture/ Chalk and Board	*M. Copi, C. Cohen, P. Jetli & M. Prabhakar. *R.S. Agarwal: <i>A Modern Approach to Logical Reasoning</i>	8
II	*Opposition of propositions: Rules and Fallacies *Immediate inference: Rules and Fallacies	R.Islam	Lecture/ Chalk and Board	*M. Copi, C. Cohen, P. Jetli & M. Prabhakar. *R.S. Agarwal: <i>A Modern Approach to Logical Reasoning</i>	10
III	*Categorical Syllogisms : Rules and Fallacies *Truth functional Argument : Rules and Fallacies	R.Islam	Lecture/ Chalk and Board	*M. Copi, C. Cohen, P. Jetli & M. Prabhakar. *R.S. Agarwal: <i>A Modern Approach to Logical Reasoning</i>	8
IV	*Quantificational Argument : Rules and Fallacies *Fallacious Reasoning in Argumentation	R.Islam	Lecture/ Chalk and Board	*M. Copi, C. Cohen, P. Jetli & M. Prabhakar. *R.S. Agarwal: <i>A Modern Approach to Logical Reasoning</i>	12
V	*Inductive Argument : Rules and Fallacies	R.Islam	Lecture/ Chalk and Board	*M. Copi, C. Cohen, P. Jetli & M. Prabhakar. *R.S. Agarwal: <i>A Modern Approach to Logical Reasoning</i>	10
Total No. of Hours allotted to the Course					48

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 4

GE-4/ C-7

Course Name: **Logic**

Course Code: BAHPHIGE401/ BAPPHIC401/ BAPPHIGE602

Credit (No. of Hours per Week): 6

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Categorical propositions	R.Islam	Lecture/ Chalk and Board	*M. Copi, C. Cohen, P. Jetli & M. Prabhakar. *R.S. Agarwal: <i>A Modern Approach to Logical Reasoning</i>	15
II	Categorical Syllogism: Figure and Mood, Venn Diagram technique for Testing Validity	R.Islam	Lecture/ Chalk and Board	*M. Copi, C. Cohen, P. Jetli & M. Prabhakar. *R.S. Agarwal: <i>A Modern Approach to Logical Reasoning</i>	19
III	Symbolic Logic : Test of Truth-functional Arguments by Truth-Tables	R.Islam	Lecture/ Chalk and Board	*M. Copi, C. Cohen, P. Jetli & M. Prabhakar. *R.S. Agarwal: <i>A Modern Approach to Logical Reasoning</i>	15
IV	Analogical Reasoning	R.Islam	Lecture/ Chalk and Board	*M. Copi, C. Cohen, P. Jetli & M. Prabhakar. *R.S. Agarwal: <i>A Modern Approach to Logical Reasoning</i>	15
V	Science and Hypothesis	R.Islam	Lecture/ Chalk and Board	*M. Copi, C. Cohen, P. Jetli & M. Prabhakar. *R.S. Agarwal: <i>A Modern Approach to Logical Reasoning</i>	8
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 5

CC-11:

Course Name: Socio-Political Philosophy

Course Code: BAHPHIC501

Credit (No. of Hours per Week): 6*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Nature and Scope of Social Philosophy and Political Philosophy	A.A.Subhan	Lecture/ Chalk and Board	R. M. MacIver & C. H. Page: <i>Society</i> Benulal Dhar: <i>Manavadhikar ki ebong keno ?</i>	13
II	Basic Concepts: Society, Social Group, Community, Association, Institution, Customs, Folkways and Mores	A.A.Subhan	Lecture/ Chalk and Board	Morris Ginsberg: <i>Sociology</i> , D.E. Smith: <i>India as A Secular State</i>	18
III	Social Class and Caste: Class Attitude and Class Consciousness, Marxian Theory of Class, Caste System in India, B. R . Ambedkar's Criticism of Caste System, Dalit Movement	A.A.Subhan	Lecture/ Chalk and Board	Satyabrata Chakraborty(Ed.) : <i>Bharatbarsha : Rastrabhabana,</i>	18
IV	Socio-Political Ideas: Democracy – its Different Forms,Socialism – Utopian and Scientific, Secularism and its Nature, Secularism in India, Nation, Nationalism and Internationalism (Rabindranath Tagore), Humanism (Manabendranath Roy), Swaraj and Sarvodaya (M.K.Gandhi), Basic issues of Human rights	A.A.Subhan	Lecture/ Chalk and Board	D.E. Smith: <i>India as A Secular State,</i> Sobhanlal Duttaguta : <i>Marxiya Rastrachinta,</i>	23
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 5

CC-12:

Course Name: Western Logic - II

Course Code: BAHPHIC502

Credit (No. of Hours per Week): 6*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Chapter 9: Sets	R.Islam	Lecture/ Chalk and Board	P. Suppes: <i>Introduction to Logic</i>	36
II	Chapter 10: Relations	R.Islam	Lecture/ Chalk and Board	P. Suppes: <i>Introduction to Logic</i>	36
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 5

CC-13:

Course Name: Philosophy in the Twentieth Century: Indian

Course Code: BAHPHIC601

Credit (No. of Hours per Week): 6*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Rabindranath Tagore :(a) Nature of man : The Finite Aspect of Man, the Infinite Aspect of Man ,the Finite-Infinite Aspect of Man, (b) Nature of Religion, (c) Problem of Evil (f) Surplus in Man	A.A.Subhan	Lecture/ Chalk and Board	B. K. Lal : <i>Contemporary Indian Philosophy</i>	14
II	Swami Vivekananda : (a)Practical Vedānta, (b) Universal Religion, (c) Yoga	A.A.Subhan	Lecture/ Chalk and Board	Swami Vivekananda : <i>Complete Works of Swami Vivekananda</i> (Vol. II),	12
III	Sri Aurobindo :(a) Nature of Reality, (b) Human Evolution– its different stages, (c) Integral Yoga	A.A.Subhan	Lecture/ Chalk and Board	P.T.Raju : <i>Structural Depths of Indian Thought</i> ,	12
IV	S. Radhakrishnan :(a) Nature of Man, (b) Nature of Religious Experience, (c) Nature of Intuitive Apprehension	A.A.Subhan	Lecture/ Chalk and Board	P.T.Raju : <i>Structural Depths of Indian Thought</i> ,	12
V	Md. Iqbal : (a) Nature of the Self, (b) Nature of the World, (c) Nature of God Mahatma Gandhi : (a) God and Truth, (b) <i>Ahimsā</i> , (c) Trusteeship	A.A.Subhan	Lecture/ Chalk and Board	B. K. Lal : <i>Contemporary Indian Philosophy</i>	22
Total No. of Hours allotted to the Course					72

Durgapur Women's College

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Durgapur-713209

Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 5

CC-14:

Course Name: Philosophy in the Twentieth Century: Western

Course Code: BAHPHIC602

Credit (No. of Hours per Week): 6*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	G.E.Moore: (a)The Refutation of Idealism (b) The Defence of Common Sense	R.Islam	Lecture/ Chalk and Board	A.J.Ayer : <i>Language, Truth and Logic</i> , Dover Publications,	14
II	B. Russell: (a)Knowledge by Acquaintance and Knowledge by Description	R.Islam	Lecture/ Chalk and Board	A.J.Ayer : <i>The Central Questions of Philosophy</i> , Debika Saha : <i>Darshaner Samasyabali</i>	12
III	L. Wittgenstein: (a)Use Theory of Meaning	R.Islam	Lecture/ Chalk and Board	Mrinal Kanti Bhadra : <i>A Critical Study of Sartre's Ontology of Consciousness</i>	12
IV	Quine: (a) Critique of Empiricism	R.Islam	Lecture/ Chalk and Board	Mrinal Kanti Bhadra : <i>A Critical Survey of Phenomenology and Existentialism</i>	12
V	M. Heidegger: (a) Being in the World : Existenz, Facticity and Fallenness (b) Authenticity and Inauthenticity	R.Islam	Lecture/ Chalk and Board	Somnath Chakraborty : <i>Prasanga : Darsana Jignasa</i> ,	22
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 5

DSE-1:

Course Name: Debiprasad Chattopadhyay: *Lokayata Darsana*

Course Code: BAPPHIDSE501

Credit (No. of Hours per Week): 6*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Prathama <i>pariccheda</i>	A.A.Subhan	Lecture/ Chalk and Board	Debiprasad Chattopadhyay: <i>Lokāyata Darśana</i> ,	24
II	Dvītīya <i>pariccheda</i>	A.A.Subhan	Lecture/ Chalk and Board	Debiprasad Chattopadhyay: <i>Lokāyata Darśana</i> ,	24
III	Tṛtīya <i>pariccheda</i>	A.A.Subhan	Lecture/ Chalk and Board	Debiprasad Chattopadhyay: <i>Lokāyata Darśana</i> ,	24
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 5

SEC-3:

Course Name: **Methods of Philosophical Enquiry (Indian)**

Course Code: BAPPHISE501

Credit (No. of Hours per Week): 4*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Common and differentiating characteristics of Philosophy and <i>darśana</i>	A.A.Subhan	Lecture/ Chalk and Board	B.K. Matilal: <i>The Word And The World</i>	5
II	Nature of Inquiry in <i>darśana</i>	A.A.Subhan	Lecture/ Chalk and Board		5
III	Types of Inquiry in <i>darśana</i> : (1) Epistemic Inquiry in <i>darśana</i> (2) Metaphysical Inquiry in <i>darśana</i> (3) Axiological Inquiry in <i>darśana</i>	A.A.Subhan	Lecture/ Chalk and Board	*Bimal Krishna Matilal: <i>The Character of Logic in India</i> *PhanibhushanTarkabagish: <i>Nyāya Parichay</i>	19
IV	Methods of Philosophical Discourse (<i>kathā</i>) (a) <i>nigraha-sthāna</i> (b) <i>chala</i> (c) <i>jāti</i> (d) <i>vāda</i> (e) <i>jalpa</i> (f) <i>vitaṇḍā</i>	A.A.Subhan	Lecture/ Chalk and Board	C. D. Sharma : <i>Critical Survey of Indian Philosophy,</i>	19
Total No. of Hours allotted to the Course					48

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 6

CC-13:

Course Name: Philosophy in the Twentieth Century: Indian

Course Code: BAHPHIC601

Credit (No. of Hours per Week): 6

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Rabindranath Tagore (a) Nature of man : The Finite Aspect of Man, the Infinite Aspect of Man ,the Finite-Infinite Aspect of Man, (b) Nature of Religion, (c) Problem of Evil (f) Surplus in Man	A.A.Subhan	Lecture/ Chalk and Board	B. K. Lal : <i>Contemporary Indian Philosophy</i> Benay Gopal Ray : <i>The Philosophy of Rabindranath Tagore,</i>	12
II	Swami Vivekananda (a)Practical Vedānta, (b) Universal Religion, (c) Yoga	A.A.Subhan	Lecture/ Chalk and Board	Swami Vivekananda : <i>Complete Works of Swami Vivekananda</i>	12
III	Sri Aurobindo (a) Nature of Reality, (b) Human Evolution– its different stages, (c) Integral Yoga	A.A.Subhan	Lecture/ Chalk and Board	P.T.Raju : <i>Structural Depths of Indian Thought</i>	12
IV	S. Radhakrishnan (a) Nature of Man, (b) Nature of Religious Experience, (c) Nature of Intuitive Apprehension <i>vitaṇḍā</i>	A.A.Subhan	Lecture/ Chalk and Board	B. K. Lal : <i>Contemporary Indian Philosophy</i>	12
V	Md. Iqbal (a) Nature of the Self, (b) Nature of the World, (c) Nature of God	A.A.Subhan	Lecture/ Chalk and Board	B. K. Lal : <i>Contemporary Indian Philosophy</i>	12
V	Mahatma Gandhi (a) God and Truth, (b) <i>Ahimsā</i> , (c) Trusteeship	A.A.Subhan	Lecture/ Chalk and Board	B. K. Lal : <i>Contemporary Indian Philosophy</i>	12
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 6

CC-13:

Course Name: Philosophy in the Twentieth Century: Western

Course Code: BAHPHIC602

Credit (No. of Hours per Week): 6

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	G.E.Moore: (a)The Refutation of Idealism (b) The Defence of Common Sense	R.Islam	Lecture/ Chalk and Board	A.J.Ayer : <i>Language, Truth and Logic</i> , B. Russell: <i>The Problems of Philosophy</i> ,	12
II	B. Russell: Knowledge by Acquaintance and Knowledge by Description	R.Islam	Lecture/ Chalk and Board	Mrinal Kanti Bhadra : <i>A Critical Study of Sartre's Ontology of Consciousness</i>	12
III	L. Wittgenstein: Use Theory of Meaning	R.Islam	Lecture/ Chalk and Board	Passmore : <i>Recent Philosophers A Hundred Year of Philosophy</i>	12
IV	Quine: Critique of Empiricism	R.Islam	Lecture/ Chalk and Board	W.V.O. Quine: <i>Two Dogmas of Empiricism</i> , Somnath Chakraborty : <i>Prasanga : Darsana Jignasa</i> ,	12
V	M. Heidegger: (a)Being in the World : Existenz, Facticity and Fallenness (b)Authenticity and Inauthenticity	R.Islam	Lecture/ Chalk and Board	M.K.Bhadra : <i>Astibad O Manabatabad</i> ,	12
V	Mahatma Gandhi (a) God and Truth, (b) <i>Ahimsā</i> , (c) Trusteeship	R.Islam	Lecture/ Chalk and Board	B. K. Lal : <i>Contemporary Indian Philosophy</i>	12
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 6

DSE:

Course Name: **David Hume: An Enquiry Concerning Human Understanding**

Course Code: BAPHIDSE601

Credit (No. of Hours per Week): 6

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Section-I	R.Islam	Lecture/ Chalk and Board	David Hume: <i>An Enquiry Concerning Human Understanding</i>	4
II	Section-II	R.Islam	Lecture/ Chalk and Board	David Hume: <i>An Enquiry Concerning Human Understanding</i>	8
III	Section-III	R.Islam	Lecture/ Chalk and Board	David Hume: <i>An Enquiry Concerning Human Understanding</i>	8
IV	Section-IV	R.Islam	Lecture/ Chalk and Board	David Hume: <i>An Enquiry Concerning Human Understanding</i>	10
V	Section-V	R.Islam	Lecture/ Chalk and Board	David Hume: <i>An Enquiry Concerning Human Understanding</i>	10
VI	Section-VI	R.Islam	Lecture/ Chalk and Board	David Hume: <i>An Enquiry Concerning Human Understanding</i>	10
VII	Section-VII	R.Islam	Lecture/ Chalk and Board	David Hume: <i>An Enquiry Concerning Human Understanding</i>	10
VIII	Section-VIII	R.Islam	Lecture/ Chalk and Board	David Hume: <i>An Enquiry Concerning Human Understanding</i>	8
IX	Section-XII	R.Islam	Lecture/ Chalk and Board	David Hume: <i>An Enquiry Concerning Human Understanding</i>	4
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 6

DSE:

Course Name: Rabindranath Tagore: *Sādhana*

Course Code: BAPHIDSE603

Credit (No. of Hours per Week): 6

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Soul consciousness	A.A.Subhan	Lecture/ Chalk and Board	Rabindranath Tagore: <i>Sādhana</i> -	18
II	The problem of Evil	A.A.Subhan	Lecture/ Chalk and Board	Rabindranath Tagore: <i>Sādhana</i> -	18
III	The problem of self,	A.A.Subhan	Lecture/ Chalk and Board	Rabindranath Tagore: <i>Sādhana</i> -	18
IV	Realisation in Action	A.A.Subhan	Lecture/ Chalk and Board	Rabindranath Tagore: <i>Sādhana</i> -	18
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 6

DSE:

Course Name: **Shibaditya Misra: Saptapadārthī**

Course Code: BAPPHIDSE601

Credit (No. of Hours per Week): 6

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	<i>maṅgalācaraṇa</i>	R.Islam	Lecture/ Chalk and Board	Rabindranath Tagore: <i>Sādhānā-</i>	20
II	<i>uddesā prakaraṇa,</i>	R.Islam	Lecture/ Chalk and Board	Rabindranath Tagore: <i>Sādhānā-</i>	26
III	<i>lakṣaṇa prakaraṇa</i>	R.Islam	Lecture/ Chalk and Board	Rabindranath Tagore: <i>Sādhānā-</i>	26
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-24)

Department: Philosophy

Semester: 6

SEC-4:

Course Name: Methods of Philosophical Enquiry (Western)

Course Code: BAPPHIDSE601

Credit (No. of Hours per Week): 4

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Reasoned Speculation	R.Islam	Lecture/ Chalk and Board	Paul F. Kisak: <i>Philosophical Methodology : the Methods of Philosophical Inquiry</i>	9
II	Conceptual Analysis	R.Islam	Lecture/ Chalk and Board	Bertrand Russell: <i>The Problems of Philosophy</i>	10
III	Linguistic Analysis	R.Islam	Lecture/ Chalk and Board	H. Cappelen: <i>The Oxford Handbook of Philosophical Methodology</i>	9
IV	Logical Argumentation	R.Islam	Lecture/ Chalk and Board	G. E. Moore: <i>Some Main Problems of Philosophy,</i>	10
V	Critical Reflection	R.Islam	Lecture/ Chalk and Board	Paul F. Kisak: <i>Philosophical Methodology : the Methods of Philosophical Inquiry</i>	10
Total No. of Hours allotted to the Course					48

