

PROGRAMME OUTCOME OVERVIEW (CBCS SYLLABUS)

Of

DINABANDHU ANDREWS COLLEGE, KOLKATA AFFILIATED TO THE UNIVERSITY OF CALCUTTA

Dinabandhu Andrews College, affiliated to the University of Calcutta, is an educational institute that offers Bachelor of Arts, Science and Commerce degrees in accordance with the course outline and approval of the University of Calcutta.

VISION OF THE INSTITUTION: Integrity, Empowerment & Motivation. These three concepts aim to make the CU curriculum available to a diverse group of students and to equip them


- a) for the purpose of developing autonomous thought and decision-making as future youth Indians
- b) for pursuing Higher Education
- c) for prompt employment if specific stakeholders are involved

VISION IMPLEMENTATION PLAN


- The CU Syllabus provides a framework within which the institution strives to achieve this goal.
- Every department within the College is committed to achieving the overarching goal.
- At the same time, the dissemination process is alert to reinforce the core knowledge of each particular discipline in order to maintain an ever-rising curve in academic proficiency.

MENTIONS FOR REFERENCE

- a) Participatory results from workshops, conferences, seminars, and educational excursions
- b) Career Counselling cell, Entrepreneur Development Cell



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DINABANDHU ANDREWS COLLEGE

AFFILIATED TO UNIVERSITY OF CALCUTTA

Department of Bengali

UNDERGRADUATE SECTION

Model Reference: University of Calcutta, Syllabus for Bengali Advanced (CBCS)

[with effect from July 2018 (2018-19)] (Notification No. CSR/12/18)

PROGRAMME OUTCOME OVERVIEW OF B.A. IN BENGALI LITERATURE

Programme Outcome Nos	Programme Outcome (PO)
PO A	<ul style="list-style-type: none">The goal is to give pupils a thorough understanding of Bengali language, philosophy, and literature as a basis for developing their abilities.
PO B	<ul style="list-style-type: none">To become familiar with poetic meter and rhetoric in order to fully understand the literary formCC-4-9 Reference Paper (Modules 1 and 2)
PO C	<ul style="list-style-type: none">To pique students' interest in the relationship between theory and literatureCC-4-9 is the Module 3 Reference Paper.
PO D	<ul style="list-style-type: none">To familiarize students with the many genres of literatureCC-5-11 Reference Papers (Modules 1, 2, and 3)
PO E	<ul style="list-style-type: none">Introducing students to various literary works:Hindi (literature, literary history, and literary works such as poems and short stories) and English (literary history)Sanskrit (literary history)CC-6-14 Reference Paper (Modules 1, 2, and 3)
PO F	<ul style="list-style-type: none">To acquaint the learners with the cultural progression from the very beginning of Bengali language and literature to modern age highlighting the political history of BengalReference Papers: Discipline Specific Elective CourseDSE-A-5-1 (Module 1, 2 and 3)
PO G	<ul style="list-style-type: none">Presenting detective, science fiction, and supernatural novels that will complete the realization of Bengali literature as a whole.Introducing Bangladeshi Literature.aids students in discovering the literary merits of the stories they were exposed to as children.

	<ul style="list-style-type: none"> Reference Papers: DSE-A-6-3 (Modules 1, 2, and 3): Discipline Specific Elective Course
PO H	<ul style="list-style-type: none"> Offering skill-building classes on publishing and printing, screenplay writing, and the relationship between literature and film SEC-A-3-1 and SEC-A-3-2 reference papers (each for Modules 1, 2, and 3).

Programme Specific Outcomes Nos	Programme Specific Outcomes (PSO)
PSO 1	<ul style="list-style-type: none"> To be able to comprehend the significance of language as the foundation of literature and how it relates to the development of human civilization and thought. To be able to connect literature and society and prepare students' minds for the notion that, in addition to being the work of divinely inspired brilliance, literature also has a clear socioeconomic basis. The learners' minds become more analytical, scientific, and rational as a result of this revelation, and this mental clarity will aid them in higher education and future research projects.
PSO 2	<ul style="list-style-type: none"> Understanding prosody and rhetoric helps students realize how comprehensive literature is, and by extension, how complete life is. This way of thinking about life equips the student to leave a meaningful life behind.
PSO 3	<ul style="list-style-type: none"> The student gains an understanding of comparative literature through studying the history of literature and literary works in various languages. This understanding will assist the student advance to higher levels of study or research. In a similar vein, in order for a student to continue their studies in the linguistic department, stylistics expertise is also required.
PSO 4	<ul style="list-style-type: none"> The literature of West Bengal is introduced in CBCS Courses DSE, along with detective, science fiction, and supernatural stories. This helps students identify the literary qualities of these stories, which will aid them in their future research projects.
PSO 5	<ul style="list-style-type: none"> Course in CBCS SEC offers courses in publishing and printing, screenplay writing, and the connections between literature and film, all of which improve students' abilities and aid in career decision-making.

Mapping of PO & PSO for Bengali Hons Syllabus of 2018-19 of CU.

PSO	PO							
	A	B	C	D	E	F	G	H
1	√	√	√				√	√
2	√	√	√		√			
3	√		√	√				
4	√		√			√		
5	√	√		√		√	√	√


**Programme Outcome for CBCS Semester wise Courses in Bengali Honours 2018-19 Under University of
Calcutta**

TABLE I

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)							
		A	B	C	D	E	F	G	H
FIRST YEAR SEMESTER I (6 Months)	CC-1-1: History of Bengali Literature (10th to 18th Century)								
	CC-1-2: Linguistics	√			√		√		
FIRST YEAR SEMESTER II (6 Months)	AECC-1: Poems and Short stories of Rabindranath Tagore								
	CC-2-3: History of Bengali Literature (19th Century)								
	CC-2-4: Bengali Literature (Poems, Novels, short stories and essays)	√	√	√			√		

SECOND YEAR SEMESTER III (6 Months)	CC-3-5: History of Bengali Literature (20th Century)							
	CC-3-6: Linguistics							
	CC-3-7: Novels and Short Stories	√	√	√	√		√	√
	SEC-A-3-1: Printing and Publication	√		√	√	√		
	SEC-A-3-2: Applied Bengali Literature – I							
SECOND YEAR SEMESTER IV (6 Months)	CC-4-8: Pre-modern age Literature							
	CC-4-9: Metrics, Prosody and Theory							
	CC-4-10: Essays and other Writing							
	SEC-B-4-1: Applied Bengali Literature and Technology of Research	√	√	√	√		√	√
	SEC-B-4-2: Applied Bengali Literature – II							
THIRD YEAR SEMESTER IV (6 Months)	CC-5-11: Types of Literature							
	CC-5-12: Drama and Theatre	√	√	√	√		√	
THIRD YEAR	DSE-A-5-1: Social and Cultural History of Bengal							
	DSE-A-5-2: Literature of Bangladesh							

SEMESTER V (6 Months)	DSE-B-5-1: Juvenile and Adolescent Literature							
	DSE-B-5-2: Partition and Bengali Literature	√	√	√		√		√
	CC-6-13: Modern Poems	√		√	√			
	CC-6-14: History of Literature (Sanskrit, English, Hindi)	√	√			√		
	DSE-A-6-3: Detective, Science Fiction and Supernatural stories and novels	√		√	√			
	DSE-A-6-4: Comparative Literature	√	√	√				
	DSE-B-6-3: Biography, Autobiography and Travelogue							
	DSE-B-6-4: Folk Culture and Literature							


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DINABANDHU ANDREWS COLLEGE

AFFILIATED TO UNIVERSITY OF CALCUTTA

Department of Sanskrit

UNDERGRADUATE SECTION

Model Reference: University of Calcutta, Syllabus for Sanskrit General (CBCS)

[with effect from July 2018 (2018-19)] (Notification No. CSR/12/18)

PROGRAMME OUTCOME OVERVIEW OF B.A. IN SANSKRIT LITERATURE

Programme Outcome Nos	Programme Outcome (PO)
PO A	<ul style="list-style-type: none">Presenting educational opportunities that steer students toward the humanistic and scientific study of Sanskrit .
PO B	Providing a setting in which students can learn the language so that their usage and conversational abilities can be evaluated.
PO C	<ul style="list-style-type: none">Assist in moulding students' cognitive, emotive, and behavioural skills to develop responsible academic professionals and researchers.
PO D	<ul style="list-style-type: none">Introducing the concept of Seva (service) to the kids so they can participate in the changing of society.
PO E	<ul style="list-style-type: none">Understanding how to apply traditional Indian knowledge to modern problem-solving scenarios.Teaching moral principles and ideas from classic literature that are ageless and relevant to modern culture.