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Lesson Plan (Academic Year: 2023-2024)

Department: Computer Science

Semester: 1

Major/Minor/Hons/Prog: Major

Course Name: Introduction to Programming using C

Course Code: BSCCOSMJ101

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
Theory					
I	Introduction to computers, Evolution, Generation of Computers, Computers Hierarchy, Different components of computer (CPU, ALU, different types of memory etc.),	Baishali Dey	Lecture with Chalk and Board	Computer Fundamentals, Sinha and Sinha	03

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	Number System – Binary, Hexa, Octal, BCD System, Introduction to operating environment			Digital Electronics, Morris Mano	
II	Introduction to Programming, Program Concept, Characteristics of Programming, Stages in Program Development, Algorithms, Notations, Flowcharts, Types of Programming Methodologies, Introduction to C Programming - Basic Program Structure in C, Variables and Assignments, Input and Output, Selection and Repetition Statements.	Baishali Dey	Lecture with ICT Tools	Programming in ANSI C , E. Balaguruswami The Complete Reference Herbert Schildt	04
III	Top-Down Design, Predefined Functions, Programmer-defined Function, Local Variable, Recursion - Developing Recursive Definition of Simple Problems and their implementation.	Baishali Dey	Lecture with Chalk and Board	Programming in ANSI C , E. Balaguruswami The Complete Reference Herbert Schildt	04
IV	Introduction to Arrays, Declaration and Referring Arrays, Arrays	Baishali Dey	Lecture with Chalk and	Programming in ANSI C ,	06

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	in Memory, Initializing Arrays. Arrays in Functions, Multi-Dimensional Arrays, Searching in Array.		Board	E. Balaguruswami The Complete Reference Herbert Schildt	
V	Pointers - Simple use of Pointers (Declaring and Dereferencing Pointers to simple variables), Pointers to Pointers, Call-By-Value and Call-By-Reference Parameters.	Baishali Dey	Lecture with Chalk and Board	Programming in ANSI C , E. Balaguruswami The Complete Reference Herbert Schildt	06
VI	Structures - Member Accessing, Pointers to Structures, Structures and Functions, Arrays of Structures, Unions.	Baishali Dey	Lecture with Chalk and Board	Programming in ANSI C , E. Balaguruswami The Complete Reference Herbert Schildt	05
VII	Strings - Declaration and Initialization, Reading and Writing Strings, Arrays of	Baishali Dey	Lecture with Chalk and Board	Programming in ANSI C , E.	05

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	Strings, String and Function, Strings and Structure, Standard String Library Functions.			Balaguruswami The Complete Reference Herbert Schildt	
VIII	File Handling – File opening modes, use of files for data input and output. merging and copy files.	Baishali Dey	Lecture with Chalk and Board	Programming in ANSI C , E. Balaguruswami The Complete Reference Herbert Schildt	03
Practical					
UNIT I.	Given the problem statement, students are required to formulate problem, develop flowchart/algorithm, write code, execute and test it. Students should be given assignments on following: a) To learn elementary techniques involving arithmetic operators and mathematical expressions, appropriate use of selection (if, switch, conditional	Baishali Dey	Lecture with ICT Tools		12

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	<p>operators) and control structures.</p> <p>b) Learn how to use functions and parameter passing in functions, writing recursive programs.</p> <p>Students should be given assignments on following:</p> <p>a) Write Programs to learn the use of strings and string handling operations.</p> <p>b) Problems which can effectively demonstrate use of Arrays. Structures and Union.</p> <p>c) Write programs using pointers and functions.</p> <p>d) Write programs to use files for data input and output.</p>				
UNIT II.	<p>Students should be given assignments on following:</p> <p>a) Write Programs to learn the use of strings and string handling operations.</p> <p>b) Problems which can effectively demonstrate use of Arrays. Structures and Union.</p>	Baishali Dey	Lecture with ICT Tools		12

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	c) Write programs using pointers and functions.				
	d) Write programs to use files for data input and output				
Total No. of Hours allotted to the Course					60

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Lesson Plan (Academic Year: 2023-2024)

Department: Computer Science

Semester: 1

Major/Minor/Hons/Prog: Minor

Course Name: Introduction to Programming using C

Course Code: BSCCOSMN101

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
Theory					
I	Introduction to computers, Evolution, Generation of Computers, Computers Hierarchy, Different components of computer (CPU, ALU, different types of memory etc.),	Dolan Dutta	Lecture with Chalk and Board	Computer Fundamentals, Sinha and Sinha	03

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	Number System – Binary, Hexa, Octal, BCD System, Introduction to operating environment			Digital Electronics, Morris Mano	
II	Introduction to Programming, Program Concept, Characteristics of Programming, Stages in Program Development, Algorithms, Notations, Flowcharts, Types of Programming Methodologies, Introduction to C Programming - Basic Program Structure in C, Variables and Assignments, Input and Output, Selection and Repetition Statements.	Dolan Dutta	Lecture with ICT Tools	Programming in ANSI C , E. Balaguruswami The Complete Reference Herbert Schildt	04
III	Top-Down Design, Predefined Functions, Programmer-defined Function, Local Variable, Recursion - Developing Recursive Definition of Simple Problems and their implementation.	Dolan Dutta	Lecture with Chalk and Board	Programming in ANSI C , E. Balaguruswami The Complete Reference Herbert Schildt	04
IV	Introduction to Arrays, Declaration and Referring Arrays, Arrays	Dolan Dutta	Lecture with Chalk and	Programming in ANSI C ,	06

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	in Memory, Initializing Arrays. Arrays in Functions, Multi-Dimensional Arrays, Searching in Array.		Board	E. Balaguruswami The Complete Reference Herbert Schildt	
V	Pointers - Simple use of Pointers (Declaring and Dereferencing Pointers to simple variables), Pointers to Pointers, Call-By-Value and Call-By-Reference Parameters.	Dolan Dutta	Lecture with Chalk and Board	Programming in ANSI C , E. Balaguruswami The Complete Reference Herbert Schildt	06
VI	Structures - Member Accessing, Pointers to Structures, Structures and Functions, Arrays of Structures, Unions.	Dolan Dutta	Lecture with Chalk and Board	Programming in ANSI C , E. Balaguruswami The Complete Reference Herbert Schildt	05
VII	Strings - Declaration and Initialization, Reading and Writing Strings, Arrays of	Dolan Dutta	Lecture with Chalk and Board	Programming in ANSI C , E.	05

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	Strings, String and Function, Strings and Structure, Standard String Library Functions.			Balaguruswami The Complete Reference Herbert Schildt	
VIII	File Handling – File opening modes, use of files for data input and output. merging and copy files.	Dolan Dutta	Lecture with Chalk and Board	Programming in ANSI C , E. Balaguruswami The Complete Reference Herbert Schildt	03
Practical					
UNIT I.	Given the problem statement, students are required to formulate problem, develop flowchart/algorithm, write code, execute and test it. Students should be given assignments on following: a) To learn elementary techniques involving arithmetic operators and mathematical expressions, appropriate use of selection (if, switch, conditional	Dolan Dutta	Lecture with ICT Tools		12

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	<p>operators) and control structures.</p> <p>b) Learn how to use functions and parameter passing in functions, writing recursive programs.</p> <p>Students should be given assignments on following:</p> <p>a) Write Programs to learn the use of strings and string handling operations.</p> <p>b) Problems which can effectively demonstrate use of Arrays. Structures and Union.</p> <p>c) Write programs using pointers and functions.</p> <p>d) Write programs to use files for data input and output.</p>				
UNIT II.	<p>Students should be given assignments on following:</p> <p>a) Write Programs to learn the use of strings and string handling operations.</p> <p>b) Problems which can effectively demonstrate use of Arrays. Structures and Union.</p>	Dolan Dutta	Lecture with ICT Tools		12

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	c) Write programs using pointers and functions.				
	d) Write programs to use files for data input and output				
Total No. of Hours allotted to the Course					60

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Lesson Plan (Academic Year: 2023-2024)

Department: Computer Science

Semester: 4

Major/Minor/Hons/Prog: Hons

Course Name: Object Oriented Programming

Course Code: BSCHCOSC403

Credit (No. of Hours per Week): 6

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
Theory					
I	Introduction to Object Oriented Programming and its Basic Features, Basic Components of C++, Characteristics of Object-Oriented Language, Structure of a C++	Baishali Dey	Lecture with Chalk and Board	Object Oriented Programming with C++ , E.	06

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	<p>Program, Flow Control Statements in C++, Functions - Scope of Variables, Inline Functions,</p> <p>Recursive Functions, Pointers to Functions, C++ Pointers, Arrays, Dynamic Memory</p> <p>Allocation and De-Allocation</p>			<p>Balaguruswami</p> <p>The Complete Reference C++ Herbert Schildt</p>	
II	<p>Differences Between Object Oriented and Procedure Oriented Programming,</p> <p>Abstraction, Overview of Object-Oriented Programming Principles, Encapsulation, C++</p> <p>Classes, Objects, User Defined Types, Constructors and Destructors, this Pointer, Friend</p> <p>Functions, Data Abstraction, Operator Overloading, Type Conversion</p>	Baishali Dey	Lecture with ICT Tools	<p>Object Oriented Programming with C++ , E. Balaguruswami</p> <p>The Complete Reference C++ Herbert Schildt</p>	08
III	<p>Class Inheritance, Base and Derived Classes, Virtual Base Class, Virtual</p> <p>Functions, Polymorphism, Static and Dynamic Bindings, Base and Derived Class Virtual</p> <p>Functions, Dynamic Binding through Virtual Functions, Pure Virtual Functions, Abstract</p>	Baishali Dey	Lecture with Chalk and Board	<p>Object Oriented Programming with C++ , E. Balaguruswami</p> <p>The Complete Reference C++</p>	08

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	Classes, Virtual Destructors			Herbert Schildt	
IV	Stream Classes Hierarchy, Stream I/O, File Streams, Overloading the Extraction and Insertion Operators, Error Handling during File Operations, Formatted I/O.	Baishali Dey	Lecture with Chalk and Board	Object Oriented Programming with C++ , E. Balaguruswami The Complete Reference C++ Herbert Schildt	05
V	Exception Handling- Benefits of Exception Handling, Throwing an Exception, the Try Block, Catching an Exception, Exception Objects, Exception Specifications, Rethrowing an Exception, Uncaught Exceptions.	Baishali Dey	Lecture with Chalk and Board	Object Oriented Programming with C++ , E. Balaguruswami The Complete Reference C++ Herbert Schildt	05
VI	Templates - Class Templates and Function Templates, simple generic classes and generic function, simple example programs. Introduction to	Baishali Dey	Lecture with Chalk and Board	Object Oriented Programming	05

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	Standard Template Library (STL), Components of STL, STL-List, Vector, Array. Practical			with C++ , E. Balaguruswami The Complete Reference C++ Herbert Schildt	
Practical					
UNIT I.	Students are required to understand the object-oriented concepts using C++. They are required to practice the concepts learnt in the theory.	Baishali Dey	Lecture with ICT Tools		05
UNIT II.	1. Number of vowels and number of characters in a string. 2. Write a function called zeros malloc() that is passed with two introduce arguments by reference and set the smaller of the number to zero. Write a main() program to access this function. 3. Demonstration of Class, Constructors, destructors, input and output functions, Objects 4. Demonstration of array of object.	Baishali Dey	Lecture with ICT Tools		28

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5. Demonstration of friend functions.				
6. Demonstration of operator overloading.				
7. Demonstration of inheritance.				
8. Using this pointer to return a value (return by reference).				
9. Demonstration of virtual function.				
10. Demonstration of static function.				
11. Accessing a particular record in a student's file.				
12. Demonstration of exception handling.				
13. Demonstration of class template and function template				
14. Demonstration of Standard Template Library (STL).				
Total No. of Hours allotted to the Course				72

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Lesson Plan (Academic Year: 2023-2024)

Department: Computer Science

Semester: 5

Major/Minor/Hons/Prog: Hons

Course Name: Artificial Intelligence

Course Code: BSCHCOSC502

Credit (No. of Hours per Week): 6

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
Theory					
I	Introduction to Artificial Intelligence: Definition of AI;	Baishali	Lecture with	Elaine Rich,	06

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	<p>Turing Test; Brief History</p> <p>of AI. Problem Solving and Search: Problem Formulation; Search Space; States vs. Nodes;</p> <p>Tree Search: Breadth-First, Uniform Cost, Depth-First, Depth-Limited, Iterative Deepening;</p> <p>Graph Search.</p>	Dey	ICT Tools	Kevin Knight, Shivashankar B Nair, Artificial Intelligence, Dan W. Patterson, Introduction to Artificial Intelligence and Expert Systems	
II	<p>Informed Search: Greedy Search; A* Search; Heuristic Function; Admissibility and</p> <p>Consistency; Deriving Heuristics via Problem Relaxation. Local Search: Hill-Climbing;</p> <p>Simulated Annealing; Genetic Algorithms; Local Search in Continuous Spaces</p>	Baishali Dey	Lecture with Chalk and Board	Elaine Rich, Kevin Knight, Shivashankar B Nair, Artificial Intelligence,	08

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				Dan W. Patterson, Introduction to Artificial Intelligence and Expert Systems	
III	Playing Games: Game Tree; Utility Function; Optimal Strategies; Minimax Algorithm; Alpha-Beta Pruning; Games with an Element of Chance. Beyond Classical Search: Searching with Nondeterministic Actions; Searching with Partial Observations; Online Search Agents; Dealing with Unknown Environments.	Baishali Dey	Lecture with Chalk and Board	Dan W. Patterson, Introduction to Artificial Intelligence and Expert Systems	08
IV	Knowledge Representation and Reasoning: Ontologies, Foundations of Knowledge Representation and Reasoning, Representing and Reasoning about Objects,	Baishali Dey	Lecture with Chalk and Board	Dan W. Patterson, Introduction to Artificial	05

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	Relations, Events, Actions, Time, and Space; Predicate Logic, Situation Calculus, Description Logics, Reasoning with Defaults, Reasoning about Knowledge, Sample Applications.			Intelligence and Expert Systems I. Bratko, PROLOG programming for artificial intelligence.	
V	Representing and Reasoning with Uncertain Knowledge: Probability, Connection to Logic, Independence, Bayes Rule, Bayesian Networks, Probabilistic Inference, and Sample Applications.	Baishali Dey	Lecture with Chalk and Board	Elaine Rich, Kevin Knight, Shivashankar B Nair, Artificial Intelligence, Dan W. Patterson, Introduction to Artificial	05

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				Intelligence and Expert Systems	
VI	Planning: The STRIPS Language; Forward Planning; Backward Planning; Planning Heuristics; Partial-Order Planning; Planning using Propositional Logic; Planning vs. Scheduling.	Baishali Dey	Lecture with Chalk and Board	Elaine Rich, Kevin Knight, Shivashankar B Nair, Artificial Intelligence, Dan W. Patterson, Introduction to Artificial Intelligence and Expert Systems	05
VII	Constraint Satisfaction Problems (CSPs): Basic Definitions; Finite vs. Infinite vs. Continuous Domains; Constraint Graphs; Relationship		Lecture with Chalk and Board	Elaine Rich, Kevin Knight,	05

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	<p>With Propositional Satisfiability, Conjunctive Queries, Linear Integer Programming, and Diophantine Equations; NP49 Completeness of CSP; Extension to Quantified Constraint Satisfaction (QCSP). Constraint Satisfaction as a Search Problem; Backtracking Search; Variable and Value Ordering Heuristic; Degree Heuristic; Least-Constraining Value Heuristic; Forward Checking; Constraint Propagation; Dependency-Directed Backtracking;</p>			<p>Shivashankar B Nair, Artificial Intelligence, Dan W. Patterson, Introduction to Artificial Intelligence and Expert Systems</p>	
Practical					
UNIT I.	<p>LISP: 1. Introduction The need for symbolic computation. Why LISP is a good language for symbolic</p>	Baishali Dey	Lecture with ICT Tools	I. Bratko, PROLOG programm g for artificial	12