Programme Specific Outcomes Nos	Programme Specific Outcomes (PSO)
PSO 1	<ul style="list-style-type: none">Must be able to appreciate the significance of language as the essential building block of communication as an art and skill.Basic LSRW (Listening, Speaking, Reading, and Writing) communication abilities in understanding Sanskrit.To be able to connect language and culture and to get ready for the idea that linguistics and cultural theories would be required for higher education in the future.

PSO 2	<ul style="list-style-type: none"> • Ability to adjust in particular domains. • Application of critical thinking while connecting ideas to individual experiences. • Application of traditional wisdom and Shastric discipline when making distinctions amongst people.
PSO 3	<ul style="list-style-type: none"> • Elucidation of concepts, creative writing, originality, and proficient delivery abilities in Sanskrit, English, and other original Indian languages. • Gaining self-assurance to investigate and learn about different Indian sciences. • Capacity to confidently investigate the sciences of ancient India.
PSO 4	<ul style="list-style-type: none"> • Developing competencies to spread awareness of Indian knowledge and wisdom throughout society.

Mapping of PO & PSO for Sanskrit Gen (UNDER CBCS) Syllabus of 2018-19 of CU.

PSO	PO				
	A	B	C	D	E
1	✓	✓		✓	
2	✓		✓	✓	✓
3	✓	✓		✓	
4	✓			✓	✓

Programme Outcome for Partial Semester wise Courses in Sanskrit Gen 2018-19 under University of Calcutta

TABLE I

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
SEMESTER 1 6 Months	CC -A 1 Sanskrit Poetry	✓	✓	✓	✓	
SEMESTER 2 6 Months	CC- A 2 Sanskrit prose	✓	✓		✓	

TABLE II

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
SEMESTER 3 6 Months	CC - A 3 Sanskrit drama	✓	✓	✓	✓	
	SEC-A-1 Basic Sanskrit	✓	✓	✓	✓	
SEMESTER 3 6 Months	CC-A 4 Sanskrit grammar	✓	✓	✓	✓	
	SEC-B-1 Spoken Sanskrit & computer awareness for Sanskrit	✓	✓	✓	✓	

TABLE III

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
SEMESTER 5 6 Months	DSE- 1 Philosophy, Religion, and Culture in Sanskrit Tradition	✓	✓	✓	✓	
	DSE-2 Indian perspectives in Personality Development	✓	✓	✓	✓	
	SEC-A-2 Basic Elements of Ayurveda	✓	✓	✓	✓	
SEMESTER 6 6 Months	DSE-3 Literary Criticism	✓	✓		✓	
	DSE-4 Nationalism in Sanskrit Literature	✓	✓	✓	✓	
	SEC-B-2 Yogasutra of Patanjali	✓	✓	✓	✓	

DINABANDHU ANDREWS COLLEGE

AFFILIATED TO UNIVERSITY OF CALCUTTA

Department of English

UNDERGRADUATE SECTION

Model Reference: University of Calcutta, Syllabus for English (Advanced) (CBCS)

[with effect from July 2018 (2018-19)] (Notification No. CSR/12/18)

PROGRAMME OUTCOME OVERVIEW OF B.A. IN ENGLISH LITERATURE

Programme Outcome Nos	Programme Outcome (PO)
PO A	<ul style="list-style-type: none">To impart to the learners a clear concept of 'Literatures in English', that is, the diversification of English Literatures along different geographical zones, and to ensure their advanced-level acquaintance with these.English as a literary language of diverse literatures, and also English as a firm linguistic basis for Skill Enhancement in several areas of life and livelihood.
PO B	<ul style="list-style-type: none">To ensure that the learners get acquainted with mediation of the specific history and culture of such zones, the political, economic and cultural contexts of such manifested diversity, through the study of British and other European literatures, Indian and other Asian literatures, as well as American, African and Australian literatures in English or in English translations.To acquaint the learner with the history of English as a contemporary global language and the also the construction of power as a concomitant factor.
PO C	<ul style="list-style-type: none">To ensure the acquaintance of learners with the foundational texts of European Literature. (As in the texts of CCII).To make sure that the learners also connect firsthand with the early literature of Britain. (As in the texts of CC IV).To acquaint learners with British Literature of the period of Britain's colonial expansion— the 'Empire'— right up to the present, with a stress on the postcolonial. (As in the texts of papers CC-VII, VIII, IX, X and XII)
PO D	<ul style="list-style-type: none">To help the learners understand the specific usage of English as medium of effective everyday communication, as also the use of English as a language of creativity.

PO E	<ul style="list-style-type: none"> To equip the learners not only with workable linguistic skills, but also with an in-depth understanding of how the workings of society and culture interpermeate with any literature of a given space and time. Acquaintance with such temporal and spatial dimensions would help them with the skill of profoundly evaluating not only literature, but also its firm connection with the world and the expanse of life processes. Aims also include the development of skills to handle academic stylistics, business communication, and also creative writing skills so that the learners can diversify along a variety of career choices, armed with considerable employment potential.
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Programme Specific Outcome Nos	Programme Outcome (PO)
PSO 1	<ul style="list-style-type: none"> Graduates of the program should be proficient in analyzing and interpreting a diverse range of literary works, demonstrating a deep understanding of literary theories and critical perspectives. They should be able to evaluate the cultural, historical, and social contexts of literary texts, and articulate their insights effectively through oral and written communication.
PSO 2	<ul style="list-style-type: none"> Students should develop strong communication skills, both written and oral. This includes the ability to express ideas clearly and persuasively, adapting communication styles to different audiences and purposes. Graduates should be proficient in academic writing, creative expression, and professional communication, demonstrating mastery of the English language in various contexts.
PSO 3	<ul style="list-style-type: none"> Graduates should be adept at conducting independent research in the field of English literature. This involves the ability to formulate research questions, gather and critically evaluate relevant sources, and synthesize information to produce scholarly work. They should be familiar with different research methodologies and ethical considerations related to academic inquiry.
PSO 4	<ul style="list-style-type: none"> The program should equip students with a broad understanding of the global and cultural dimensions of literature. Graduates should be able to recognize and appreciate diverse perspectives, identities, and traditions reflected in literary works. This cultural awareness should extend to an understanding of the role of literature in shaping and reflecting societal values, fostering empathy and tolerance.

Mapping of PO & PSO for English Hons Syllabus of 2018 of the University of Calcutta

PSO	PO
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	A	B	C	D	E
1	√	√	√	√	√
2	√	√	√	√	√
3	√	√	√	√	√
4	√	√	√	√	√

Programme Outcome for Partial Semester wise Courses in English Honours under University of Calcutta

TABLE I

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
SEMESTER 1 CC 1 & 2 CC1 – <u>History of Literature And Philology</u> CC2 –European Classical Literature	CC1 Group A: History of Literature					
	Group B: Philology	√	√	√	√	√
	CC 2 Group A: Social and intellectual background	√	√	√	√	√
	Group B: Homer, Sophocles,	√	√	√	√	√
	Group C: Ovid, Plautus , Horace	√	√	√	√	√
	AECC1 CREDITS					
AECC1 (Communicative English/MIL),	<ul style="list-style-type: none"> • Correction of sentences • Transformation (Simple, Complex and Compound Sentences; Degrees of Comparison; Affirmative and Negative Sentences; Interrogative and Assertive Sentences; Exclamatory and Assertive Sentences) • Identifying True/False Statements from Given Passages 			√	√	√

TABLE II

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
<u>Semester II</u> CC III: <u>Indian Writing in English</u>	CC III Poetry: Derozio, Toru Dutt, Kamala Das, A.K. Ramanujan , Nissim Ezekiel, JayantaMahapatra	√	√	√	√	√
	Novel Bankimchandra Chattopadhyay: <i>Rajmohan's Wife</i>	√	√	√		√
	Drama Mahesh Dattani, <i>Bravely Fought the Queen</i>	√	√	√		√
	CCIV					
	Social and Intellectual Background	√	√	√		√

CC IV: British Poetry And Drama (14th – 17th Century):	Poetry: Geoffrey Chaucer, Edmund Spenser, William Shakespeare, Sonnets, John Donne, Andrew Marvell	√	√	√		√
	Drama: Christopher Marlowe, William Shakespeare	√	√	√		√

TABLE III

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
Semester III	CC V					
CC V American Literature	Poetry: Robert Frost, Walt Whitman, Sylvia Plath, Langston Hughes, Edgar Allan Poe	√	√	√	√	√
	Novel: Ernest Hemingway, <i>The Old Man and the Sea</i>	√	√	√	√	√
	Stories Edgar Allan Poe, F. Scott Fitzgerald, William Faulkner	√	√	√	√	√
	Drama: Arthur Miller, <i>Death of A Salesman</i>	√	√	√	√	√
	CC VI					
	CC VI: Popular Literature	Lewis Carroll, Agatha Christie, Sukumar Ray, Herge	√	√	√	√
CC VII: British Poetry And Drama (17th – 18th Century Popular Literature	CC VII					
	Poetry John Milton, Alexander Pope	√	√	√	√	√
	Drama John Webster: <i>The Duchess of Malfi</i> Aphra Behn: <i>The Rover</i>	√	√	√	√	√



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TABLE IV

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
Semester IV 18th Century British Literature CC VIII	CC VIII					
	Social and Intellectual Background	√	√	√		√
	Poetry: Samuel Johnson, Thomas Gray,	√	√	√		√
	Drama William Congreve	√	√	√		√
	Prose (Fiction & Non-Fiction) Daniel Defoe, <i>Robinson Crusoe</i> Joseph Addison, 'Sir Roger at Home' and 'Sir Roger at Church'	√	√	√		√
CC IX British Romantic Literature	CC IX					
	Social and Intellectual Background	√	√	√		√
	Poetry William Blake, William Wordsworth, Samuel Taylor Coleridge,	√	√	√		√
	Percy Bysshe Shelley, John Keats,					
	Prose (Fiction & Non-Fiction) Charles Lamb: Essays; Mary Shelley: <i>Frankenstein</i>	√	√	√		√
CC X : 19th Century British Literature	CC X					
	Social and Intellectual Background	√	√	√		√
	Poetry Lord Tennyson, Robert Browning, Christina Rossetti, Matthew Arnold,	√	√	√		√
	Novel: Jane Austen /Charlotte Bronte; Charles Dickens/ Thomas Hardy	√	√	√		√

TABLE V

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
Semester V CC XI: Women's Writing	CC XI					
	Fiction Alice Walker/ Emily Bronte; Mahasweta Devi, 'Draupadi', translated GayatriChakravortySpivak; Katherine Mansfield	√	√	√		√

CC XII: Early 20th Century British Literature	Non-Fiction Mary Wollstonecraft, <i>A Vindication of the Rights of Woman</i> , Chapters I & II Rassundari Devi, <i>Amar Jiban</i>	√	√	√		√
	CC XII					
	Social and Intellectual Background	√	√	√		√
	Poetry: T.S. Eliot; W.B. Yeats; Wilfred Owen	√	√	√		
	Fiction Joseph Conrad; D.H. Lawrence,	√	√	√		√
	Drama: George Bernard Shaw	√	√	√		√
	DSE-A1					

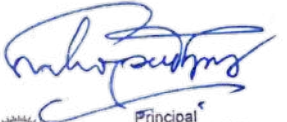
DSE-A1 – Modern Indian Writing In English Translation	Stories Munshi Prem Chand; Ismat Chughtai; Fakir Mohan Senapati	√	√	√		√
	Poetry Rabindranath Tagore; G.M. Mukherjee; Amrita Pritam					
	Novel Rabindranath Tagore					
	Drama Vijay Tendulkar					
DSE-A2 - Literary Theory	DSE-A2					
	Literary Theory: Antonio Gramsci, 'The Formation of the Intellectuals' from <i>The Prison Notebooks</i> Virginia Woolf: <i>A Room of One's Own</i> Rabindranath Tagore: 'Nationalism in India'	√	√	√		√
	Literary Criticism William Wordsworth: 'Preface' to the <i>Lyrical Ballads</i> S.T. Coleridge: <i>Biographia Literaria</i> , Chapters XIII and XIV T.S. Eliot: 'Tradition and the Individual Talent'	√	√	√	√	√
DSE-B1						

DSE-B1– Literary Types, Rhetoric And Prosody	Group – A: Literary Types Tragedy (Tragic Hero, Catharsis, Heroic Tragedy, Chorus) Comedy (Romantic Comedy, Comedy of Humours, Comedy of Manners, Sentimental Comedy) Short Story	√	√	√		
	Group – B: Rhetoric		√	√	√	√
	Group – C: Prosody		√	√	√	√
DSE-B2 Contemporary India: Women And Empowerment	DSE-B2					
	Social Construction of Gender	√	√	√		
	History of Women's Movement in India (preindependence and post-independence)	√	√	√		
	Women and Law: Domestic Violence, Female Foeticide, Sexual Harassment	√	√	√		
	Dalit Women and Double Marginalisation	√	√	√		

TABLE VI

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
Semester VI	CC XIII					
CC XIII Modern European Drama	Henrik Ibsen; Bertolt Brecht; Samuel Beckett	√	√		√	√
CC14	CC XIV					
Postcolonial Literatures	Poetry: Pablo Neruda; Derek Walcott; David Malouf; Mamang Dai	√	√		√	√
DSE-A3 Partition Literature	DSE-A3					
	Novel: Amitav Ghosh: <i>The Shadow Lines</i>	√	√		√	√
	Short Stories: ProtivaBasu, Manik Bandyopadhyay, Sadat Hasan Manto	√	√		√	√
OR	Poetry SahirLudhianvi; Birendra Chattopadhyay; Sankha Ghosh	√	√	√	√	√

DSE-A4 Media And Communication Studies	DSE-A4					
	Introduction to Mass Communication		√		√	√
	Mass Communication and Globalisation	√	√	√	√	√
	Writing Pamphlets, Posters etc	√	√	√	√	√
DSE-B3 Autobiography OR	Advertisements and Creating Advertisements	√	√	√	√	√
	DSE-B3					
DSE-B4 Text And Performance	Rabindranath Tagore; Mahatma Gandhi; BinodiniDasi; Nirad C. Chaudhuri	√	√	√		√
	DSE-B4					
	Historical Overview of Indian and Western Theatre	√	√	√	√	√
		√	√	√	√	√
	Classical, Modern and Contemporary Theatres Historical Developments of Theatrical Forms	√	√	√	√	√
	Folk Traditions	√	√	√	√	√