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<p>computation.</p> <p>2. LISP Introduction</p> <p>Atoms, lists, S-expressions, functions, lambdas, predicates, conditionals, recursion, iteration, printing, reading, properties, a-lists.</p> <p>3. Search: The General Problem Solver</p> <p>Means-ends analysis, defining operators, blocks-world planning, Sussman Anomaly, interacting goals.</p> <p>4. Pattern Matching: ELIZA</p> <p>Pattern matching, rule-based translation, a simplistic natural-language dialog system.</p> <p>5. Search Tools</p> <p>A general search program. Heuristic search, best-first search, beam-search, hillclimbing.</p>			<p>intelligence.</p> <p>L. Sterling, and E. Shapiro, The art of Prolog. MIT Press.</p>	
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	<p>6. Advanced LISP</p> <p>Macros, lexical scoping, lexical closures, special variables, dynamic scoping, multiple values. Consing, destructive functions, and garbage collection. Interning symbols.</p> <p>Caching. Delaying computation. Avoiding unnecessary consing.</p>				
UNIT II.	<p>Logic Programming in Prolog:</p> <p>1. Introduction to Prolog. The structure of a Prolog program and how to use the Prolog interpreter. Unification. Some simple programs.</p> <p>2. Arithmetic and lists. Prolog's support for evaluating arithmetic expressions and lists.</p> <p>3. Backtracking, cut, and negation. The cut operator for controlling backtracking. Negation as failure and its uses.</p> <p>4. Search and cut. Prolog's search method for solving</p>	Baishali Dey	Lecture with ICT Tools	Paul Graham, ANSI Common Lisp,	15

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problems. Graph searching exploiting Prolog's built-in search mechanisms. 5. Difference structures. Difference lists: introduction and application to example programs.				
Total No. of Hours allotted to the Course				72

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Lesson Plan (Academic Year: 2023-2024)

Department: Computer Science

Semester: 6

Major/Minor/Hons/Prog: Hons

Course Name: Machine Learning

Course Code: BSCHCOSC602

Credit (No. of Hours per Week): 6

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
Theory					
I	Introduction: Concept of Machine Learning, Applications of Machine Learning, Key elements of Machine Learning, Supervised Learning, Classification, Unsupervised Learning,	Baishali Dey	Lecture with Chalk and Board	blob:https://github.com/b7f57d38-b71c-4690-8f84-	06

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	Clustering, Statistical Learning: Bayesian Method, The Naive Bayes Classifier.			e774513040c4	
II	Software's for Machine Learning and Linear Algebra Overview: Plotting of Data, Vectorization, Matrices and Vectors: Addition, Multiplication, Transpose and Inverse using Available Tool such as MATLAB	Baishali Dey	Lecture with ICT Tools	https://in.mathworks.com/campaigns/offers/machine-learning-with-matlab.html	08
III	Linear Regression: Prediction using Linear Regression, Gradient Descent, Linear Regression with one Variable, Linear Regression with Multiple Variables, Polynomial Regression, Feature Scaling/Selection.	Baishali Dey	Lecture with Chalk and Board	blob:https://github.com/ae29e3ac-4deb-4f48-88a3-953ee881cba5	08
IV	Logistic Regression: Classification using Logistic	Baishali Dey	Lecture with	blob:https://	05

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	Regression, Logistic Regression vs. Linear Regression, Logistic Regression with one Variable and with Multiple Variables.		Chalk and Board	github.com/ b8bc138b- 645f-4879- beff- 55270c7eea23	
V	Regularization: Regularization and its Utility: The problem of Overfitting, Application of Regularization in Linear and Logistic Regression, Regularization and Bias/Variance	Baishali Dey	Lecture with Chalk and Board	blob:https:// github.com/ 92625899- 3aa7-4445- 912f- 68afb0dc9b78	05
VI	Neural Networks: Introduction, Model Representation, Gradient Descent vs. Perceptron Training, Stochastic Gradient Descent, Single Layer Perceptrons, Multilayer Perceptrons, Multiclass Representation, Back Propagation Algorithm, Radial Basis Function Networks.	Baishali Dey	Lecture with Chalk and Board	blob:https:// github.com/ 9ea366af-66ab- 4e77-868d- cac9bcea5c22	05
Practical					

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UNIT I.	UNIT I. Implementation of different clustering algorithms - K-Means, Fuzzy c-means etc.	Baishali Dey	Lecture with ICT Tools	blob:https://github.com/3679f2eb-0bbb-4fa4-b82d-c5733cc51c18	05
UNIT II.	Implementation of The Naive Bayes Classifier.	Baishali Dey	Lecture with ICT Tools	blob:https://github.com/fa95d9dc-aa00-4990-b9fc-a1d5a5970085	04
UNIT III	Implementation of Linear Regression with one variable and multiple variables.			blob:https://github.com/fa95d9dc-aa00-4990-b9fc-a1d5a5970085	04
UNIT IV	Implementation of Logistic Regression with one variable and multiple variables.			blob:https://github.com/feb0bcfc-020c-45e2-b89f-	04

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				64ef930ca4b3	
UNIT V	Implementation of Gradient Descent learning.			blob:https://github.com/feb0bcfc-020c-45e2-b89f-64ef930ca4b3	04
UNIT VI	Implementation of Single Layer Perceptions.			blob:https://github.com/92625899-3aa7-4445-912f-68afb0dc9b78	04
UNIT VII	Implementation of Multilayer Perceptions Neural Networks with Back Propagation Algorithm.			blob:https://github.com/92625899-3aa7-4445-912f-68afb0dc9b78	05
UNIT VIII	Implementation of Radial Basis Function Neural Networks.			blob:https://github.com/92625899-3aa7-4445-	05

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				912f-68afb0dc9b78	
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-2024)

Department: Computer Science

Semester: 5

Major/Minor/Hons/Prog: Hons

Course Name: Computer Ethics

Course Code: BSCHCOSDSE503

Credit (No. of Hours per Week): 6

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	The Need for Computer Ethics Training and Historical Milestones.	Baishali Dey	Lecture with ICT Tools	http://www.Greeks	06

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				forgreeks.org	
II	<p>UNIT II. Defining the Field of Computer Ethics, Computer ethics codes, Sample Topics in Computer Ethics</p> <p>i. Computer crime and computer security</p> <p>ii. Software theft and intellectual property rights</p> <p>iii. Computer hacking and the creation of viruses</p> <p>iv. Computer and information system failure</p> <p>v. Invasion of privacy. Privacy in the Workplace and on the Internet</p> <p>vi. Social implications of artificial intelligence and expert systems</p> <p>vii. The information technology salesman issues.</p>	Baishali Dey	Lecture with ICT Tools	http://www.google.com	10
III	Transparency and Virtual Ethics, Free Speech, Democracy, Information Access.	Baishali Dey	Lecture with Chalk and Board	J. Deborah, H. Nissenbaun, Computing, Ethics &	08

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				Social Values, Englewood Cliffs	
IV	Developing the Ethical Analysis Skills and Professional Values, Privacy, Accountability, Government Surveillance.	Baishali Dey	Lecture with Chalk and Board	http://www.Greeksforgreeks.org	08
V	Boundaries of Trust, Trust Management, Wikipedia, Virtual Trust, Plagiarism in Online Environment, Intellectual Property, Net neutrality. References/ Suggested	Baishali Dey	Lecture with Chalk and Board	http://www.en.wikipedia.org	08
Total No. of Hours allotted to the Course					40

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Lesson Plan (Academic Year: 2023-2024)

Department: Computer Science

Semester: 6

Major/Minor/Hons/Prog: Hons

Course Name: Theory of Computation

Course Code: BSCHCSDSE602

Credit (No. of Hours per Week): 6

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
Theory					
I	Automata: Introduction to Formal Proof, Additional Forms of Proof, Inductive Proofs, Finite Automata (FA), Deterministic Finite Automata (DFA), Non-Deterministic	Baishali Dey	Lecture with Chalk and Board	Theory of computation K.L.P Mishra, Chandrashekha	12

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	Finite Automata (NFA), Finite Automata with Epsilon transitions.			ran Automata J. Ullaman	
II	Regular Expressions and Languages: Regular Expression, FA and Regular Expressions, Proving Languages not to be Regular, Closure Properties of Regular Languages, Equivalence and Minimization of Automata.	Baishali Dey	Lecture with Chalk and Board	Theory of computation K.L.P Mishra, Chandrashekharan Automata J. Ullaman	10
III	Context Free Grammars and Languages: Context Free Grammar (CFG), Parse Trees , Ambiguity in Grammars and Languages, Definition of The Pushdown Automata, Languages of a Pushdown Automata, Equivalence of Pushdown Automata and CFG Deterministic Pushdown Automata	Baishali Dey	Lecture with Chalk and Board	Theory of computation K.L.P Mishra, Chandrashekharan Automata J. Ullaman	12
IV	Properties of Context Free Languages: Normal Forms for	Baishali Dey	Lecture with	Theory of	10

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	CFG, Pumping Lemma for CFL, Closure Properties of CFL, Turing Machines, Programming Techniques for TM, Variations of TM, Non Universal TM, Universal TM.		Chalk and Board	computation K.L.P Mishra, Chandrashekha ran Automata J. Ullaman	
V	Undecidability: A Language that is not Recursively Enumerable (RE), an Undecidable Problem that is RE, Undecidable Problems about Turing Machine, Post's Correspondence Problem, The Classes P and NP	Baishali Dey	Lecture with Chalk and Board	Theory of computation K.L.P Mishra, Chandrashekha ran Automata J. Ullaman	10
Total No. of Hours allotted to the Course					60

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Lesson Plan (Academic Year: 2023-2024)

Department: COMPUTER SCIENCE

Semester: 5

Major/Minor/Hons/Prog: HONS

Course Name: Internet Technologies

Course Code: BSCHCOSC501

Credit (No. of Hours per Week): 6(L-T-P: 4 - 0 - 4)

Total Teaching Days: 90

Total Teaching Weeks: 12

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
THEORY					
I	Introduction: Overview, Network of Networks, Intranet, Extranet and Internet. World Wide Web, Domain and Sub domain, Address Resolution, DNS, Telnet, FTP, HTTP. Review of TCP/IP: Features, Segment, Three-Way Handshaking, Flow Control, Error Control, Congestion control.	Arjita Banerjee	Lecture chalk and board	• P.J. Deitel & H.M. Deitel, Internet and World Wide Web How to program, Pearson.	7
II	IP Datagram, IPv4 and IPv6. IP Subnetting and addressing: Classful and Classless Addressing, Subnetting. NAT, IP	Arjita Banerjee	Lecture chalk and		9

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	masquerading, IP tables. Internet Routing Protocol: Routing -Intra and Inter Domain Routing, Unicast and Multicast Routing, Broadcast.Electronic Mail: POP3, SMTP.		board	<ul style="list-style-type: none"> • Elements Of Computer Science (For H.S. Science Students) Volume-1 & 2 	
III	HTML: Introduction, Editors, Elements, Attributes, Heading, Paragraph.Formatting, Link, Head, Table, List, Block, Layout, CSS. Form, Iframe, Colors, Colorname, Colorvalue. Image Maps: map, area, attributes of image area. Extensible Markup Language(XML): Introduction, Tree, Syntax, Elements, Attributes, Validation, Viewing. XHTML in brief. CGI Scripts: Introduction, Environment Variable, GET and POST Methods.	Arjita Banerjee	Lecture with ICT Tools	<ul style="list-style-type: none"> • Rahul Banerjee, Internetworking Technologies, An Engineering Perspective, PHI. 	10
IV	PERL: Introduction, Variable, Condition, Loop, Array, Implementing data structure, Hash, String, Regular Expression, File handling, I/O handling. JavaScript: Basics, Statements, comments, variable, comparison, condition, switch, loop, break. Object - string,array, Boolean, reg-ex. Function, Errors, Validation. Cookies: Definition of cookies, Create and Store a cookie with example. Java Applets: Container Class, Components, Applet Life Cycle, Update method; Parameter passing applet, Applications.	Arjita Banerjee	Lecture with ICT Tools	<ul style="list-style-type: none"> • HTML & CSS: The Complete Reference, Fifth Edition Thomas A. Powell 	12
V	Client-Server programming in Java: Java Socket, Java RMI. Threats: Malicious code-viruses, Trojan horses, worms; eavesdropping, spoofing, modification, denial of service attacks. Network security techniques: Password and Authentication; VPN, IP Security, security in electronic transaction, Secure Socket Layer (SSL), Secure Shell (SSH). Firewall: Introduction, Packet filtering, Stateful, Application layer, Proxy.	Arjita Banerjee	Lecture with ICT Tools	<ul style="list-style-type: none"> • https://www.geeksforgeeks.org/ • Perl Programming,TutorialsPoint • http://www.w3school.com 	5
VI	Internet Telephony: Introduction, VoIP. Multimedia Applications: Multimedia over IP: RSVP, RTP, RTCP and RTSP. Streaming media,	Arjita Banerjee	Lecture chalk and		5

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	Codec and Plugins, IPTV.mywbut.com Search Engine and Web Crawler: Definition, Meta data, Web Crawler, Indexing, Page rank, overview of SEO.		board		
<u>PRACTICAL</u>					
I	HTML: Introduction to HTML and HTML5, TML Tags, Formatting and Fonts, Commenting Code, Anchors, Backgrounds, Images, Hyperlinks, Lists, Tables, Frames, HTML Forms.	Arjita Banerjee	Tutorial with ICT Tools	<ol style="list-style-type: none"> 1. HTML & CSS: The Complete Reference, Fifth Edition Thomas A. Powell 2. https://www.geeksforgeeks.org/ 3. Perl Programming ,TutorialsPoint 4. http://www.w3school.com 5. http://www.tutorialspoint.com 	8
II	CSS: The need for CSS, Introduction to CSS, Basic syntax and structure, Inline Styles, Embedding Style Sheets, Linking External Style, Backgrounds, Manipulating Text, Margins and Padding, Positioning using CSS.	Arjita Banerjee	Tutorial with digital equipments		8
III	JavaScript: Syntax, Variables, Values, Data Types, Data Types, Expressions and Operators, Control structures, Error handling, Throwing errors, Numbers, Strings, Arrays.	Arjita Banerjee	Tutorial with ICT Tools		6
IV	PHP: Introduction to PHP, Server side scripting, Role of web server software, PHP comments, variables, echo and print, PHP operators, data types , Branching statements, Loops, Arrays, PHP functions, PHP form, Passing information between pages, \$_GET, \$_POST, \$_REQUEST., String functions, include and require, session and cookie management, Error handling in PHP, Object Oriented Programming using PHP.	Arjita Banerjee	Tutorial with ICT Tools		14
V	PHP with MYSQL: Introduction to MySQL, datatypes, SQL commands-CREATE, UPDATE, INSERT, DELETE, SELECT, PHP functions for MySQL connectivity and operation- mysql_connect, mysql_select_db, mysql_query, Updation and deletion of data using PHP, Displaying data from MySQL in webpage.	Arjita Banerjee	Tutorial with ICT Tools		12
Total No. of Hours allotted to the Course					96(48+48)

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Lesson Plan (Academic Year: 2023-2024)

Department: COMPUTER SCIENCE

Semester: 1

Major/Minor/Hons/Prog: MAJOR(SEC)

Course Name: OFFICE AUTOMATION SOFTWARE LAB

Course Code: BSCCOSSE101

Credit (No. of Hours per Week): 3(L-T-P: 0 – 0 – 6)

Total Teaching Days: 90

Total Teaching Weeks: 12

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Windows Basics: Introduction of windows OS, navigating the Windows 10 user interface, Creating accounts in Windows, Opening apps and programs, working with files, using the Start button and Start	Arjita Banerjee	Tutorial with ICT Tools	1.Introduction to Computers with MS-Office, Leon, TMH.	8

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	menu, Accessing and using the Action Center, Working with apps and programs on the taskbar, Customizing settings in Windows 10, including backgrounds, screensavers, and more, Using the Settings app and the Control Panel.			2.https://www.uc.edu/content/dam/refresh/content-ed-62/olli/fall-23-class-handouts/refined%20word.pdf	
II	MS Word and Google Docs: Overview, creating, saving, opening, importing, exporting, and inserting files, formatting pages, paragraphs and sections, indents and outdents, creating lists and numbering. Headings, styles, fonts and font size, editing, positioning, viewing texts, searching and replacing text, inserting page breaks, page numbers, bookmarks, symbols, and dates. Using tabs and tables, header, footer, and printing.	Arjita Banerjee	Tutorial with ICT Tools	1.Introduction to Computers with MS-Office, Leon, TMH. 2. https://www.tutorialspoint.com/word/index.htm	15
III	MS Excel and Google Sheets: Worksheet overview, entering information, worksheet creation, opening and saving workbook, formatting numbers and texts, protecting cells, producing charts, and printing	Arjita Banerjee	Tutorial with ICT Tools	1.Learn Microsoft Office 2019, Linda Foulkes, HP.	15

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	operations. Application of Excel for obtaining statistical parameters, Mean, Median, Mode, average, co-relation, Regression, Data capturing using Google Forms.			<p>2. https://www.geeksforgeeks.org/excel-tutorial/</p> <p>3. https://blog.hubspot.com/marketing/correlation-excel</p> <p>4. https://www.datacamp.com/tutorial/linear-regression-in-excel</p>	
IV	MS PowerPoint or Google Slides: Slide creation with PowerPoint, Presenting shows for corporate and commercial using PowerPoint.	Arjita Banerjee	Tutorial with ICT Tools	<p>1. Learn Microsoft Office 2019, Linda Foulkes, HP</p> <p>2. https://www.tutorialspoint.com/powerpoint/index.htm</p>	9
V	Graphics and Image Editing Software: Overview of graphic design and image editing applications (e.g.,	Dolan Dutta	Tutorial with ICT	1. https://zapier.com/blog/graph	12