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Department of History

UNDERGRADUATE SECTION

Model Reference: University of Calcutta, Syllabus for History (Advanced) (CBCS)

[with effect from July 2018 (2018-19)] (Notification No. CSR/12/18)

PROGRAMME OUTCOME OVERVIEW OF B.A. IN HISTORY

Programme Outcome Nos	Programme Outcome (PO)
PO A	<ul style="list-style-type: none">The students are encouraged to understand the importance of sources, such as, archaeological, literary, numismatic, epigraphic, as tools of history to study and construct the past in proper historical perspective.
PO B	<ul style="list-style-type: none">Study of historiography is also emphasized that exposes the learner to plethora of historical interpretations, thereby developing their power of critical thinking and critical analysis in change –continuity perspective.
PO C	<ul style="list-style-type: none">The programme equips the learner to study the linkages between state formation and social stratification, religion and the rise of empires in ancient, medieval India and Europe. It encourages the students to delve deep into the dynamics of social change such as urbanization, transformative power of knowledge system such as science and environment.
PO D	<ul style="list-style-type: none">As the CBCS Curriculum has introduced the study of Museums and Archives, students now get an opportunity to know about the importance of these institutions that are repositories of documents and material remains of the past. It has brought cultural heritage with in the ambit of mainstream academic discourse and has added a new dimension for the learners to acquaint themselves with the knowledge of archaeology, museology and archival studies.

Programme Specific Outcome Nos	Programme Outcome (PO)
PSO 1	<ul style="list-style-type: none">An important subject specific outcome of the three year UG course in History is to make students aware that history as an academic discipline is not just to know the past but to become aware that the only thing constant in human civilisation is Change.

PSO 2	<ul style="list-style-type: none"> The curriculum is so designed that a learner acquires both intensive and extensive knowledge about the mechanism of changes that are brought about in polity, economy, society and culture both in India and many other parts of the world such as Europe, China, Japan etc.
PSO 3	<ul style="list-style-type: none"> On completion of the course a learner is expected to have acquired the power of rational thinking and the knowledge of using historical tools such as literary sources, texts, newspapers historiographical trends, to critically examine any historical event or movement.
PSO 4	<ul style="list-style-type: none"> Emphasis on interdisciplinary approach in the curriculum offers immense scope to the learners to enhance their knowledge about the political, economic, social, and cultural developments of India since pre-historic times and also of some other world civilisations. It therefore enables them to acquire a strong foundation in social science.


Mapping of PO & PSO for History Hons Syllabus of 2018 of the University of Calcutta

PSO	PO			
	A	B	C	D
1	√	√	√	√
2	√	√	√	√
3	√	√	√	√
4	√	√	√	√

Programme Outcome for CBCS Semester wise Courses in History Honours 2018-19 under University of Calcutta.

TABLE-I

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME			
		A	B	C	D
SEMESTER I 2018 (July to December) Hons, CC- 1	HISTORY OF INDIA FROM THE EARLIEST TIMES TO C 300 BCE	√	√	√	


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CC- 2	SOCIAL FORMATIONS AND CULTURAL PATTERNS OF THE ANCIENT WORLD OTHER THAN INDIA	√	√	√	√
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TABLE-II

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME			
		A	B	C	D
SEM-II 2019 (January to June) CC-3	HISTORY OF INDIA C 300BCE TO C750CE	√	√	√	
CC-4	SOCIAL FORMATIONS AND CULTURAL PATTERNS OF THE MEDIEVAL WORLD OTHER THAN INDIA	√	√	√	√

TABLE-III

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME			
		A	B	C	D
SEM III 2019 (July to December) CC- 5	HISTORY OF INDIA CE 750 - 1250	√	√	√	√
CC- 6	RISE OF THE MODERN WEST-I	√	√	√	√
CC- 7	HISTORY OF INDIA CE 1206- 1250	√	√	√	√

SEC-A (I)	ARCHIVES AND MUSUEM	√	√	√	√
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TABLE-IV


COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME			
		A	B	C	D
SEM-IV 2020 (January – June) CC-8	RISE OF THE MODERN WEST-II	√	√	√	√
	HISTORY OF INDIA C 1526 - 1605	√	√	√	√
CC-9	HISTORY OF INDIA C 1605- 1765	√	√	√	√
CC-10	ART APPRECIATION:AN INTRODUCTION TO INDIAN ART	√	√	√	√
SEC-B(2)					

TABLE-V

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME			
		A	B	C	D
SEM-V 2020 (July to December) CC-11	HISTORY OF MODERN EUROPE (1780 – 1939)	√	√	√	√
	HISTORY OF INDIA (1750 – 1857)	√	√	√	√
DSE –A-1	HISTORY OF BENGAL (1757- 1905)	√	√	√	√
DSE-B-1	HISTORY OF MODERN EAST ASIA-I-CHINA (1840-1949)	√	√	√	√

TABLE VI

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME			
		A	B	C	D
SEM-VI 2021 (January to June) CC-13	HISTORY OF INDIA (1857 – 1964)	√	√	√	√
	CC-14 HISTORY OF WORLD POLITICS (1945– 1994)	√	√	√	√
DSE –A-3	HISTORY OF BENGAL (1905- 1947)	√	√	√	√
DSE-B-3	HISTORY OF MODERN EAST ASIA-II-JAPAN (1868-1945)	√	√	√	√


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Department of Philosophy

UNDERGRADUATE SECTION

Model Reference: University of Calcutta, Syllabus for Philosophy (Advanced) (CBCS)

[with effect from July 2018 (2018-19)] (Notification No. CSR/12/18)

PROGRAMME OUTCOME OVERVIEW OF B.A. IN PHILOSOPHY

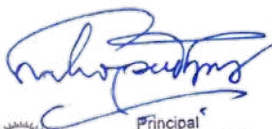
Programme Outcome Nos	Programme Outcome (PO)
PO A	<ul style="list-style-type: none">To help thinking logically and inculcate critical skills in the students. To enhance analysing skills thereby pursuing correct way of thoughtIt helps considering different proposed solutions taking into account probability and certainty in concerned areas. To broaden the mental, moral, social and religious perspectives of life thus benefitting students.....spiritually, intellectually and morally
PO B	<ul style="list-style-type: none">To guide young minds towards the systems of Indian Philosophy. To enhance their ability to think openheartedly and be sensitive and tolerant towards the ideas and thoughts of other people and systems.The ability to argue with valid arguments.Indian Philosophy refers to ancient philosophical traditions of the Indian subcontinent. It covers the whole field of life. The principal schools are introduced with a classification of orthodox and heterodox schools.
PO C	<ul style="list-style-type: none">To acquaint learners with Psychology as the science of behaviour and mind. To explore behaviour and mental processes such as perception, cognition, attention, intelligence, personality and more such traits.
PO D	<ul style="list-style-type: none">To widen the horizon of knowledge for the learners.It aims to acquaint the learner with the varied societal forms and structures, as well as with the different political ideals of justice, liberty and equality.
PO E	<ul style="list-style-type: none">To acquaint learners with the rich variety of ancient, medieval, modern and contemporary western thought.
PO F	<ul style="list-style-type: none">To incorporate the diversity of information with which students are confronted both in their theoretical and practical work.To develop the basis for reflection, analysis and formulation of the laws ensuring right way of thinking.
PO G	<ul style="list-style-type: none">To accustom students with different questions of life based on one's personal experience and the experience of others and help them in a critical and systematic way to connect to moral philosophy.

	<ul style="list-style-type: none"> Students are encouraged to study three different types of questions within Ethics: normative, meta-ethics and practical ethics which are directly linked with empirical matters.
PO H	<ul style="list-style-type: none"> To acquaint learners with philosophical study of meaning and nature of religion. It includes analysis of religious concepts, beliefs, terms, arguments and practices of religious adherents. Different arguments for as well as against the existence of GOD are introduced and critically discussed.

Programme Specific Outcomes Nos	Programme Specific Outcomes (PSO)
PSO 1	<ul style="list-style-type: none"> To inculcate logical insight and develop impartial, wider, humane understanding of a situation which will benefit the society. To be aware of our rich philosophical heritage. To develop tolerance towards other's views and assess /judge any theory openheartedly.
PSO 2	<ul style="list-style-type: none"> To have a scientific knowledge base in Psychology. To generate awareness about scientific inquiry and critical thinking. To enable learners in understanding and engaging in behavioural patterns.
PSO 3	<ul style="list-style-type: none"> To enhance awareness in learners as social beings. To encourage critical thinking regarding different socio-political movements. To build up strong notion of freedom, duty and rights.
PSO 4	<ul style="list-style-type: none"> To accustom all of the major areas of philosophy with other relevant fields of study including theology, sociology, psychology, history and the natural sciences. To focus on religious language and belief, religious diversity, concepts of God/ Absolute Reality, arguments for and against the existence of God and problems of evil, sufferings and miracle.

Mapping of PO & PSO for Philosophy Advanced Syllabus of 2018 of the University of Calcutta

PSO	PO				
	A	B	C	D	E
1	√	√	√	√	√
2	√	√	√	√	√
3	√	√	√	√	√
4	√	√	√	√	√


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Programme Outcome for Partial Semester wise Courses in PHILOSOPHY Advanced 2018 under University of Calcutta

TABLE I

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
SEMESTER 1 CC 1 & 2						
	CC-1 Introduction, Nastika & Astika Schools (Nyaya-Vaisesika Schools)	√	√	√	√	√
	CC2- History of Western Philosophy-1 CC 2 a) Pre-Socratic Philosophy b) Plato, Aristotle c) St. Thomas Aquinas d) Descartes e) Spinoza f) Leibnitz	√	√	√	√	√

TABLE II

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
Semester II	CC III					
	Samkhya_Yoga	√	√	√	√	√
	Mimamsa	√		√		√
CC III: Outlines of Indian Philosophy II	<i>Advaita Vedanta and Visistadvaita Vedanta</i>	√	√	√		√
	CCIV					
	Locke	√	√	√		√
CC IV: History of Western Philosophy II	Berkeley, Hume	√	√	√		√
	Kant	√	√	√		√

TABLE III

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
Semester III CC V: Philosophy of Mind	CC V					
	Psychology Definition , Nature and Scope	√	√	√	√	√
	Methods of Psychology	√	√	√	√	√

	Sensation, Perception, Learning	√	√	√	√	√
	Different theories of learning, Philosophical theories of Mind, Consciousness, Intelligence ,Personality	√	√	√	√	√
CC VI: Social and Political Philosophy	CC VI					
	Nature &, Scope of: Social philosophy Political Philosophy Relation between Social and Political Philosophy, Primary Concepts:Society ,Community,Association, Institution, Family: Nature, Different forms of family, Role of family in the society Social class and caste Theories regarding the relation between individual and society Individualistic theory Idealistic theory secularism Social change :Gandhi on social change Political Ideals	√	√	√	√	√
	CC VII					
	Nature and Scope of Philosophy of Religion Doctrine of Karma, Rebirth and Liberation	√	√	√	√	√
CC VII Philosophy of Religion	The Philosophical teachings of the Holy Quran: God the ultimate reality. HIS attributes, his relation to the world and man Some basic tenets of Christianity The doctrine of Trinity, The theory of redemption Religious pluralism, arguments for the existence of God.	√	√	√	√	√

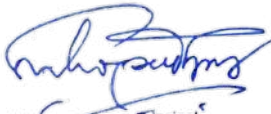
TABLE IV

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
Semester IV Western Logic1 CC VIII	CC VIII					
	Logic, Argument,Deductive and Inductive Arguments	√	√	√		√
	Statements, Truth & validity, Propositions, its classes	√	√	√		√
	Inductive arguments, Mill's methods, Science and Hypothesis	√	√	√		√

CC IX Western LogicII	Probability: Alternative concepts, The probability Calculus.	√	√	√		√
	CC IX					
	Symbolic logic	√	√	√		√
	Formal proof of Validity	√	√	√		√
	Quantification	√	√	√		√
CC X WESTERNE PISTEMOL OGY AND METAPHYS ICS	CC X					
	Concepts Truth	√	√	√		√
	Sources of knowledge Some Principal uses of the verb “To Know” Conditions of propositional Knowledge, strong and weak sense of know. Analytic Truth and Logical possibility The apriori The problem of Induction Cause and Causal Principles Realism, Idealism, Phenomenalism,	√	√	√		√
		√	√	√		√

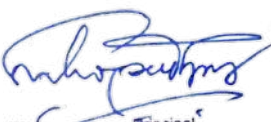
TABLE V

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
Semester V CC XI	CC XI					
	Nyaya Logic & Epistemology buddhi or jnana & it's four types	√	√	√		√
	Pratyaksa & Sannikarsa	√	√	√		√
Ethics (Indian SEM 6 CC 13)	CC XII					
	Introduction,, Meaning of Dharma, vidhi nisedha' Buddhist ethics and Jaina ethics.	√	√	√		√


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CC-XIII NYAYA LOGIC & EPISTEMOLOGY	CC-XIII Nyaya Logic & Epistemology					
CC XIV WESTERN ETHICS	Anumana	√	√	√		
	Upamana, Sabda Pramana	√	√	√		√
	Logical Reasoning and Application Indian & Western	√	√	√		√
SEC A - EMERGING TRENDS OF THOUGHT	Business Ethics			√		
	Feminist Philosophy					
	Peace Studies					
SEC-B BUSINESS ETHICS						
SEC-C FEMINISM						
	DSE-G 1					
SEC-D PEACE STUDIES	c Sat, Dravya, Paryaya, Syadvada Samkhya, yoga, mimamsa selected topics		√	√		√
SEC E- RECENT TRENDS IN ETHICS	A. Swami Vivekananda: nature of man. Nature of Religion B. Ideal of Universal Religion, Practical Vedanta C. Gandhi: Nature of man, Non-violence, Satyagraha, theory of trusteeship D. Ambedkar : Critique of Social evils, Dalit Movement.	√	√	√	√	√
DSE-G1- INDIAN PHILOSOPHY						
	Original Development of Feminist Thought	√	√	√		
DSE-G2 Contemporary Indian thought:	Philosophical basis of Feminism		√	√	√	√
	Different Branches of Feminism& important issues		√	√	√	√

DSE- G 3 FEMINISM	Bioethics	√	√	√		
	Introduction and understanding ethics and bioethics	√	√	√		
	Human dignity and Human rights.	√	√	√		
DSE G4 Emerging Trends of THOUGHT	Principles of benefits and harm Autonomy consent and privacy. Autonomy & individual responsibility, health and responsibility	√	√	√		


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Department of Political Science

UNDERGRADUATE SECTION

Model Reference: University of Calcutta, Syllabus for Political Science (Advanced) (CBCS)

[with effect from July 2018 (2018-19)] (Notification No. CSR/12/18)