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	Adobe Photoshop, GIMP), Understanding basic image editing techniques (e.g., cropping, resizing, retouching), Creating and manipulating graphics for various purposes.1		Tools	ic-design-tools-for-social-media-images/ 2. https://www.canva.com/learn/how-to-canva-beginners-guide/	
VI	Web Browsing and Internet Applications: Navigating web browsers and utilizing essential features, Understanding internet protocols and security considerations, Exploring common internet applications (e.g., email clients, cloud storage, online collaboration tools).	Dolan Dutta	Tutorial with ICT Tools	1. https://www.geeksforgeeks.org/web-browser/	6
VII	File Compression and Archiving Software: Introduction to file compression formats (e.g., ZIP, RAR), Compressing and decompressing files and folders, Managing archived files and folders.	Dolan Dutta	Tutorial with ICT Tools	1. https://www.toppers.com/guides/computer-science/computer-fundamentals/u	7

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				tility- software/compr ession-tools/ 2. file- compression.pdf	
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-2024)

Department: COMPUTER SCIENCE

Semester: 2

Major/Minor/Hons/Prog: MAJOR(SEC)

Course Name: Basics of Python

Course Code: BSCCOSSE201

Credit (No. of Hours per Week): 3(L-T-P: 0 – 0 – 6)

Total Teaching Days: 90

Total Teaching Weeks: 12

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Introduction to Python, Python, Features of Python, Execution of a Python, Program, Writing Our First Python Program, Data types in Python. Python Interpreter and Interactive Mode; Values and Types: int, float, boolean, string, and list; Variables, Expressions, Statements, Tuple Assignment, Precedence of Operators, Comments; Modules and Functions, Function Definition and use, Flow of Execution, Parameters and Arguments	Arjita Banerjee	Lecture with ICT Tools	1. Kenneth A. Lamber	18

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II	Operators in Python, Input and Output, Control Statements. Boolean Values and operators, Conditional (if), Alternative (if-else), Chained Conditional (if-elif-else); Iteration: state, while, for, break, continue, pass; Fruitful Functions: Return Values, Parameters, Local and Global Scope, Function Composition, Recursion	Arjita Banerjee	Tutorial with ICT Tools	<p>t, Fundamentals of Python: First Programs, Course Technology Inc.</p> <p>2. Mark Lutz, Learning Python, O'Reilly Publication</p> <p>3. https://www.w</p>	12
III	Arrays in Python, Strings and Characters. Strings: String Slices, Immutability, String Functions and Methods, String Module; Lists as Arrays. Illustrative Programs: Square Root, gcd, Exponentiation, Sum an Array of Numbers, Linear Search, Binary Search.	Baishali Dey	Tutorial with ICT Tools		12
IV	Functions, Lists and Tuples. List Operations, List Slices, List Methods, List Loop, Mutability, Aliasing, Cloning Lists, List Parameters; Tuples: Tuple Assignment, Tuple as Return Value; Dictionaries: Operations and Methods; Advanced List Processing - List Comprehension; Illustrative Programs: Selection Sort, Insertion Sort, Merge sort, Histogram.	Baishali Dey	Tutorial with ICT Tools		16
V	Files and Exception: Text Files, Reading and Writing Files, Format Operator; Command Line Arguments, Errors and Exceptions, Handling Exceptions, Modules, Packages; Illustrative Programs: Word Count, Copy File.	Baishali Dey	Tutorial with ICT Tools		14

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				3schools.com/python/python_intro.asp	
				4. https://www.geeksforgeeks.org/python-operators/	
				5. https://www.javatpoint.com/python-arrays	

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				6. https:// www.pr ogramiz .com/p ython- progra mming/ list-vs- tuples	
				7. https:// docs.py thon.or g/3/tut orial/er rors.ht ml	
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-2024)

Department: COMPUTER SCIENCE

Semester: 3

Major/Minor/Hons/Prog: MAJOR

Course Name: Digital Logic and Computer Organization

Course Code: BSCCOSMJ302

Credit (No. of Hours per Week): 5 (L-T-P: 3 – 0 – 4)

Total Teaching Days: 90

Total Teaching Weeks: 12

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
<u>THEORY</u>					
I	Basic Structure of Computers: Basic units of Computer System; CPU – Control Unit, ALU; System Buses, Memory module Overview, Measuring unit of memory – Bit, Byte, KB, MB, GB, TB; Input Devices – Keyboard, Mouse, Scanner, Output Devices – Monitor, Printer, Basic Operational Concepts, Performance – Processor Clock, Clock Rate, Performance Measurement.	Arjita Banerjee	Lecture chalk and board	<ul style="list-style-type: none">Computer Fundamentals(sinha Sinha)https://www.jbiet.edu.in/coursefiles/cse/HO/cse2/DLD1.p	4
II	Number System: Positional number systems; Representation of signed numbers signed magnitude, one's complement, 2's complement representation techniques, Merits of 2's complement representation scheme; Various binary codes- BCD, excess -3, Gray code; Binary arithmetic- addition, subtraction, multiplication and division of unsigned binary numbers.	Arjita Banerjee	Lecture chalk and board	<ul style="list-style-type: none">Elements Of Computer Science (For H.S. Science Students) Volume-1 & 2	4

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III	Logic gates: Basic logic operations- logical sum(or), logical product (AND), complementation (not), Anti coincidence (EX-OR)and coincidence (EX-NOR) operations: Truth tables of Basic gates; Boolean Variables and Expressions; Demorgan's theorem; Universal gates- NAND and NOR; Boolean expressions Simplification- Algebraic technique, Karnaugh map technique, 3 variable and 4 variable Karnaugh map.	Arjita Banerjee	Lecture chalk and board	<ul style="list-style-type: none"> • M. Morris Mano, Digital Logic, Pearson. • Modern Digital Electronics: R.P. Jain, Tata McGraw Hill. • https://www.geeksforgeeks.org/computer-memory/ 	5
IV	Combinational Circuits: Half adder, full adder, binary magnitude comparator, adder/subtractor circuits, multiplexer and demultiplexer circuits, BCD adder/subtractor; ALU; parity generators, code converters, priority encoders, PLAs	Arjita Banerjee	Lecture chalk and board		5
V	Sequential circuits: flip- flops, - RS, clocked RS, D, JK, T flip-flops,: Race condition, Master Slave JK: Registers, Universal Shift Registers; Counters- Binary, decade; modulo-r divider; Practical IC's; Sequential Machine design.	Arjita Banerjee	Lecture with trainer kit and ic		5
VI	Machine Instructions and Programs: Memory Location and Addresses, Memory Operations, Instructions and Instruction Sequencing, Addressing Modes, Assembly Language, Basic Input and Output Operations, Stacks and Queues, Subroutines, Additional Instructions, Encoding of Machine Instructions.	Arjita Banerjee	Lecture chalk and board		5
VII	Input/Output Organization: Accessing I/O Devices, Interrupts – Interrupt Hardware, Enabling and Disabling Interrupts, Handling Multiple Devices, Controlling Device Requests, Exceptions, Direct Memory Access, Buses, Interface Circuits, Standard I/O Interfaces – PCI Bus, SCSI Bus, USB.	Arjita Banerjee	Lecture chalk and board		4
VIII	Memory System: Basic Concepts, Semiconductor RAM Memories, Read Only Memories, Speed, Size, and Cost, Cache Memories – Mapping Functions, Replacement Algorithms, Performance Considerations, Virtual Memories, Secondary	Arjita Banerjee	Lecture chalk and board		3

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	Storage.				
IX	Basic Processing Unit: Some Fundamental Concepts, Execution of a Complete Instruction, Multiple Bus Organization, Hard-wired Control, Micro-programmed Control.	Arjita Banerjee	Lecture chalk and board		2
<u>PRACTICAL</u>					
I	Study on the characteristic of AND, OR, NAND, NOR, EX-OR, EX-NOR gates.	Arjita Banerjee	Tutorial with digital equipments	1. M. Morris Mano, Digital Logic, Pearson. 2. Modern Digital Electronics: R.P. Jain, Tata McGraw Hill.	12
II	Design of different combinational circuit such as half adder/subtractor, full adder/subtractor, decoder/encoder, priority encoder, multiplexer, demultiplexer, magnitude comparator etc.	Arjita Banerjee	Tutorial with digital equipments		16
III	Study on the characteristic of different flip-flops-JK, RS, T, D etc.	Arjita Banerjee	Tutorial with digital equipments		10
IV	Design and implementation of different sequential circuit such as shift register, counter-decimal, ripple etc.	Arjita Banerjee	Tutorial with digital equipments		10
Total No. of Hours allotted to the Course					84 (36+48)

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Lesson Plan (Academic Year: 2023-2024)

Department: COMPUTER SCIENCE

Semester: 3

Major/Minor/Hons/Prog: MINOR

Course Name: Digital Logic and Computer Organization

Course Code: BSCCOSMJ302

Credit (No. of Hours per Week): 5 (L-T-P: 3 – 0 – 4)

Total Teaching Days: 90

Total Teaching Weeks: 12

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
<u>THEORY</u>					
I	Basic Structure of Computers: Basic units of Computer System; CPU – Control Unit, ALU; System Buses, Memory module Overview, Measuring unit of memory – Bit, Byte, KB, MB, GB, TB; Input Devices – Keyboard, Mouse, Scanner, Output Devices – Monitor, Printer, Basic Operational Concepts, Performance – Processor Clock, Clock Rate, Performance Measurement.	Baishali Dey	Lecture chalk and board	<ul style="list-style-type: none">Computer Fundamentals(sinha Sinha)https://www.jbiet.edu.in/coursefiles/cse/HO/cse2/DLD1.pdf	4
II	Number System: Positional number systems; Representation of signed numberssigned magnitude, one's complement, 2's	Baishali Dey	Lecture chalk	<ul style="list-style-type: none">Elements Of	4

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	complement representation techniques, Merits of 2's complement representation scheme; Various binary codes- BCD, excess -3, Gray code; Binary arithmetic- addition, subtraction, multiplication and division of unsigned binary numbers.		and board	Computer Science (For H.S. Science Students) Volume-1 & 2	
III	Logic gates: Basic logic operations- logical sum(or), logical product (AND), complementation (not), Anti coincidence (EX-OR)and coincidence (EX-NOR) operations: Truth tables of Basic gates; Boolean Variables and Expressions; Demorgan's theorem; Universal gates- NAND and NOR; Boolean expressions Simplification- Algebraic technique, Karnaugh map technique, 3 variable and 4 variable Karnaugh map.	Baishali Dey	Lecture chalk and board	<ul style="list-style-type: none"> • M. Morris Mano, Digital Logic, Pearson. • Modern Digital Electronics: R.P. Jain, Tata McGraw Hill. • https://www.geeksforgeeks.org/computer-memory/ 	5
IV	Combinational Circuits: Half adder, full adder, binary magnitude comparator, adder/subtractor circuits, multiplexer and demultiplexer circuits, BCD adder/subtractor; ALU; parity generators, code converters, priority encoders, PLAs	Baishali Dey	Lecture chalk and board		5
V	Sequential circuits: flip- flops, - RS, clocked RS, D, JK, T flip-flops,: Race condition, Master Slave JK: Registers, Universal Shift Registers; Counters- Binary, decade; modulo-r divider; Practical IC's; Sequential Machine design.	Baishali Dey	Lecture with trainer kit and ic		5
VI	Machine Instructions and Programs: Memory Location and Addresses, Memory Operations, Instructions and Instruction Sequencing, Addressing Modes, Assembly Language, Basic Input and Output Operations, Stacks and Queues, Subroutines,	Baishali Dey	Lecture chalk and board		5

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	Additional Instructions, Encoding of Machine Instructions.				
VII	Input/Output Organization: Accessing I/O Devices, Interrupts – Interrupt Hardware, Enabling and Disabling Interrupts, Handling Multiple Devices, Controlling Device Requests, Exceptions, Direct Memory Access, Buses, Interface Circuits, Standard I/O Interfaces – PCI Bus, SCSI Bus, USB.	Baishali Dey	Lecture chalk and board		4
VIII	Memory System: Basic Concepts, Semiconductor RAM Memories, Read Only Memories, Speed, Size, and Cost, Cache Memories – Mapping Functions, Replacement Algorithms, Performance Considerations, Virtual Memories, Secondary Storage.	Baishali Dey	Lecture chalk and board		3
IX	Basic Processing Unit: Some Fundamental Concepts, Execution of a Complete Instruction, Multiple Bus Organization, Hard-wired Control, Micro-programmed Control.	Baishali Dey	Lecture chalk and board		2
<u>PRACTICAL</u>					
I	Study on the characteristic of AND, OR, NAND, NOR, EX-OR, EX-NOR gates.	Baishali Dey	Tutorial with digital equipments	1. M. Morris Mano, Digital Logic, Pearson.	12
II	Design of different combinational circuit such as half adder/subtractor, full adder/subtractor, decoder/encoder,	Baishali Dey	Tutorial with digital	2. Modern Digital Electronics: R.P. Jain,	16

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	priority encoder, multiplexer, demultiplexer, magnitude comparator etc.		equipments	Tata McGraw Hill.	
III	Study on the characteristic of different flip-flops-JK, RS, T, D etc.	Baishali Dey	Tutorial with digital equipments		10
IV	Design and implementation of different sequential circuit such as shift register, counter-decimal, ripple etc.	Baishali Dey	Tutorial with digital equipments		10
Total No. of Hours allotted to the Course					84 (36+48)

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Lesson Plan (Academic Year: 2023-2024)

Department: COMPUTER SCIENCE

Semester: 4

Major/Minor/Hons/Prog: Hons

Course Name: Software Engineering

Course Code: BSCHCOSC401

Credit (No. of Hours per Week): 6 (L-T-P: 5 - 1 - 0)

Total Teaching Days: 90

Total Teaching Weeks: 12

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Software Development Approaches: Introduction; Evolving Role of Software; Software Characteristics; Software Applications. Software Design Processes: Introduction; What is Meant by Software Engineering? Definitions of Software Engineering; The Serial or Linear Sequential Development Model; Iterative Development Model; The incremental Development Model	Arjita Banerjee	Lecture chalk and board	<ul style="list-style-type: none">Rajib Mall, Fundamentals of Software Engineering, PHI Learning Pvt. Ltd.R. G. Pressman, Software	10

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				Engineering, TMH	
II	Software Design Principles: Introduction, System Models: Data-flow Models, Semantic Data Models, Object Models, Inheritance Models, Object Aggregation, Service Usage Models, Data Dictionaries; Software Design: The Design Process, Design Methods, Design description, Design Strategies, Design Quality; Architectural Design: System Structuring, The Repository Model, The Client–Server Model, The Abstract Machine Model, Control Models, Modular Decomposition, Domain-Specific Architectures.	Arjita Banerjee	Lecture chalk and board	• Pfleeger, Shari Lawrence, Software Engineering Theory and Practice, Second edition. Prentice- Hall 2001.	12
III	Object Oriented Design: Introduction; Object Oriented Design: Objects, Object Classes & Inheritance, Inheritance, Object Identification, An Object -Oriented Design Example, Object Aggregation; Service Usage; Object Interface Design: Design Evolution, Function Oriented Design, Data–Flow Design; Structural Decomposition: Detailed Design.	Arjita Banerjee	Lecture chalk and board		12
IV	An Assessment of Process Life-Cycle Models: Introduction; Overview of the Assessment of Process; The Dimension of Time; The Need for a Business Model in Software Engineering; Classic Invalid Assumptions: First Assumption: Internal or External Drivers, Second Assumption: Software or Business Processes, Third Assumption: Processes or Projects, Fourth Assumption:	Arjita Banerjee	Lecture chalk and board		12

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	Process Centered or Architecture Centered; Implications of the New Business Model; Role of the Problem - Solving Process in this Approach: Data, Problem Definition, Tools and Capabilities; Redefining the Software Engineering Process: Round-Trip Problem-Solving Approach, Activities, Goals, Interdisciplinary Resources, Time.				
V	Software Reliability: Introduction; Software Reliability Metrics; Programming for Reliability: Fault Avoidance, Fault Tolerance, Software Reuse.	Arjita Banerjee	Lecture chalk and board		10
VI	Software Testing Techniques: Introduction; Software Testing Fundamental; Testing Principles; White Box Testing; Control Structure Testing; Black Box Testing; Boundary Value Analysis; Testing GUIs; Testing Documentation and Help Facilities; Software Testing Strategies: Introduction; Organizing for Software Testing; Software Testing Strategy, Unit Testing: Unit Test Considerations, Top-Down Integration, Bottom-Up Integration.	Arjita Banerjee	Lecture chalk and board		16
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-2024)

Department: COMPUTER SCIENCE

Semester: 6

Major/Minor/Hons/Prog: Hons(DSE)