PROGRAMME OUTCOME OVERVIEW OF B.A. IN POLITICAL SCIENCE

Programme Outcome Nos	Programme Outcome (PO)
PO A	<ul style="list-style-type: none">To familiarize students with politics as a dynamic field and the significant shifts in its theory, practice, and content over the past few decades. To be able to serve as a "launching pad" for students who want to get a thorough understanding of the major theoretical, empirical, and methodological questions as well as the primary points of contention in the intricate and dispersed field of political science.
PO B	<ul style="list-style-type: none">To familiarize students with the political procedures and the Indian Constitution.To familiarize students with the structural issues behind the formation of the systems of institutions that make up the modern Indian state and the actual functioning of these institutions during the roughly seventy-three years after independence.
PO C	<ul style="list-style-type: none">To familiarise learners with the constitutional processes of different countries of the world with special reference to the constitutions of UK, USA and China; along with a discussion of the constitutions of countries like Switzerland and Bangladesh.
PO D	<ul style="list-style-type: none">To familiarise learners with the various opposing ideas of Indian political thinkers from the ancient times to the present.To acquaint learners, to a broader extent, with the Indian national freedom struggle launched by the Indian National Congress along with the ideas of the leading stalwarts of the times like Savarkar, Jinnah, Ambedkar, Subhas Bose, Phule etc.
PO E	<ul style="list-style-type: none">To familiarize learners with the study of various theoretical dispositions of International Relations both as a separate discipline as well as with the idea of global politics which is relevant to the contemporary world affairs along with a special emphasis on Foreign Policies.
PO F	<ul style="list-style-type: none">To familiarize learners with the interdisciplinary nature and scope of the subject matter of Political Science – its pertinence to Sociology (a key sister discipline).To enrich learners with some of the sub themes and issues related to the allied subject of Sociology that is relevant to Political Science – like Political Culture, Socialisation, Caste, Class, Elites, Gender etc.

PO G	<ul style="list-style-type: none"> To familiarise learners with the political thought in the West – beginning from ancient Greece and Rome (the lands of origin of classical western political thought) through medieval political thinkers whose vast contributions have paved the ways for modern Western political thinking of the contemporary times. To introduce learners to the various ‘ideas and ideologies like liberalism, justice, democracy etc.
PO H	<ul style="list-style-type: none"> To familiarise learners with the ‘actual’ and ‘practical’ decision making process of government – How ‘government in action’ attempts to grapple with problematic of administration and how the government deals with the crises the in different regimes across the world. Learners also get a detailed overview of the of the Indian State and its administrative instrument dealing with problems like poverty, disease, unemployment, and corruption.

Programme Specific Outcomes Nos	Programme Specific Outcomes (PSO)
PSO 1	<ul style="list-style-type: none"> To be able to understand the ‘actual’ and ‘practical’ workings of politics and the way states, structures, systems, institutions and organizations around the world deal with the issues confronting them. Such a study will help to understand that political thought, theory, thinking and ideologies in different countries take shape, and are to a great deal, influenced by the countries and regimes to which they belong.
PSO 2	<ul style="list-style-type: none"> To explore the historical backgrounds and origins of contemporary thinkers and discourses. Such historical exploration helps set the precedent for further understanding of the present.
PSO 3	<ul style="list-style-type: none"> To learn the nature and ever-changing dynamics of the current world in which we live. Such training will help learners understand the ‘raison d’etre’ of the policies, actions and manipulations of policy makers, leaders and decision makers in today’s world.
PSO 4	<ul style="list-style-type: none"> To be able to comprehend the inter-linkages between various social science disciplines and the way they come together to throw a better and more focused light on the problems man encounters in his day-to-day life.

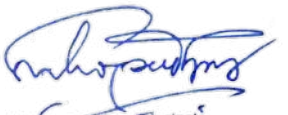
Mapping of PO & PSO for Political Science Hons Syllabus of 2018-19 of CU.

PSO	PO							
	A	B	C	D	E	F	G	H
1	√	√	√	√	√	√	√	√
2		√	√		√		√	
3	√	√		√	√	√		√
4				√	√	√		√

**Programme Outcome for Partial Semester wise Courses in Political Science Advanced
2018 under University of Calcutta**

TABLE I

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)							
		A	B	C	D	E	F	G	H
Semester I- 6 Months	<p>Understanding Political Theory: Concepts Code: PLS-A-CC-1-1- TH+TUModule I:</p> <p>1. Conceptualising politics: meaning of <i>political</i>. 2. Key concepts I: State; Nation; Sovereignty (evolution); Power and Authority--- types and linkages; 3. Key concepts II: Law. Liberty, Equality-- interrelationships.</p>	√							


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	<p>Module II:</p> <p>4. Key concepts III: Rights; Justice (with special reference to Rawls); Freedom.</p> <p>5. Key concepts IV: Democracy (with special reference to David Held); Authoritarianism.</p> <p>6. Key concepts V: Citizenship.</p> <p>Understanding Political Theory: Approaches and Debates Code: PLS-ACC-1-2-TH+TU</p> <p>Module I:</p> <p>1. Approaches I: Normative; Legal Institutional; Empirical-Behavioural-- Systems Analysis; Structural Functionalism.</p> <p>2. Approaches II: Liberalism; Social Welfarism; Neo-Liberalism.</p> <p>3. Approaches III: Postcolonial; Feminist.</p> <p>Module II:</p> <p>4. Marxian approach--- Dialectical Materialism and Historical Materialism.</p> <p>5. Key ideas: State (focus on Relative Autonomy); Class and Class Struggle; Surplus Value; Alienation.</p> <p>6. Party--- Democratic Centralism; Lenin Rosa Luxemburg debate; Revolution--- Lenin and Mao. Hegemony and Civil Society: Gramsci.</p>	√						
<p>Semester II 6 Months</p>	<p>Semester II Constitutional Government in India Code: PLS-A-CC-2-3-TH+TU</p>							

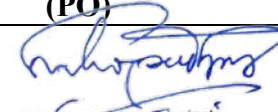
	<p>Module I:</p> <p>1.Evolution of the Indian Constitution. Role of the Constituent Assembly--- debates (overview). The Preamble. 2.Citizenship. Fundamental Rights and Duties. Directive Principles. 3.Nature of Indian Federalism: Union-State Relations. 4.Union Executive: President, Vice-President: election, position, functions (focus on Emergency Powers), Prime Minister, Council of Ministers, relationship of Prime Minister and President.</p> <p>Module II:</p> <p>5.Union Legislature: Rajya Sabha, Lok Sabha: Organisation, Functions – Lawmaking procedure, Parliamentary procedure, Privileges, Committee system. Speaker. 6.Government in states: Governor, Chief Minister and Council of Ministers: position and functions – State Legislature: composition and functions. 7.Judiciary: Supreme Court and the High Courts: composition and functions – Judicial activism. 8.Constitutional amendment. Major recommendations of National Commission to Review the Working of the Constitution.</p> <p>Politics in India:Structures and ProcessesCode: PLS-A-CC-2-4-TH+TU</p> <p>Module I:</p> <p>1.Party system: features and trends – major national political parties in India: ideologies and programmes. Coalition politics in India: nature and trends. Political parties in West Bengal:</p>		√					
			√					
			√					

	<p>Overview.</p> <p>2. Electoral process: Election Commission: composition, functions, role. Electoral reforms.</p> <p>3. Role of business groups, working class, peasants in Indian politics.</p> <p>Module IV:</p> <p>4. Role of (a) religion (b) language (c) caste (d) tribe.</p> <p>5. Regionalism in Indian politics.</p> <p>6. New Social Movements since the 1970s: (a) environmental movements (b) women's movements (c) human rights movements.</p>							
<p>SEM III 6 Months</p>	<p><u>Semester III</u></p> <p>Indian Political Thought– I Code: PLS-A-CC-3-5-TH+TU Module I:</p> <p>1 Ancient Indian Political ideas: overview.</p> <p>2. Kautilya: Saptanga theory, Dandaniti, Diplomacy.</p> <p>3. Medieval political thought in India: overview (with reference to Barani and AbulFazal). Legitimacy of kingship.</p> <p>4. Principle of Syncretism.</p> <p>Module II:</p> <p>5. Modern Indian thought: Rammohun Roy as pioneer of Indian liberalism – his views on rule of law, freedom of thought and social justice.</p> <p>6. Bankim Chandra Chattopadhyay, Vivekananda and Rabindranath Tagore: views on nationalism.</p>				√			

	<p>7.M.K. Gandhi: views on State, Swaraj, Satyagraha.</p> <p>Comparative Government and Politics Code: PLS-A-CC-3-6- TH+TU</p> <p>Module I:</p> <ol style="list-style-type: none"> 1. Evolution of Comparative Politics. Scope, purposes and methods of comparison. Distinction between Comparative Government and Comparative Politics. 2. Major approaches to the study of comparative politics---Institutional approach (dominant schools: Systems approach and Structural Functional approach)---limitations; New Institutionalism, Political Economy--- origin and key features. 3. Development and democratization: S.P. Huntington. 4. Classification of political systems. Nature of liberal and socialist political systems; distinguishing features--- conventions, rule of law (UK), separation of powers, checks and balances, judicial review (USA), democratic centralism (PRC), referendum, initiative (Switzerland). 5. Political Parties: Typology, features and roles (UK, USA, PRC and Bangladesh). Interest groups: roles (UK and USA). <p>Module II:</p> <ol style="list-style-type: none"> 6. Unitary system: UK, Bangladesh. Federal system: USA, Russia. 							
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	<p>7. Legislature in UK, USA and PRC: composition and functions of legislative chambers; Committee System in UK and USA</p> <p>8. Executive in UK, USA, France and Russia: A comparative study of (i) Russian, French and American Presidency; (ii) British and French cabinet systems.</p> <p>9. Judiciary in UK, USA and PRC (with focus on the Procuratorate): comparative study.</p> <p>10. Rights of the citizens of UK, USA and PRC: A comparative study.</p> <p>Perspectives on International Relations Code: PLS-A-CC-3-7-TH+TU</p> <p>Module I:</p> <p>1. Understanding International Relations: outline of its evolution as academic discipline.</p> <p>2. Major theories: (a) Classical Realism and Neo-Realism (b) Dependency (c) World Systems theory.</p> <p>3. Emergent issues: (a) Development (b) Environment (c) Terrorism (d) Migration.</p> <p>Module II:</p> <p>4. Making of foreign policy.</p> <p>5. Indian foreign policy: major phases: 1947-1962; 1962-1991; 1991-till date.</p> <p>6. Sino-Indian relations; Indo-US relations.</p>			√				
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COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)
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SEM-IV 6Months	<p>Semester IV Indian Political Thought II Code: PLSA-A-CC-4-8-TH+TU</p> <p>Module I:</p> <p>1. M.N. Roy: Radical Humanism. 2. Narendra Deva, Ram Manohar Lohia, Jayaprakash Narayan: Socialist ideas 3. Syed Ahmed Khan and Iqbal: views on colonialism and nationalism.</p> <p>Module II:</p> <p>4. Nehru: views on Socialism and Democracy. Subhas Chandra Bose: views on Socialism and Fascism. 5. Contested notions of 'nation'--- Savarkar, Jinnah. 6. Jyotiba Phule and Ambedkar on caste system and untouchability. Pandita Ramabai's views on social justice</p> <p>Global Politics since 1945 Code: PLS- ACC-4-9-TH+TU</p> <p>Module I:</p> <p>1. Cold War and its evolution: outline. Emergence of Third World: NAM; Pan Africanism. Post-Cold War world: overview. Globalization: conceptions and perspectives. 2. Europe in transition: European Union,</p>	A	B	C	D	E	F	G	H
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	<p>Brexit (overview).</p> <p>3. Major institutions of global governance: World Bank, IMF, WTO--- overview. Major regional organizations: ASEAN, OPEC, SAFTA, SAARC and BRICS. West Asia and the Palestine question.</p> <p>Module II:</p> <p>4. India and her neighbours I: Pakistan; Bangladesh.</p> <p>5. India and her neighbours II: Nepal; Bhutan; Sri Lanka.</p> <p>6. UNO: background; Major organs--- General Assembly, Security Council and Secretariat (with focus on Secretary General). Role of UNO in peace-keeping, human rights, and development (Millennium Development Goals and Sustainable Development Goals).</p> <p>WESTERN POLITICAL THOUGHT AND THEORY I Code: PLS-A-CC-4-10-TH+TU</p> <p>Module I:</p> <p>1. Greek political thought: main features – Plato: justice, communism – Aristotle: state, classifications of constitutions.</p> <p>2. Roman political thought: theories of Law and Citizenship – contributions of Roman thought.</p> <p>3. Medieval political thought in Europe: major features.</p> <p>4. Contribution of Machiavelli. Significance of Renaissance. Political thought of Reformation.</p> <p>Module II:</p> <p>5. Bodin: Idea of Sovereignty.</p> <p>6. Hobbes: founder of science of materialist politics.</p> <p>7. Locke: founder of Liberalism. views on natural rights, property and consent.</p> <p>8. Rousseau: views on freedom and</p>								
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SEM V 6Months	democracy.								
	<p>WESTERN POLITICAL THOUGHT AND THEORY II Code: PLS-A-CC-5-11-TH+TU</p> <p>Module I:</p> <ol style="list-style-type: none"> 1. Bentham: Utilitarianism. John Stuart Mill: views on liberty and representative government. 2. Hegel: Civil Society and State. 3. T. H. Green: Freedom, Obligation. <p>Module II:</p> <ol style="list-style-type: none"> 4. Utopian and Scientific Socialism: basic characteristics. 5. Varieties of non-Marxist socialism: Fabianism, Syndicalism, Guild Socialism. 6. Anarchism: overview. 7. Cultural Marxism: Frankfurt School (overview). Post-Marxism: emergence and basic contentions. <p>Political Sociology Code: PLS-A-CC-5-12-TH+TU</p> <p>Module I:</p> <ol style="list-style-type: none"> 1. Social bases of politics. Emergence of Political Sociology. 2. Political culture and Political socialization: nature, types and agencies. 3. Political participation: concept and types. 4. Political development and social change. 5. Political Communication: Concept and structures. <p>Module II:</p> <ol style="list-style-type: none"> 6. Social stratification and politics: caste, 					√			

SEM VI 6Months	<p>tribe, class, elite.</p> <p>7. Gender and politics: basic issues.</p> <p>8. Religion and politics: varying perspectives.</p> <p>9. Military and politics: conditions and modes of intervention.</p> <p>10. Electorate and electoral behaviour (with special reference to the Indian context).</p>						√		
	<p><u>Semester VI</u></p> <p>Public Administration-- Concepts and Perspectives Code: PLS-A-CC-6-13TH+TU</p> <p>Module I:</p> <p>1. Nature, Scope and Evolution of Public Administration – Private and Public Administration. Principles of Socialist Management.</p> <p>2. Challenges to discipline of Public Administration and responses: New Public Administration, Comparative Public Administration, Development Administration (Indian context).</p> <p>3. Major concepts of administration: (a) Hierarchy (b) Unity of Command (c) Span of Control (d) Authority (e) Centralization, Decentralization and Delegation (f) Line and Staff.</p> <p>4. Public Administration in the era of globalization, liberalization and privatization. Governance: conceptual emergence--- distinction with government. e-governance: features and significance.</p> <p>Module II:</p> <p>5. Bureaucracy: views of Marx and Weber.</p> <p>6. Ecological approach to Public Administration: Riggsian Model.</p> <p>7. Administrative Processes: (a) Decision</p>						√		√