Course Name: Data Mining

Course Code: BSCHCOSDSE603

Credit (No. of Hours per Week): 6 (L-T-P: 5 - 1 - 0)

Total Teaching Days: 90

Total Teaching Weeks: 12

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	Introduction to data mining (DM): Motivation for Data Mining - Data Mining Definition and Functionalities – Classification of DM Systems - DM task primitives - Integration of a Data Mining system with a Database - Issues in DM – KDD Process	Arjita Banerjee	Lecture chalk and board	<ul style="list-style-type: none">Arun K Pujari, Data Mining Techniques, Universities Press.J. Han, M. Kamber, Data Mining Concepts and	10
II	Data Pre-processing: Data summarization, data cleaning, data integration and transformation, data reduction, data discretization and concept hierarchy generation, feature	Arjita Banerjee	Lecture chalk and board		10

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	extraction , feature transformation, feature selection, introduction to Dimensionality Reduction, CUR decomposition.			Techniques, Morgan Kaufmann. <ul style="list-style-type: none"> Ning Tan, Vipin Kumar, Michael Steinbach Pang, Introduction to Data Mining, Pearson Education. 	
III	Concept Description, Mining Frequent Patterns, Associations and Correlations: What is concept description? - Data Generalization and summarization-based characterization - Attribute relevance - class comparisons, Basic concept, efficient and scalable frequent item- set mining methods, mining various kind of association rules, from association mining to correlation analysis, Advanced Association Rule Techniques, Measuring the Quality of Rules.	Arjita Banerjee	Lecture with ICT Tools	<ul style="list-style-type: none"> https://www.geeksforgeeks.org/kdd-process-in-data-mining/ https://en.wikipedia.org/wiki/Data_preprocessing 	13
IV	Classification and Prediction: Classification vs. prediction, Issues regarding classification and prediction, Statistical-Based Algorithms, Distance-Based Algorithms, Decision Tree Based Algorithms, Neural Network-Based Algorithms, Rule-Based Algorithms, Combining Techniques, accuracy and error measures, evaluation of the accuracy of a classifier or predictor. Neural Network Prediction methods: Linear and nonlinear regression, Logistic Regression Introduction of tools such as DB Miner / WEKA / DTREG DM Tools.	Arjita Banerjee	Lecture with ICT Tools	<ul style="list-style-type: none"> https://www.javatpoint.com/classification-and-predication-in-data-mining https://www.geeksforgeeks.org/difference-between-classification-and- 	14
V	Cluster Analysis: Clustering: Problem Definition, Clustering Overview, Evaluation of Clustering Algorithms, Partitioning Clustering -K-Means Algorithm, KMeans Additional issues, PAM Algorithm; Hierarchical Clustering – Agglomerative Methods and	Arjita Banerjee	Lecture with ICT Tools	<ul style="list-style-type: none"> https://www.geeksforgeeks.org/difference-between-classification-and- 	13

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	divisive methods, Basic Agglomerative Hierarchical Clustering, Strengths and Weakness; Outlier Detection, Clustering high dimensional data, clustering Graph and Network data.			prediction-methods-in-data-mining/	
VI	Web mining and other data mining: Web Mining: Introduction to Web Mining, Web content mining, Web usage mining, Web Structure mining, Web log structure and issues regarding web logs, Spatial Data Mining, Temporal Mining, And Multimedia Mining. Applications of Distributed and parallel Data Mining.	Arjita Banerjee	Lecture chalk and board	<ul style="list-style-type: none"> • https://www.geeksforgeeks.org/data-mining-cluster-analysis/ • ROC • BIG DATA 	6
VII	ROC Analysis, Data Mining Trends, Big Data, Data Analytics.	Arjita Banerjee			6
Total No. of Hours allotted to the Course					72

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Lesson Plan (Academic Year: 2023-2024)

Department: COMPUTER SCIENCE

Semester: 4

Major/Minor/Hons/Prog: Hons

Course Name: Web Programming

Course Code: BSCHCOSSE402

Credit (No. of Hours per Week): 4(L-T-P: 0 - 0 – 8)

Total Teaching Days: 90

Total Teaching Weeks: 12

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
I	(Introduction to World Wide Web) - Internet Standards, Introduction to WWW and WWW Architecture, Internet Protocols, Overview of HTTP, HTTP request – response, Generations of dynamic web pages.	Sudip Kumar Palit	Lecture with ICT Tools	1. John Brock, Arun Gupta, Geertjan Wielenga, Java EE and HTML5 Enterprise Application Development (Oracle Press)	12
II	(User Interface Design) Introduction	Sudip	Tutorial		17

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	to HTML and HTML5, TML Tags, Formatting and Fonts, Commenting Code, Anchors, Backgrounds, Images, Hyperlinks, Lists, Tables, Frames, HTML Forms. The need for CSS, Introduction to CSS, Basic syntax and structure, Inline Styles, Embedding Style Sheets, Linking External Style, Backgrounds, Manipulating Text, Margins and Padding, Positioning using CSS.	Kumar Palit	with ICT Tools	<p>2. A. Majumdar and P. Bhattacharyya, Database Management Systems, McGraw Hill Education.</p> <p>3. https://www.geeksforgeeks.org/world-wide-web-www/</p> <p>4. https://www.w3schools.com/java/java_intro.asp</p>	
III	(Java Programming) Java Script, Introduction, Core features, Data types and Variables, Operators, Expressions, Functions, Objects, Array, Date and Math related Objects. JAVA Networking classes, TCP/IP Protocol Suite, File Transfer Protocol (FTP), Java Environment, Setup for Web Applications, JavaBean, Application Builder Tool, Bean Developer Kit (BDK), The Java Beans API, Introduction to EJB	Sudip Kumar Palit	Tutorial with ICT Tools	<p>5. https://www.w3schools.com/js/</p> <p>6. https://www.javatpoint.com/example-to-connect-to-the-mysql-database</p> <p>7. https://www.utc.fr/~dnace/dokuwiki/_media/fr/servletesjsp_translated.pdf</p> <p>8. https://en.wikipedia.org/wiki/.NET_Framework</p>	16

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IV	. (Database) Database basics, SQL, MySQL, PostgreSQL, JDBC API, Driver Types, Two-tier and Three-tier Models, Connection Overview, Transactions, Driver Manager Overview, Statement Overview, Result Set Overview, Types of Result Sets, Concurrency Types, Prepared Statement Overview	Sudip Kumar Palit	Tutorial with ICT Tools		18
V	(Java Applet and JSP) Java Web Programs and Applets, Web Application, Servlet, Servlet Life Cycle, Servlet Programming, Introduction to JSP, Life Cycle of a JSP Page, Translation and Compilation, Creating Static Content, Response and Page Encoding, Creating Dynamic Content, Using Objects within JSP Pages, JSP Programming	Sudip Kumar Palit	Tutorial with ICT Tools		16
VI	(Dot Net Framework) Introduction to Dot Net, Dot Net framework and its architecture, CLR, Assembly,	Sudip Kumar	Tutorial with ICT		17

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	Components of Assembly, DLL hell and Assembly Versioning, Overview to C#, Introduction to ASP.net, Asp.net Programming.	Palit	Tools		
Total No. of Hours allotted to the Course					96

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Lesson Plan (Academic Year: 2023-24)

Department: Computer Science

Semester: 6th

Major/Minor/Hons/Prog: Hons

Course Name: Computer Graphics

Course Code: BSCHCOSC601

Credit (No. of Hours per Week): 6 (L-T-P:4-0-4)

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
Theory					
Unit I	Application Areas of Computer Graphics, Overview of Graphics Systems and Devices. Points and Lines, Line Drawing Algorithms, Mid-Point Circle and Ellipse Algorithms. Filled Area Primitives, Polygon Filling Algorithms. Curve Generation: Bezier and B-Spline Curves.	Dolan Dutta	Lecture with Chalk and Board	1. Donald Hearn and M. Pauline Baker, Computer Graphics with Open GL, Prentice Hall	12
Unit II	2-D Geometrical Transforms: Translation, Scaling, Rotation, Reflection and Shear Transformations Composite Transforms, Transformations between Coordinate Systems. 2-D Viewing: The Viewing Pipeline, Viewing Coordinate Reference Frame, Window to Viewport Coordinate Transformation, Viewing Functions.	Dolan Dutta	Lecture with Chalk and Board	2. Computer Graphics by Mandeep Kaur	8
Unit III	Line Clipping Algorithms- Cohen-Sutherland and Cyrus Beck Line Clipping	Dolan Dutta	Lecture with Chalk and		7

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	Algorithms, Sutherland–Hodgeman Polygon Clipping Algorithm. 3-D Object Representation: Polygon Surfaces, Quadric Surfaces, Spline Representation		Board	3. https://www.geeksforgeeks.org/introduction-to-computer-graphics/	
Unit IV	3-D Geometric Transformations: Translation, Rotation, Scaling, Reflection and Shear Transformations, Composite Transformations, 3-D Viewing: Viewing Pipeline, Viewing Coordinates, View Volume, General Projection Transforms and Clipping.	Dolan Dutta	Lecture with Chalk and Board		6
Unit V	Visible Surface Detection Methods: Classification, Back -Face Detection, Depth Buffer, Scanline, Depth Sorting, BSP-Tree Methods, Area Sub-Division and Octree Methods Illumination Models and Surface Rendering Methods: Basic Illumination Models, Polygon Rendering Methods Computer Animation: Design of Animation Sequence, General Computer Animation Functions Key Frame Animation, Animation Sequence, Motion Control Methods, Morphing, Warping (Only Mesh Warping)	Dolan Dutta	Lecture with Chalk and Board	4. https://www.javatpoint.com/computer-graphics-tutorial	8
Unit VI	Virtual Reality : Basic Concepts, Classical Components of VR System, Types of VR Systems, Three Dimensional Position Trackers, Navigation and Manipulation Interfaces, Gesture Interfaces. Input Devices, Graphical Rendering Pipeline, Haptic Rendering Pipeline, Open GL Rendering Pipeline. Applications of Virtual Reality.	Dolan Dutta	Lecture with Chalk and Board		7

Practical

Unit I	Line Drawing Using DDA and Bresenham.	Dolan Dutta	Tutorial with Lab Practice		4
Unit II	Circle Drawing Using Midpoint Algorithm.	Dolan Dutta	Tutorial with	1. https://www.ahirlabs.com/practicals/	4

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			Lab Practice	computer-graphics-practical/	
Unit III	Ellipse Drawing Using Midpoint Algorithm.	Dolan Dutta	Tutorial with Lab Practice		4
Unit IV	Curve Generation: Bezier and B-Spline Curves.	Dolan Dutta	Tutorial with Lab Practice		6
Unit V	Line Clipping Algorithms- Cohen-Sutherland and Cyrus Beck.	Dolan Dutta	Tutorial with Lab Practice		6
Unit VI	Sutherland–Hodgeman Polygon Clipping Algorithm.	Dolan Dutta	Tutorial with Lab Practice		6
Unit VII	Polygon Filling Algorithms.	Dolan Dutta	Tutorial with Lab Practice		6
Unit VIII	Performing the basic 2D transformations such as translation, Scaling, Rotation, shearing and reflection for a given 2D object.	Dolan Dutta	Tutorial with Lab Practice		10
Total No. of Hours allotted to the Course					94(48+46)

* **Guideline to calculate (kindly omit this section afterwards):**

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2023-24)

Department: Computer Science

Semester: 2nd

Major/Minor/Hons/Prog: Minor

Course Name: Data Structures and Algorithms

Course Code: BSCCOSMN201

Credit (No. of Hours per Week): 5(L-T-P:3-0-4)

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
Theory					
Unit I	Basic concepts- Data, data structures, ADT, Algorithm Specification-Introduction, Recursive algorithms, Data Abstraction, Performance analysis, Linear and Non Linear data structures.	Baishali Dey	Lecture with Chalk and Board	1.Data Structures- Seymour Lipschutz	4
Unit II	Singly Linked Lists-Operations, Concatenating, circularly linked Lists-Operations for Circularly linked lists, Doubly Linked Lists- Operations. Polynomial and sparse matrix representations using linked list.	Baishali Dey	Lecture with Chalk and Board	2. Data Structures using C- Reema Thareja	4
Unit III	Stack- Definition and Operations, Array and Linked Implementations, Applications - Valid Expression Checking (Parenthesis matching), Reversal of string, Infix to Postfix Conversion, Postfix Expression Evaluation, Recursion Implementation.	Baishali Dey	Lecture with Chalk and Board	3. Expert Data Structures with C- R.B.Patel	6
Unit IV	Queue - Definition and Operations, Array and Linked Implementations, Applications, Circular Queues - Insertion and Deletion Operations, De-queue	Baishali Dey	Lecture with Chalk and		4

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	(Double Ended Queue) - Introduction.		Board		
Unit V	Searching methods- Linear and Binary.	Baishali Dey	Lecture with Chalk and Board	4. https://www.tutorialspoint.com/data_structures_algorithms/index.htm	3
Unit VI	Sorting Methods – Bubble, Insertion, Selection, Shell, Using Divide-Conquer Approach (Quick and Merge sort), Comparison of Sorting Methods.	Baishali Dey	Lecture with Chalk and Board		5
Unit VII	Trees, Representation of Trees, Binary tree, Properties of Binary Trees, Binary Tree Representations- Array and Linked Representations, Binary Tree Traversals, Threaded Binary Trees, Binary Search tree - Creation, Insertion, Deletion and Search, AVL tree- Definition, Examples, Insertion and Rotations, B tree, B+ tree, Heap- Definition, Min heap, Max heap, Insertion and Deletion, Priority Queue using Heap.	Baishali Dey	Lecture with Chalk and Board	5. https://www.geeksforgeeks.org/data-structures/ 6. https://www.w3schools.com/dsa/dsa_intro.php	5
Unit VIII	Graphs, Graph ADT, Graph representation, Graph Traversals and Searching.	Baishali Dey			5

Practical

Unit I	<p>1. Write program that uses functions to perform the following:</p> <p>a) Creation of list of elements where the size of the list, elements to be inserted and deleted is dynamically given as input.</p> <p>b) Implement the operations, insertion, deletion at a given position in the list and search for an element in the list.</p> <p>c) To display the elements in forward / reverse order</p>	Baishali Dey	Tutorial with ICT Tools	<p>1. Data Structures using C- Reema Thareja</p> <p>2. Expert Data Structures with C- R.B.Patel</p> <p>3.</p>	10
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Unit II	2. Write recursive programs for Factorial, Fibonacci numbers, Tower of Hanoi etc.	Baishali Dey	Tutorial with ICT Tools	https://www.w3schools.com/dsa/dsa_intro.php	6
Unit III	3. Write a program to implement stack (using array and linked list). Write a program that demonstrates the application of stack operations (Eg: infix expression to postfix conversion, postfix evaluation).	Baishali Dey	Tutorial with ICT Tools	4. https://www.sanfoundry.com/c-programming-examples-data-structures/	6
Unit IV	4. Write a program to implement queue using array and linked list.	Baishali Dey	Tutorial with ICT Tools		6
Unit V	5. Write program that implements linear (using array and linked list) and binary search. Methods of searching for elements in a list 5.	Baishali Dey	Tutorial with ICT Tools		4
Unit VI	6. Write a programs of a) Bubble sort b) Insertion Sort c) Selection sort d) Quick-sort etc.	Baishali Dey	Tutorial with ICT Tools	5. https://www.javatpoint.com/data-structure-in-c	8
Unit VII	7. Write and trace programs to create a Binary search tree and insertion and deletion of node from the tree. Write recursive and non-recursive routines to traverse Binary tree in preorder, inorder and post-order.	Baishali Dey	Tutorial with ICT Tools		6
Total No. of Hours allotted to the Course					82(36+46)

* **Guideline to calculate (kindly omit this section afterwards):**

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5 x 12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2023-24)

Department: Computer Science

Semester: 2nd

Major/Minor/Hons/Prog: Major

Course Name: Data Structures and Algorithms

Course Code: BSCCOSMJ201

Credit (No. of Hours per Week): 5 (L-T-P:3-0-4)

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
Theory					
Unit I	Basic concepts- Data, data structures, ADT, Algorithm Specification-Introduction, Recursive algorithms, Data Abstraction, Performance analysis, Linear and Non Linear data structures.	Dolan Dutta	Lecture with Chalk and Board	1.Data Structures- Seymour Lipschutz	4
Unit II	Singly Linked Lists-Operations, Concatenating, circularly linked Lists-Operations for Circularly linked lists, Doubly Linked Lists- Operations. Polynomial and sparse matrix representations using linked list.	Dolan Dutta	Lecture with Chalk and Board	2. Data Structures using C- Reema Thareja	4
Unit III	Stack- Definition and Operations, Array and Linked Implementations, Applications - Valid Expression Checking (Parenthesis matching), Reversal of string, Infix to Postfix Conversion, Postfix Expression Evaluation, Recursion Implementation.	Dolan Dutta	Lecture with Chalk and Board	3. Expert Data Structures with C- R.B.Patel	6
Unit IV	Queue - Definition and Operations, Array and Linked Implementations, Applications, Circular Queues - Insertion and Deletion Operations, De-queue	Dolan Dutta	Lecture with Chalk and		4

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	(Double Ended Queue) - Introduction.		Board		
Unit V	Searching methods- Linear and Binary.	Dolan Dutta	Lecture with Chalk and Board	4. https://www.tutorialspoint.com/data_structures_algorithms/index.htm	3
Unit VI	Sorting Methods – Bubble, Insertion, Selection, Shell, Using Divide-Conquer Approach (Quick and Merge sort), Comparison of Sorting Methods.	Dolan Dutta	Lecture with Chalk and Board		5
Unit VII	Trees, Representation of Trees, Binary tree, Properties of Binary Trees, Binary Tree Representations- Array and Linked Representations, Binary Tree Traversals, Threaded Binary Trees, Binary Search tree - Creation, Insertion, Deletion and Search, AVL tree- Definition, Examples, Insertion and Rotations, B tree, B+ tree, Heap- Definition, Min heap, Max heap, Insertion and Deletion, Priority Queue using Heap.	Dolan Dutta	Lecture with Chalk and Board	5. https://www.geeksforgeeks.org/data-structures/ 6. https://www.w3schools.com/dsa/dsa_intro.php	5
Unit VIII	Graphs, Graph ADT, Graph representation, Graph Traversals and Searching.	Dolan Dutta	Lecture with Chalk and Board		5

Practical

Unit I	1. Write program that uses functions to perform the following: a) Creation of list of elements where the size of the list, elements to be inserted and deleted is dynamically given as input. b) Implement the operations, insertion, deletion at a given position in the list and search for an element in the list. c) To display the elements in forward / reverse order	Dolan Dutta	Tutorial with ICT Tools	1. Data Structures using C- Reema Thareja 2. Expert Data Structures with C- R.B.Patel	10
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Unit II	2. Write recursive programs for Factorial, Fibonacci numbers, Tower of Hanoi etc.	Dolan Dutta	Tutorial with ICT Tools	3. https://www.w3schools.com/dsa/dsa_intro.php	6
Unit III	3. Write a program to implement stack (using array and linked list). Write a program that demonstrates the application of stack operations (Eg: infix expression to postfix conversion, postfix evaluation).	Dolan Dutta	Tutorial with ICT Tools	4. https://www.sanfoundry.com/c-programming-examples-data-structures/	6
Unit IV	4. Write a program to implement queue using array and linked list.	Dolan Dutta	Tutorial with ICT Tools	5. https://www.javatpoint.com/data-structure-in-c	6
Unit V	5. Write program that implements linear (using array and linked list) and binary search. Methods of searching for elements in a list 5.	Dolan Dutta	Tutorial with ICT Tools		4
Unit VI	6. Write a programs of a) Bubble sort b) Insertion Sort c) Selection sort d) Quick-sort etc.	Dolan Dutta	Tutorial with ICT Tools		8
Unit VII	7. Write and trace programs to create a Binary search tree and insertion and deletion of node from the tree. Write recursive and non-recursive routines to traverse Binary tree in preorder, inorder and post-order.	Dolan Dutta	Tutorial with ICT Tools		6
Total No. of Hours allotted to the Course					82(36+46)

* **Guideline to calculate (kindly omit this section afterwards):**

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5 x 12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2023-24)

Department: Computer Science

Semester: 4th

Major/Minor/Hons/Prog: Hons

Course Name: Introduction to Database Management System

Course Code: BSCHCOSGE402

Credit (No. of Hours per Week): 6 (L-T-P:4-0-4)

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
Theory					
Unit I	Basic Database Concepts, Terminology, and Architecture; Types of Database Management Systems. Differences between Relational and other Database Models. Data Modeling: Relations, Schemas, Constraints, Queries, and Updates; Conceptual vs. Physical Modeling; Entity Types, attributes, ER Diagrams.	Dolan Dutta	Lecture with Chalk and Board	1. Elmasri's and Navathe's Fundamentals of Database Systems. Addison-Wesley.	16
Unit II	SQL Data Definition: Specifying Tables, Data Types, Constraints; Simple SELECT, INSERT, UPDATE, DELETE Statements; Complex SELECT Queries, including Joins and Nested Queries; Actions and Triggers; Views; Altering Schemas.	Dolan Dutta	Lecture with Chalk and Board	2. Silberschatz, Henry. F. Korth, S. Sudarshan, Data base System Concepts, McGraw	10
Unit III	Relational Algebra: Definition of Algebra; Relations as Sets; Operations:	Dolan Dutta	Lecture with Chalk and Board		12

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	SELECT, PROJECT, JOIN, etc. Normalization Theory and Functional Dependencies, 2NF,3NF, BCNF, 4NF, 5NF;			Hill Education.	
Unit IV	Indexing: Files, Blocks, and Records, Hashing; RAID; Replication; Single-Level and Multi-Level Indexes; B-Trees and B+-Trees. Basics of Transactions, Concurrency and Recovery.	Dolan Dutta	Lecture with Chalk and Board	3. Database Management System (DBMS) by Rajiv Chopra	6
Unit V	Introduction to BIG DATA: Motivations; Applications	Dolan Dutta	Lecture with Chalk and Board		4

Practical

Unit I	E-R Model Analyze the organization and identify the entities , attributes and Relationships in it. . Identify the primary keys for all the entities. Identify the other keys like candidate keys, partial keys, if any.	Dolan Dutta	Tutorial with computer Lab	4. https://www.geeksforgeeks.org/introduction-of-dbms-database-management-system-set-1/	4
Unit II	Concept designs with E-R Model Relate the entities appropriately. Apply Cardinalities for each relationship. Identify strong entities and weak entities (if any).	Dolan Dutta	Tutorial with computer Lab	5. https://www.javatpoint.com/dbms-tutorial	4
Unit III	Relational Model Represent all the entities (Strong, Weak) in tabular fashion. Represent relationships in a tabular fashion.	Dolan Dutta	Tutorial with computer Lab	6. https://www.javatpoint.com/dbms-tutorial	4
Unit IV	Normalization Apply the First, Second and Third Normalization levels on the	Dolan Dutta	Tutorial with	6. https://www.javatpoint.com/dbms-tutorial	4

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	database designed for the organization.		computer Lab	www.visual-paradigm.com/guide/data-modeling/what-is-entity-relationship-diagram/#:~:text=Entity%20Relationship%20Diagram%2C%20also%20known,inter%2Drelationships%20among%20these%20entities.	
Unit V	Practicing DDL commands. Creating databases, How to create tables, altering the database, dropping tables and databases. Try truncate, rename commands etc.	Dolan Dutta	Tutorial with computer Lab		6
Unit VI	Practicing DML commands on the Database created for the example organization DML commands are used to for managing data within schema objects. Some examples: ● SELECT - retrieve data from the a database ● INSERT - insert data into a table ● UPDATE - updates existing data within a table ● DELETE - deletes all records or few records from a table.	Dolan Dutta	Tutorial with computer Lab		10
Unit VII	Querying practice queries (along with sub queries) involving ANY, ALL, IN,Exists, NOT EXISTS, UNION, INTERSECT, Constraints etc.	Dolan Dutta	Tutorial with computer Lab		6
Unit VIII	Practice queries using Aggregate functions (COUNT, SUM, AVG, and MAX and MIN), GROUP BY, HAVING and Creation and dropping of Views.	Dolan Dutta	Tutorial with computer Lab	7. https://www.lucidchart.com/pages/er-diagrams	6
Unit IX	Triggers - Work on Triggers. Creation of, insert trigger, delete trigger, update trigger.	Dolan Dutta	Tutorial with computer Lab		4
Total No. of Hours allotted to the Course					96(48+48)

* **Guideline to calculate (kindly omit this section afterwards):**

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5 x 12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2023-24)

Department: Computer Science

Semester: 3rd

Major/Minor/Hons/Prog: Major

Course Name: Discrete Mathematics

Course Code: BSCCOSMJ301

Credit (No. of Hours per Week): 5 (L-T-P: 4-1-0)

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
Unit I	Sets: Finite and Infinite Sets, Uncountable Infinite Sets, problems based on set theory.	Dolan Dutta	Lecture with Chalk and Board	1. C.L. Liu & Mahopatra, Elements of Discrete mathematics, 2nd Sub Edition 1985, Tata McGraw Hill 2. Kenneth Rosen, Discrete Mathematics and Its	4
	Functions: Domain, Co-domain, Range, Injective, surjective and bijective functions Equal function, Exponential function, Logarithmic function, Square function, Cube function	Dolan Dutta	Lecture with Chalk and Board		6
	Relations: Reflexive, Symmetric, Anti-symmetric, Properties of Binary Relations, Closure, Partial Ordering Relations; Counting - Pigeonhole Principle	Dolan Dutta	Lecture with Chalk and Board		8

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	Algebraic Structures: Algebraic Structures with one Binary Operation, Semi Groups, Monoids, Groups, Algebraic Structures with two Binary Operation, Rings, Integral Domain and Fields.	Dolan Dutta	Lecture with Chalk and Board	Applications, Sixth Edition, McGraw Hill	6
	Permutation and Combination: Introduction to Permutation and Combination, Permutation of thing not all different, Multiplication Principle, Addition Principle.	Dolan Dutta	Lecture with Chalk and Board	3. Discrete Mathematics, with Graph Theory and Combinatorics-	4
	Basics of probability: Random Experiment, sample space, event, types, definition, simple problems.	Dolan Dutta	Lecture with Chalk and Board	T. Veerarajan	4
	Mathematical Induction: Principle of Inclusion and Exclusion.	Dolan Dutta	Lecture with Chalk and Board	4. Graph Theory- Narsingh Deo	2
Unit II	Growth of Functions: Asymptotic Notations, Summation Formulas and Properties, Bounding Summations, Approximation by Integrals.	Dolan Dutta	Tutorial with ICT Tools	5. https://www.geeksforgeeks.org/d	4
Unit III	Recurrences: Recurrence Relations, Generating Functions, Linear Recurrence Relations with Constant Coefficients and their Solution, Substitution Method, Recurrence Trees, Master Theorem.	Dolan Dutta	Tutorial with ICT Tools	6. https://www.javatpoint.com/disc	4
Unit IV	Graph Theory: Basic Terminology, Models and Types, Multigraphs and	Dolan Dutta	Tutorial with ICT Tools	rete-	12

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	Weighted Graphs, Directed Graph, Graph Representation, Graph Isomorphism, Connectivity, Euler and Hamiltonian Paths and Circuits, Planar Graphs, Graph Coloring, Trees, Basic Terminology and Properties of Trees, Introduction to Spanning Trees.			tutorial	
Unit V	Propositional Logic: Proposition or Statements, Truth table, Logical Connectives, Well-formed Formulas, Tautologies, Contradiction, Equivalences, Inference Theory, Conjunctive Normal Form, Disjunctive Normal Form.	Dolan Dutta	Lecture with Chalk and Board		6
Total No. of Hours allotted to the Course					60

* **Guideline to calculate (kindly omit this section afterwards):**

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2023-24)

Department: Computer Science

Semester: 5th

Major/Minor/Hons/Prog: Hons

Course Name: Image Processing

Course Code: BSCHCOSDSE501

Credit (No. of Hours per Week): 6 (L-T-P: 5-1-0)

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
Unit I	Digital Image Fundamentals: Elements of Visual Perception, Light, Brightness Adaption and Discrimination, Image Sensing and Acquisition, Image Sampling and Quantization, Pixels, Some Basic Relationships between Pixels, Coordinate Conventions, Imaging Geometry, Perspective Projection, Linear and Nonlinear Operations	Dolan Dutta	Lecture with Chalk and Board, ICT tools	1. Rafael C. Gonzalez and Richard E. Woods, Digital Image Processing, 4th Edition, Prentice Hall.	12
Unit II	Image Enhancement in the Spatial Domain: Intensity transformations, Contrast Stretching, Histogram Equalization, Correlation and Convolution, Basics of Spatial Filtering, Smoothing Filters, Sharpening Filters, Gradient and Laplacian.	Dolan Dutta	Lecture with Chalk and Board, ICT tools	2. Anil K. Jain, Fundamentals	10
Unit III	Filtering in the Frequency domain: Fourier Transforms [one-dimensional	Dolan Dutta	Lecture with		14

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	Discrete Fourier Transform (DFT), two-dimensional DFT] and properties, FFT (Decimation in Frequency and Decimation in Time Techniques), Convolution, Correlation, 2-D sampling, Discrete Cosine Transform, Discrete Sine Transform, Discrete Wavelet Transform of Images(Haar and Hadamard), Hotelling/KL Transform, Frequency domain filtering [low pass filters, high pass filters and band pass filters].		Chalk and Board, ICT tools	of Digital Image Processing, Prentice Hall. 3. https://www.geeksforgeeks.org/digital-image-processing-basics/	
Unit IV	Image Restoration and Reconstruction: Basic Framework, Interactive Restoration, Image deformation and geometric transformations, image morphing, Restoration techniques, Noise characterization, Noise restoration filters, Adaptive filters, Linear, Position invariant degradations, Estimation of Degradation functions, Restoration from projections	Dolan Dutta	Lecture with Chalk and Board, ICT tools		12
Unit V	Color Image Processing, Color Fundamentals, Color Models, Pseudo color Image Processing, Basics of Full-Color Image Processing, Color Transformations, Smoothing and Sharpening, Color Segmentation. Morphological Image Processing, Dilation and Erosion, Opening and Closing., Extensions to Gray - Scale Images.	Dolan Dutta	Lecture with Chalk and Board, ICT tools	4. https://www.v7labs.com/blog/image-processing-guide	10
UNIT VI	Image Segmentation: Detection of Discontinuities, Edge Linking and Boundary Detection, Thresholding, Region-Based Segmentation, Segmentation by Morphological Watersheds.	Dolan Dutta	Lecture with Chalk and Board, ICT tools	5. https://www.javapoint.com/digital-image-processing-	10

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				tutorial	
Total No. of Hours allotted to the Course					68

* **Guideline to calculate (kindly omit this section afterwards):**

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2023-24)

Department: Computer Science

Semester: 5th

Major/Minor/Hons/Prog: Hons

Course Name: Image Processing

Course Code: BSCHCOSDSE501

Credit (No. of Hours per Week): 6 (L-T-P: 5-1-0)

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
Unit I	Digital Image Fundamentals: Elements of Visual Perception, Light, Brightness Adaption and Discrimination, Image Sensing and Acquisition, Image Sampling and Quantization, Pixels, Some Basic Relationships between Pixels, Coordinate Conventions, Imaging Geometry, Perspective Projection, Linear and Nonlinear Operations	Dolan Dutta	Lecture with Chalk and Board, ICT tools	1. Rafael C. Gonzalez and Richard E. Woods, Digital Image Processing, 4th Edition, Prentice Hall.	12
Unit II	Image Enhancement in the Spatial Domain: Intensity transformations, Contrast Stretching, Histogram Equalization, Correlation and Convolution, Basics of Spatial Filtering, Smoothing Filters, Sharpening Filters, Gradient and Laplacian.	Dolan Dutta	Lecture with Chalk and Board, ICT tools	2. Anil K. Jain, Fundamentals	10
Unit III	Filtering in the Frequency domain: Fourier Transforms [one-dimensional	Dolan Dutta	Lecture with		14

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	Discrete Fourier Transform (DFT), two-dimensional DFT] and properties, FFT (Decimation in Frequency and Decimation in Time Techniques), Convolution, Correlation, 2-D sampling, Discrete Cosine Transform, Discrete Sine Transform, Discrete Wavelet Transform of Images(Haar and Hadamard), Hotelling/KL Transform, Frequency domain filtering [low pass filters, high pass filters and band pass filters].		Chalk and Board, ICT tools	of Digital Image Processing, Prentice Hall. 3. https://www.geeksforgeeks.org/digital-image-processing-basics/	
Unit IV	Image Restoration and Reconstruction: Basic Framework, Interactive Restoration, Image deformation and geometric transformations, image morphing, Restoration techniques, Noise characterization, Noise restoration filters, Adaptive filters, Linear, Position invariant degradations, Estimation of Degradation functions, Restoration from projections	Dolan Dutta	Lecture with Chalk and Board, ICT tools		12
Unit V	Color Image Processing, Color Fundamentals, Color Models, Pseudo color Image Processing, Basics of Full-Color Image Processing, Color Transformations, Smoothing and Sharpening, Color Segmentation. Morphological Image Processing, Dilation and Erosion, Opening and Closing., Extensions to Gray - Scale Images.	Dolan Dutta	Lecture with Chalk and Board, ICT tools	4. https://www.v7labs.com/blog/image-processing-guide	10
UNIT VI	Image Segmentation: Detection of Discontinuities, Edge Linking and Boundary Detection, Thresholding, Region-Based Segmentation, Segmentation by Morphological Watersheds.	Dolan Dutta	Lecture with Chalk and Board, ICT tools	5. https://www.javatpoint.com/digital-image-processing-	10

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				tutorial	
Total No. of Hours allotted to the Course					68

* **Guideline to calculate (kindly omit this section afterwards):**

Suppose the Credit (No. of Hours per Week) of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5×12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year: 2024)

Department: ZOOLOGY

Semester: 1ST(Major/Minor) , 3RD(Major/Minor), 5TH (H/P)

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90*(As per KNU Academic Calendar)

Total Teaching Weeks: 12*

R.G.: DR. RAMANSU GOSWAMI; S.M.: DR. SAUBHIK MITRA; S.C.: MS. SHIULI CHAKRABORTY

SEMESTER	Course Code	Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic/ Subtopic in the entire Teaching Phase of 90 days in a Semester*
SEM-I ZOOLOGY MAJOR	BSCZOOMJ101 (Diversity of Non-chordates)	I	Principles of Animal Classification	R.G.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL	Sinha, K. S., Adhikari, S., Ganguly, B. B. & Bharati Goswami, B. D. (2001). Biology of Animals. Vol. I. New Central Book Agency (p) Ltd. Ruppert, E.E., Fox, R.S., Barnes, R. D. (2003). Invertebrate Zoology: A Functional Evolutionary Approach. VII Edition, Cengage Learning, India	15
		II	Multicellularity and Origin of Metazoa	S.M.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL		12
		III	Diversity in Protists, Acoelomate and Pseudocoelomate Metazoa	R.G.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL		15
		IV	Diversity in and Coelomate Non chordates and hemichordates	S.C.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL		18
	BSCZOOSE101(P ublic Health and Hygiene)	I	Maintenance of personal and community hygiene	S.M.	Lecture Chalk and Board/ Tutorial with ICT Tools	Muthu, V.K. (2014) A Short Book of Public Health. Wong, K.V. (2017) Nutrition, Health and Disease.	15
		II	Nutrient deficiency diseases	S.M.	Lecture Chalk and Board/ Tutorial with ICT Tools		15

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		III	Communicable and contagious diseases	R.G.	Lecture Chalk and Board/ Tutorial with ICT Tools		15
		IV	Non-communicable diseases and cure	R.G.	Lecture Chalk and Board/ Tutorial with ICT Tools		15
SEM-I ZOOLOGY MINOR	BSCZOOMN101 (Diversity of Non-chordates)	I	Principles of Animal Classification	R.G.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL	Sinha, K. S., Adhikari, S., Ganguly, B. B. & Bharati Goswami, B. D. (2001). Biology of Animals. Vol. I. New Central Book Agency (p) Ltd. Ruppert, E.E., Fox, R.S., Barnes, R. D. (2003). Invertebrate Zoology: A Functional Evolutionary Approach. VII Edition, Cengage Learning, India	15
		II	Multicellularity and Origin of Metazoa	S.M.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL		12
		III	Diversity in Protists, Acoelomate and Pseudocoelomate Metazoa	R.G.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL		15
		IV	Diversity in and Coelomate Non chordates and hemichordates	S.C.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL		18
SEM-III ZOOLOGY MAJOR	BSCZOOMJ301 (Animal Physiology & Comparative Anatomy)	I	Teguments, skeletal and muscle system	R.G.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL	Jordan, E. L. and Verma, P. S. (2013) Chordate Zoology (14th edition). S. Chand & Company Ltd. New Delhi. Guyton, A.C. et al. (2008) Textbook of Medical Physiology (12th Ed) W.B. Saunders Co.	15
		II	Digestive, Locomotory, Respiratory systems	S.C.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL		15
		III	Diversity of Circulatory and Excretory systems	R.G.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL		15
		IV	Diversity of Nervous, Endocrine and Reproductive systems	S.M.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL		15

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	BSCZOOMJ302 (Applied Zoology of Invertebrates)	I	Sericulture	R.G.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL	Shukla, G.S. and Upadhyaya, V.B. (1999-2000). Economic Zoology (Rastogi Publishers).	15
		II	Apiculture	S.C.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL		15
		III	Lac culture, Vermiculture	S.C.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL		15
		IV	Pest and pest management	S.M.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL		15
SEM-III ZOOLOGY MINOR	BSCZOOMN301 (Animals of Economic Importance)	I	Aquaculture	S.M.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL	Shukla, G.S. and Upadhyaya, V.B. (1999-2000). Economic Zoology (Rastogi Publishers). Banerjee, G.C.; (2019) A Textbook Of Animal Husbandry, 8Ed, Oxford & IBH publishing	15
		II	Apiculture & Sericulture	S.C.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL		15
		III	Lac culture, Vermiculture and pest biology	R.G.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL		15
		IV	Livestock management and Maintenance of breeds	R.G.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL		15
SEM-V ZOOLOGY HONOURS	BSCHZOOC501 (Biotechniques)	ALL	Biotechniques (ALL UNITS)	R.G.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL	Wilson, K. and Walker, J. (2010) Experimental Biochemistry, Cambridge. Kumar, P.; (2016) Fundamentals and Techniques of Biophysics and Molecular Biology, 1st Ed, Pathfinder Publication	60
	BSCHZOOC502 (Microbiology, Parasitology & Immunology)	ALL	Microbiology, Parasitology & Immunology (ALL UNITS)	S.M.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL	Baveja C.P.; (2018) A textbook of Microbiology, 6th Ed, Arya Publishing Company Chatterjee, K.D (2015) Parasitology (13th edition). CBS Publishers	60

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						Roitt, I.; Brostoff, J. and Male, D. (2012) Immunology (8th edition).Elsevier	
	BSCHZOODSE502 (Livestock Management and Animal Husbandry)	I	Animal products and breeding systems	S.M.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL	Handbook of Animal Husbandry, (2008) ICAR Publication, New Delhi. Prasad, J.; (2016) Animal Husbandry and Dairy Science, Kalyani Publishers.	15
		II	Animal nutrition	S.C.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL		15
		III	Maintenance of breeds	R.G.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL		15
		IV	Marketing and related issues	R.G.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL		15
BSCHZOODSE503 (Endocrinology)	ALL	Endocrinology (ALL UNITS)	S.C.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL	Turner, C. D. (1971) General Endocrinology, Pub- Saunders Toppan.	60	
SEM-V ZOOLOGY PROGRAM	BSCPZOODSE502 (Livestock Management and Animal Husbandry)	I	Animal products and breeding systems	S.M.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL	Handbook of Animal Husbandry, (2008) ICAR Publication, New Delhi. Prasad, J.; (2016) Animal Husbandry and Dairy Science, Kalyani Publishers.	15
		II	Animal nutrition	S.C.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL		15
		III	Maintenance of breeds	R.G.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL		15
		IV	Marketing and related issues	R.G.	Lecture Chalk and Board/ Tutorial with ICT Tools/ PRACTICAL		15

***Guideline to calculate** (kindly omit this section afterwards):

Suppose the Credit (No. of Hours per Week)of a Course is '5' then the 'Total No. of Hours Allotted to the Course' has to be 5 x 12 (as 90 Days is approximately 12 weeks) = 60. Consequently, 'No. of Hours' allotted to each 'Unit/Topic/Subtopic' of that particular Course has to be calculated in such a way that the total becomes 60.

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Lesson Plan (Academic Year:2023-2024) NEP

Department: POLITICAL SCIENCE

Semester: 1

Major/Minor/Hons/Prog: MAJOR

Course Name: POLITICAL THEORY -1

Course Code: BAPLSMJ101

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic.
I	What is Politics-Approaches to the study of politics: Normative and Empirical, Behavioral & post-Behavioral.	BD	Lecture with Board work & tutorial	An Introduction to Political Theory- O.P GAUBA	9
II	Concept of State: Social contract Theory. (Hobbes, Lock, Rousseau)	BD	Lecture with Board work & tutorial	An Introduction to Political Theory- O.P GAUBA	9
III	Nature of State: Idealist, Liberal and Neo-liberal Theories.	BD	Lecture with Board work & tutorial	An Introduction to Political Theory- O.P GAUBA	9
IV	Sovereignty: Monistic & Pluralistic Theories	BD	Lecture with Board work & tutorial.	Dc bhattacharya- Political theory	9
V	Democracy: Concept & Classification	KM	Lecture with Board work & tutorial.	An Introduction to Political Theory- O.P GAUBA	12
VI	Liberty, Equality, and Rights: Concepts and their interrelations	KM	Lecture with Board work & tutorial.	An Introduction to Political Theory- O.P GAUBA	12
VII	Justice: Theory of Rawls and Robert Nozick	KM	Lecture with Board work & tutorial.	An Introduction to Political	12

				Theory- O.P GAUBA	
Total No. of Hours allotted to the Course					72

Department: POLITICAL SCIENCE
Semester: 1
Major/Minor/Hons/Prog: MINOR
Course Name: POLITICAL THEORY -1
Course Code: BAPLSMN101
Credit (No. of Hours per Week): 5*
Total Teaching Days: 90* (As per KNU Academic Calendar)
Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic.
I	What is Politics-Approaches to the study of politics: Normative and Empirical, Behavioral & post-Behavioral.	JT	Lecture with Board work & tutorial	An Introduction to Political Theory- O.P GAUBA	8
II	Concept of State: Social contract Theory. (Hobbes, Lock, Rousseau)	JT	Lecture with Board work & tutorial	An Introduction to Political Theory- O.P GAUBA	8
III	Nature of State: Idealist, Liberal and Neo-liberal Theories.	JT	Lecture with Board work & tutorial	An Introduction to Political Theory- O.P GAUBA	8
IV	Sovereignty: Monistic & Pluralistic Theories	JB	Lecture with Board work & tutorial.	De bhattacharya- Political theory	12
V	Democracy: Concept & Classification	JB	Lecture with Board work & tutorial.	G SABINE- history of political theory	12
VI	Liberty, Equality, and Rights: Concepts and their interrelations	KM	Lecture with Board work & tutorial.	An Introduction to Political Theory- O.P GAUBA	12
VII	Justice: Theory of Rawls and Robert Nozick	KM	Lecture with Board work & tutorial.	An Introduction to Political Theory- O.P GAUBA	12
Total No. of Hours allotted to the Course					72

Department: POLITICAL SCIENCE
Semester: 1
Major/Minor/Hons/Prog: MDC
Course Name: Human rights
Course Code: BAPolsc MDC-103
Credit (No. of Hours per Week): 3
Total Teaching Days: 90* (As per KNU Academic Calendar)
Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic.
I	Concept of human rights, Meaning, Nature & Scope, Evolution of human rights	JB	Lecture with Board work & tutorial.	Clapham, Andrew, Human rights:	9
II	Indian Constitution and Protection of human rights	JB	LectureChalk and Board	Das, Jayanta Kumar, Human rights law and practice	9
III	National Human Rights Commission- Composition, functions, and role	BD	Lecture with Board work & tutorial.	Clapham, Andrew, Human rights:	9
IV	Human Rights – Terrorism and Counter- terrorism	BD	LectureChalk and Board	Das, Jayanta Kumar, Human rights law and practice	9
Total No. of Hours allotted to the Course					36

Department: POLITICAL SCIENCE

Semester: 1

Major/Minor/Hons/Prog: SEC

Course Name: Democratic Awareness with Legal Literacy

Course Code: BAPLSSE101

Credit (No. of Hours per Week): 3

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic.
I	Constitution - Fundamental Rights, Fundamental Duties, Other Constitutional Rights	JT	ITC, Lecture with Board work & tutorial	Basu, D. D, Introduction to the Constitution of India	12
II	Laws relating to dowry, sexual harassment and violence against women–National Commission for women	JT	ITC, Lecture with Board work & tutorial & Assign a PROJECT	C. Kumar and K. Chockalingam (eds) Human Rights, Justice, and Constitutional Empowerment	12
III	Laws relating to consumer rights and Consumers' Protection Act 1986 and Cyber crimes	MG	ITC, Lecture with Board work & tutorial	Basu, D. D, Introduction to the Constitution of India	6
IV	Right to Information Act, 2005 & Right to Free and Compulsory Education Act 2009	MG	ITC, Lecture with Board work & tutorial & Assign a PROJECT	C. Kumar and K. Chockalingam (eds) Human Rights, Justice, and	6

				Constitutional Empowerment	
Total No. of Hours allotted to the Course					36

Department: POLITICAL SCIENCE

Semester: 2

Major/Minor/Hons/Prog: MAJOR

Course Name: POLITICAL THEORY - II

Course Code: BAPLSMJ201

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic.
I	Marxist approach to the study of Politics: Dialectical Materialism, Historical Materialism, and Class and Class Struggle	JB	Lecture with Board work & tutorial	An Introduction to Political Theory- O.P GAUBA	12
II	The question of the relative autonomy of the State - Ralph Miliband and Nicos Poulantzas.	KM	Lecture with Board work & tutorial	An Introduction to Political Theory- O.P GAUBA	12
III	Gramsci's concept of hegemony	JB	Lecture with Board work & tutorial	An Introduction to Political Theory- O.P GAUBA	12
IV	Theory of Revolution: Lenin and Mao	JB	Lecture with Board work & tutorial.	De bhattacharya- Political theory	12
V	Marxian theory of Party: Lenin's contribution; Lenin-Rosa Luxemburg Debate on Party	BD	Lecture with Board work & tutorial.	An Introduction to Political Theory- O.P GAUBA	12

Total No. of Hours allotted to the Course	60
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Department: POLITICAL SCIENCE
Semester: 2
Major/Minor/Hons/Prog: MINOR
Course Name: POLITICAL THEORY - II
Course Code: BAPLSMN201
Credit (No. of Hours per Week): 5*
Total Teaching Days: 90* (As per KNU Academic Calendar)
Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic.
I	Marxist approach to the study of Politics: Dialectical Materialism, Historical Materialism, and Class and Class Struggle	JB	Lecture with Board work & tutorial	An Introduction to Political Theory- O.P GAUBA	12
II	The question of the relative autonomy of the State - Ralph Miliband and Nicos Poulantzas.	KM	Lecture with Board work & tutorial	An Introduction to Political Theory- O.P GAUBA	12
III	Gramsci's concept of hegemony	JB	Lecture with Board work & tutorial	An Introduction to Political Theory- O.P GAUBA	12
IV	Theory of Revolution: Lenin and Mao	JB	Lecture with Board work & tutorial.	Dc bhattacharya- Political theory	12
V	Marxian theory of Party: Lenin's contribution; Lenin-Rosa Luxemburg Debate on Party	BD	Lecture with Board work & tutorial.	An Introduction to Political Theory- O.P	12

				GAUBA	
Total No. of Hours allotted to the Course					60

Department: POLITICAL SCIENCE

Semester: 2

Major/Minor/Hons/Prog: MDC

Course Name: Women Empowerment in India: Issues and Dimensions

Course Code: MDC201

Credit (No. of Hours per Week): 3*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic.
I	Conceptual Definition: Women and Women empowerment - Sex and Gender – Patriarchy	JT	Lecture with Board work & tutorial	Nivedita Menon Gender and Politics in India	9
II	Women and caste, religion, Women and environment, development; Women and access to resources: employment, health, education - Public sphere participation of women in politics	JT	Lecture with Board work & tutorial	Neera Desai and Usha Thakkar Women in Indian Society	9
III	The women's questions in pre-Independence era - sati-reform, widow remarriage; post-Independence campaign against sexual harassment, dowry, violence; debates around the Uniform Civil Code	JT	Lecture with Board work & tutorial	Nivedita Menon Gender and Politics in India	9
IV	Women, the Law and the State: Constitutional remedies and rights against gender-based violence; The history of constitutional protections for women (Hindu Code Bill, right to property, personal laws)	JT	Lecture with Board work & tutorial.	Neera Desai and Usha Thakkar Women in Indian Society	9
Total No. of Hours allotted to the Course					36

Department: POLITICAL SCIENCE

Semester: 2

Major/Minor/Hons/Prog: SEC

Course Name: Indian Constitutional Development

Course Code: BAPLSSE201

Credit (No. of Hours per Week): 3*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books /Journals/E-Content	No. of Hours Allotted to the Topic.
I	Brief history of Indian Constitutional Development since 1858-1909	JT	Lecture with Board work & tutorial	Modern India - Sumit Sarkar	6
II	Government of India Act 1919 or Montague Chelmsford Reforms 1919: Main Provisions (in details) and Dyarchy	JT	Lecture with Board work & tutorial	Modern India - Sumit Sarkar	6
III	Simon Commission	JT	Lecture with Board work & tutorial	India's Struggle for Independence - Bipan Chandra	6
IV	Nehru Report	JT	Lecture with Board work & tutorial.	India's Struggle for Independence - Bipan Chandra	6
V	Government of India Act of 1935: Main Provisions (in detail), Provisional Autonomy and Federal System	KM	Lecture with Board work & tutorial	Modern India - Sumit Sarkar	6

VI	Cripps Mission Plan	KM	Lecture with Board work & tutorial	Modern India - Sumit Sarkar	6
VII	Cabinet Mission Plan	KM	Lecture with Board work & tutorial	India's Struggle for Independence - Bipan Chandra	6
VIII	Indian Independence Act of 1947: Main Provisions	KM	Lecture with Board work & tutorial	India's Struggle for Independence - Bipan Chandra	6
Total No. of Hours allotted to the Course					48

Semester: 3

Major/Minor/Hons/Prog: Major

Course Name: Western Political Thought – I

Course Code: BAPLSMJ301

Credit (No. of Hours per Week): 5

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/ E-Content	No. of Hours Allotted to the Topic.
I	Background of Western Political Thought: A brief outline with special emphasis on Stoics and Sophists.	MG	ITC Lecture with Board work & tutorial.	S. Mukherjee and S. Ramaswamy, A History of Political Thought	12
II	Greek Political Thoughts: A) Plato: Theory of Ideal State and Justice B) Aristotle: concepts of state and constitution.	MG	ITC&Lecture Chalk and Board	.Western Political Thought-A K Mukhopad hayay	9
III	Roman Political Thought: Law and Jurisprudence Medieval Political Thought in Europe: Features.	MG&JB	Tutorial with ICT Tools	Western Political Thought-OP Gauba	11 & 11
IV	Post- Mediaeval political thought in Europe: Nicole Machiavelli-Secularization of politics.	JB	ITC& Lecture chalk&	S.Mukherjee&S Ramaswam	15

			Board	y,A History of Political Thought	
V	Jean Bodin-Theories of State& Sovereignty	JB	Lecture with Board work & Tutorial	A.K.Mukhopadhyay, Western political thought: From Plato to Marx	10
Total No. of Hours allotted to the Course					60

Semester: 3

Major/Minor/Hons/Prog: Major

Course Name:COMPARATIVE POLITICS

Course Code: BAPLSMJ302

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/ E-Content	No. of Hours Allotted to the Topic.
I	Distinction between comparative politics & comparative Govt	JT	Lecture with Board work & tutorial.	Rakhahari Chatterjee-Introductory comparative political analysis	9
II	Scope purpose and method of comparison	JT	LectureChalk and Board	SN Roy-Modern comparative politics.	9
III	Theories of political system - Easton. Almond & powell	MG	Tutorial with ICT Tools	DC BHATTACHARYYA	10

IV	Theories of Political Modernization and Political Development: Pye and Huntington	MG	Lecture with Board work & tutorial	Rakhahari Chatterjee-Introductory comparative political analysis	
V	Dependency Theory: Andre Gunder Frank	JB	Lecture with Board work & tutorial	Rakhahari Chatterjee-Introductory comparative political analysis	
VI	Constitutionalism: Evolution of the Idea of Constitutionalism, Post-colonial Constitutionalism and Rule of Law	KM	Lecture with Board work & tutorial	Rakhahari Chatterjee-Introductory comparative political analysis	6
VII	Electoral System: Definition and procedures: Types of electoral systems (First Past the Post, Proportional Representation, Mixed Representation.	KM	Lecture with Board work & tutorial	Rakhahari Chatterjee-Introductory comparative political analysis	6
Total No. of Hours allotted to the Course					28

Semester: 3

Major/Minor/Hons/Prog: Minor

Course Name: COMPARATIVE GOVERNMENT & POLITICS

Course Code: BAPLSMN-301

Credit (No. of Hours per Week): 5*

Total Teaching Days: 90* (As per KNU Academic Calendar)

Total Teaching Weeks: 12*

Unit No.	Topic/Subtopic	Name of the Teacher	Method and Means of Teaching	Suggested Books / Journals/ E-Content	No. of Hours Allotted to the Topic.
I	Distinction between comparative politics & comparative Govt	JT	Lecture with Board work & tutorial.	Rakhahari Chatterjee-Introductory comparative	12

				e political analysis	
II	Scope purpose and method of comparison	JT	LectureChalk and Board	SN Roy-Modern comparative politics.	12
III	Theories of political system - Easton. Almond & powell	JT	Tutorial with ICT Tools	DC BHATTACHARYYA	12
IV	Typology of Constitutional Systems: Unitary and Federal, Parliamentary and Presidential	KM	Lecture with Board work & tutorial.	Rakhahari Chatterjee-Introductory comparative political analysis	12
V	Executive, Legislature and Judiciary: UK, USA and PRC	KM	Lecture with Board work & tutorial.	SN Roy-Modern comparative politics.	12
VI	Political Parties and Pressure Groups: UK and USA	KM	Lecture with Board work & tutorial.	DC BHATTACHARYYA	12
Total No. of Hours allotted to the Course					72

Lesson Plan 2023-24
Department of Electronics

Semester	Major/Minor/	Course Name	Course Code	Name of the Faculty
I	Major	BASIC ELECTRONICS	BSELCMJ101	Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
	ESE	DESIGN AND FABRICATION OF ELECTRONIC CIRCUIT I	BSELCSE101	Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
	Minor	BASIC ELECTRONICS	BSELCMN101	Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
Dr. Dulal Chandra Sen				
MDC	ELECTRONIC MEASUREMENTS	MDC116	Dr. Dulal Chandra Sen	

II	Major	SOLID STATE ELECTRONICS	BSCELCMJ201	Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
	ESE	DESIGN AND FABRICATION OF ELECTRONIC CIRCUIT II	BSCECOSE201	Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
	Minor	SOLID STATE ELECTRONICS	BSCELCMN201	Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen
				Dr. Dulal Chandra Sen

Units Taught	Classes	Methods of Teaching	Evaluative Method
Unit -1 (Theory)	5	Offline(Classroom Mode)	Int. Assmnt. And Offline Written Test (ESE)
Unit-2 (Theory)	35	Offline Classroom Mode	Int. Assmnt. And Offline Written Test (ESE)
Unit -3 (Theory)	60	Offline Classroom Mode	Int. Assmnt. And Offline Written Test (ESE)
Unit - 4 (Theory)	15		Int. Assmnt. And Offline Written Test (ESE)
Unit- 5 BASIC ELECTRONICS (Practical), Lab– I	45	Laboratory Classes	CIE and ESE (Lab)
Unit- 6 BASIC ELECTRONICS (Practical), Lab– I		Laboratory Classes	CIE and ESE (Lab)
Unit- 7 BASIC ELECTRONICS (Practical), Lab– I		Laboratory Classes	CIE and ESE (Lab)
Unit- 8 BASIC ELECTRONICS (Practical), Lab– I		Laboratory Classes	CIE and ESE (Lab)
Unit - 1 Home Assignments and Laboratory Classes		Assignments and Practical	CIE and Practical
Unit - 2 Home Assignments and Laboratory Classes		Assignments and Practical	CIE and Practical
Unit -1 (Theory)	30	Offline(Classroom Mode)	Int. Assmnt. And Offline Written Test (ESE)
Unit-2 (Theory)	20	Offline(Classroom Mode)	Int. Assmnt. And Offline Written Test (ESE)
Unit - 3 (Theory)		Offline(Classroom Mode)	Int. Assmnt. And Offline Written Test (ESE)
Unit - 4 (Theory)		Offline(Classroom Mode)	Int. Assmnt. And Offline Written Test (ESE)
Unit - 5 (Practical) BASIC ELECTRONICS, Lab– I	60	Laboratory Classes	CIE and ESE (Lab)
Unit - 6 (Practical) BASIC ELECTRONICS, Lab– I		Laboratory Classes	CIE and ESE (Lab)
Unit - 7 (Practical) BASIC ELECTRONICS, Lab– I		Laboratory Classes	CIE and ESE (Lab)
Unit - 8 (Practical) BASIC ELECTRONICS, Lab– I		Laboratory Classes	CIE and ESE (Lab)
Unit - I (Theory)	40	Offline(Classroom Mode)	Int. Assmnt. And Offline Written Test (ESE)
Unit 2 (Theory)	10	Offline(Classroom Mode)	Int. Assmnt. And Offline Written Test (ESE)

Unit -1 (Theory)	15	Offline(Classroom Mode)	Int. Assmnt. And Offline Written Test (ESE)
Unit-2 (Theory)	20	Offline(Classroom Mode)	Int. Assmnt. And Offline Written Test (ESE)
Unit-3 (Theory)	5	Offline(Classroom Mode)	Int. Assmnt. And Offline Written Test (ESE)
Unit -4 (Practical) LAB – II	6	Offline(Classroom Mode)	CIE and ESE (Lab)
Unit-5 (Practical) LAB – II	26	Offline(Classroom Mode)	CIE and ESE (Lab)
Unit -6 (Practical) LAB – II	18	Offline(Classroom Mode)	CIE and ESE (Lab)
Unit - 7 (Practical), LAB – II	10	Offline(Classroom Mode)	CIE and ESE (Lab)
Unit -8 (Practical), LAB – II	40	Offline(Classroom Mode)	CIE and ESE (Lab)
Unit - 1 Home Assignments and Laboratory Classes		Assignments and Practical	CIE and Practical
Unit - 2 Home Assignments and Laboratory Classes		Assignments and Practical	CIE and Practical
Unit - 1 (Theory)	20	Offline(Classroom Mode)	Int. Assmnt. And Offline Written Test (ESE)
Unit-2 (Theory)	20	Offline(Classroom Mode)	Int. Assmnt. And Offline Written Test (ESE)
Unit - 3 (Theory)	20	Offline(Classroom Mode)	Int. Assmnt. And Offline Written Test (ESE)
Unit - 4 (Practical)	18	Offline(Classroom Mode)	CIE and ESE (Lab)
Unit - 5 (Practical)		Laboratory Classes	CIE and ESE (Lab)
Unit - 6 (Practical)		Laboratory Classes	CIE and ESE (Lab)
Unit - 7 (Practical)		Laboratory Classes	CIE and ESE (Lab)
Unit - 8 (Practical)	22	Laboratory Classes	CIE and ESE (Lab)
Unit - 1 (Theory)		Offline (Classroom Mode)	Int. Assmnt. And Offline Written Test
Unit - 2 (Theory)		Offline (Classroom Mode)	Int. Assmnt. And Offline Written Test

Unit - 3 (Theory)		Offline (Classroom Mode)	Int. Assmnt. And Offline Written Test (ESE)
Unit - 4 (Theory)		Offline (Classroom Mode)	Int. Assmnt. And Offline Written Test (ESE)
Unit - 1 (Theory)	80	Offline(Classroom Mode)	Int. Assmnt. And Offline Written Test (ESE)
Unit - 2 (Theory)		Offline(Classroom Mode)	Int. Assmnt. And Offline Written Test (ESE)
Unit - 3 (Practical)		Laboratory Classes	CIE and ESE (Lab)
Unit - 4 (Practical)		Laboratory Classes	CIE and ESE (Lab)
Unit - 5 (Practical)		Laboratory Classes	CIE and ESE (Lab)
Unit - 1 (Theory)	15	Offline(Classroom Mode)	Int. Assmnt. And Offline Written Test (ESE)
Unit - 2 (Theory)		Offline(Classroom Mode)	Int. Assmnt. And Offline Written Test (ESE)
Unit - 3 (Theory)		Offline(Classroom Mode)	Int. Assmnt. And Offline Written Test (ESE)
Unit - 4 (Theory)		Offline(Classroom Mode)	Int. Assmnt. And Offline Written Test (ESE)
Unit - 5 (Practical)		Laboratory Classes	CIE and ESE (Lab)
Unit - 6 (Practical)		Laboratory Classes	CIE and ESE (Lab)
Unit - 7 (Practical)		Laboratory Classes	CIE and ESE (Lab)
Unit - 8 (Practical)		Laboratory Classes	CIE and ESE (Lab)

Lesson Plan for the Academ
Department of Psychc
Methods of Teaching anc

Semester	Course Name
I	Introduction to Psychology
I	Introduction to Psychology
I	Introduction to Psychology
I	Introduction to Psychology
I	Coping and Wellbeing
II	Biopsychology
II	Biopsychology
II	Biopsychology
II	Biopsychology
II	Statistical Applications in Psychology
II	Statistical Applications in Psychology
III	Psychology of Individual Differences
III	Psychology of Individual Differences
III	Psychology of Individual Differences
III	Psychology of Individual Differences
III	Quantitative and Qualitative Research Methods
III	Quantitative and Qualitative Research Methods
III	Quantitative and Qualitative Research Methods
III	Quantitative and Qualitative Research Methods
IV	Basic Statistical Operations in Psychological Research
IV	Basic Statistical Operations in Psychological Research
IV	Basic Statistical Operations in Psychological Research
IV	Basic Statistical Operations in Psychological Research
IV	Basic Statistical Operations in Psychological Research
IV	Introduction to Indian Psychological Thought
IV	Introduction to Indian Psychological Thought
IV	Introduction to Indian Psychological Thought
V	Fundamentals of Clinical Psychology-I
V	Fundamentals of Clinical Psychology-I
V	Fundamentals of Clinical Psychology-I
V	Fundamentals of Clinical Psychology-I
V	Introduction to Indian Psychological Thought
V	Introduction to Indian Psychological Thought
V	Introduction to Indian Psychological Thought
V	Introduction to Indian Psychological Thought
V	Educational Psychology
V	Educational Psychology
V	Educational Psychology
V	Educational Psychology
V	Psychology of Health and Yoga
V	Psychology of Health and Yoga
V	Psychology of Health and Yoga

V	Psychology of Health and Yoga
V	Applied Cognitive Psychology
V	Applied Cognitive Psychology
V	Applied Cognitive Psychology
V	Applied Cognitive Psychology
VI	Fundamentals of Clinical Psychology-II
VI	Fundamentals of Clinical Psychology-II
VI	Fundamentals of Clinical Psychology-II
VI	Fundamentals of Clinical Psychology-II
VI	Foundations of Organizational Psychology
VI	Foundations of Organizational Psychology
VI	Foundations of Organizational Psychology
VI	Foundations of Organizational Psychology
VI	Human Resource Management
VI	Human Resource Management
VI	Human Resource Management
VI	Human Resource Management
VI	Positive Psychology
VI	Positive Psychology
VI	Positive Psychology
VI	Positive Psychology
VI	Applied Social Psychology
VI	Applied Social Psychology
VI	Applied Social Psychology
VI	Applied Social Psychology

Academic Session: 2024 - 2025

Psychology (HONOURS)

Final Evaluation- Offline

Course Code	Units taught	Name of the teacher
BSCHPHYMJ101	1	AM
BSCHPHYMJ101	2	AM
BSCHPHYMJ101	3	AM
BSCHPHYMJ101	4	AM
BSCPHYSE101	1	AM
BSCPHYMJ201	1	AM
BSCPHYMJ201	2	AM
BSCPHYMJ201	3	AM
BSCPHYMJ201	4	AM
BSCPSYSE201	1	AM
BSCHPSYC201	2	AM
BSCPSYMJ201	1	AM
BSCPSYMJ201	2	AM
BSCPSYMJ201	3	AM
BSCPSYMJ201	4	AM
BSCPHYMJ302	1	AM
BSCPHYMJ302	2	AM
BSCPHYMJ302	3	AM
BSCPHYMJ302	4	AM
BSCPSYMJ401	1	AM
BSCPSYMJ401	2	AM
BSCPSYMJ401	3	AM
BSCPSYMJ401	4	AM
BSCPSYMJ401	1	AM
BSCPSYMJ402	2	AM
BSCPSYMJ402	3	AM
BSCPSYMJ402	4	AM
BSCPSYMJ402	1	AM
BSCPSYMJ402	2	AM
BSCPSYMJ402	3	AM
BSCPSYMJ402	4	AM
BSCHPSYC501	1	AM
BSCHPSYC502	2	AM
BSCHPSYC503	3	AM
BSCHPSYC504	4	AM
BSCHPSYC502	1	AM
BSCHPSYC503	2	AM
BSCHPSYC504	3	AM
BSCHPSYC505	4	AM
BSCHPSYDSE501	1	AM
BSCHPSYDSE502	2	AM
BSCHPSYDSE503	3	AM
BSCHPSYDSE504	4	AM
BSCHPSYDSE502	1	AM
BSCHPSYDSE502	2	AM
BSCHPSYDSE502	3	AM

BSCHPSYDSE502	4	AM
BSCHPSYDSE503	1	AM
BSCHPSYDSE503	2	AM
BSCHPSYDSE503	3	AM
BSCHPSYDSE503	4	AM
BSCHPSYC601	1	AM
BSCHPSYC601	2	AM
BSCHPSYC601	3	AM
BSCHPSYC601	4	AM
BSCHPSYC602	1	AM
BSCHPSYC602	2	AM
BSCHPSYC602	3	AM
BSCHPSYC602	4	AM
BSCHPSYDSE601	1	AM
BSCHPSYDSE601	2	AM
BSCHPSYDSE601	3	AM
BSCHPSYDSE601	4	AM
BSCHPSYDSE602	1	AM
BSCHPSYDSE602	2	AM
BSCHPSYDSE602	3	AM
BSCHPSYDSE602	4	AM
BSCHPSYDSE603	1	AM
BSCHPSYDSE603	2	AM
BSCHPSYDSE603	3	AM
BSCHPSYDSE603	4	AM