	<p>making (b) Communication and Control (c) Leadership (d) Coordination.</p> <p>8. Public Policy: definition, characteristics. Models. Policy implementation.</p> <p>Administration and Public Policy in India Code: PLS-A-CC-6-14-TH+TU</p> <p>Module I</p> <ol style="list-style-type: none"> 1. Continuity and change in Indian administration: brief historical overview. 2. Civil Service in India (Bureaucracy): recruitment (role of UPSC, SPSC), training. 3. Organization of Union Government: Secretariat Administration: PMO, Cabinet Secretariat. 4. Organization of State Government: Chief Secretary – relations between Secretariat and Directorate. 5. District Administration: role of District Magistrate, SDO, BDO. <p>Module II:</p> <ol style="list-style-type: none"> 6. Local Self Government: Corporations, Municipalities and Panchayats in West Bengal, structure and functions. 73rd and 74th Amendment: overview. 7. Planning: Planning Commission, National Development Council. District Planning. Changing nature of planning: NITI Ayog. Budget--- concept and significance. 8. Financial Administration: Public Accounts Committee, Estimates Committee – role of CAG. 9. Citizen and administration: functions of Lokpal and Lokayukt. Right to Information-- Citizen Charter. 10. Citizen and social welfare policies: MGNREGA; SarvaShikshaAbhiyan (SSA); National Health Mission (NRHM). 								<p>√</p> <p>√</p>
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DINABANDHU ANDREWS COLLEGE

AFFILIATED TO UNIVERSITY OF CALCUTTA

Department of Botany

UNDERGRADUATE SECTION

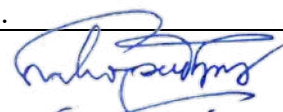
Model Reference: University of Calcutta, Syllabus for Botany (Advanced) (CBCS)

[with effect from July 2018 (2018-19)] (Notification No. CSR/12/18)

PROGRAMME OUTCOME OVERVIEW OF B.SC. IN BOTANY

Programme Outcomes Nos	Programme Outcomes (PO)
PO A	To impart comprehensive knowledge of different plant groups, ranging from primitive to recently evolved.
PO B	To educate students about the conservation of plant species and their sustainable uses.
PO C	To arm students with the concepts necessary for field and lab-based learning.
PO D	To educate students about plants and their uses in industry.
PO E	To train the students for future entrepreneurship.
PO F	To motivate the students to pursue higher education, to take up research as a career and establish prosperous career in industry,
PO G	To inculcate scientific temperament in young minds and outside the scientific community.
PO H	To investigate the wealth of therapeutic plants.

Programme Specific Outcomes Nos.	Programme Specific Outcomes (PSO)
PSO 1	To develop knowledge in a variety of new and developing fields of Botany for use in further education, research, industry and entrepreneurship, as well as to get familiar with cutting-edge methods and tools.
PSO 2	To increase understanding of community studies and the changing environment.
PSO 3	To impart leadership and administrative skills while encouraging lifelong learning, which is necessary for a qualified professional.


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PSO 4	To acquire the skill of logical and thorough documentation and record-keeping of laboratory notebooks; to improve communication skills, including the ability to comprehend and write well; to create powerful presentations; and to give and receive clear directions.
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Mapping of PO & PSO for Botany Honours (CBCS) Syllabus of University of Calcutta

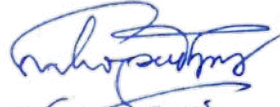
Programme Specific Outcomes Nos.	PROGRAM OUTCOME (PO)							
	A	B	C	D	E	F	G	H
PSO 1	√	√	√	√	√	√	√	√
PSO 2	√	√	√	√		√	√	√
PSO 3			√	√	√	√	√	
PSO 4	√		√	√	√	√	√	√

Programme Outcome for Partial Semester wise Courses in Botany Advanced 2018 under University of Calcutta

TABLE 1

COURSE DURATION	COURSE DETAIL	PROGRAM OUTCOME (PO)							
		A	B	C	D	E	F	G	H
SEMESTER I	CC1 Phycology and Microbiology	√	√	√	√	√	√	√	
	CC2 Mycology and Phytopathology	√	√	√			√	√	
SEMESTER II	CC3 Plant Anatomy	√	√	√			√	√	
	CC4 Archegoniate	√	√	√			√	√	
SEMESTER III	CC5 Palaeobotany and Palynology	√	√	√	√		√	√	
	CC6 Reproductive Biology of Angiosperms	√	√	√			√	√	
	CC7 Plant systematics	√	√	√			√	√	√
	SEC A1/ A2 Applied Phycology, Mycology and	√	√	√	√	√	√	√	√

	Microbiology / Biofertilizers								
SEMESTER IV	CC8 Plant Geography, Ecology and Evolution	√	√	√			√	√	√
	CC9 Economic Botany	√	√	√	√	√	√	√	√
	CC10 Genetics	√		√		√	√	√	√
	SEC B1/ B2 Plant Breeding / Mushroom Culture Technology	√	√	√	√	√	√	√	
SEMESTER V	CC11 Cell and Molecular Biology	√	√	√			√	√	
	CC12 Biochemistry	√	√	√			√	√	
	DSEA (1 / 2) Biostatistics / Industrial and Environmental Biology	√	√	√	√	√	√	√	√
	DSEB (1 / 2) Plant Biotechnology / Horticultural Practices and Post Harvest Technology	√	√	√	√	√	√	√	√
SEMESTER VI	CC13 Plant Physiology	√	√	√			√	√	
	CC14 Plant Metabolism	√	√	√			√	√	√
	DSEA (1 / 2) Medicinal and Ethnobotany / Stress Biology	√	√	√	√	√	√	√	√
	DSEB (1 / 2) Research Methodology / Natural Resource Management	√	√	√	√	√	√	√	√


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Department of Zoology

UNDERGRADUATE SECTION

Model Reference: University of Calcutta, Syllabus for Zoology (Advanced) (CBCS)

[with effect from July 2018 (2018-19)] (Notification No. CSR/12/18)

The Undergraduate Honours Course in B.Sc. Zoology (CBCS) strictly follows the syllabus of the affiliating University, i.e. The University of Calcutta. The CBCS course came into effect from August 2018. The Syllabus includes fourteen core papers (CC1 to CC 14), two Skill Enhancement Course papers (with two option for each SEC A1 or A2 & SEC B1 or B2) and two Discipline Specific Elective (with two option for each DSE A1 or A2 & DSE B1 or B2).

Further, the syllabi according to New Education Policy (NEP) for semester wise four-year (Honours & Honours with Research)/ three-year (Multidisciplinary) programme of U.G. courses of studies came into effect from July 2023. The First Batch of UG students following the NEP Course are awaiting their Semester I examination. Therefore, it is too early to indicate the impact of the projected POs & PSOs for the NEP syllabus designed by the University of Calcutta.

PROGRAMME OUTCOME OVERVIEW OF B.SC. IN ZOOLOGY

Programme Outcomes Nos	Programme Outcomes (PO)
PO A	To provide a sound knowledge and skill in the fundamentals of animal sciences, understands the complex interactions among various living organisms, belonging to different phyla, their distribution and their relationship with the environment
PO B	To understand various concepts of genetics and its importance in human health and the internal structure of cell, its functions in control of various metabolic functions along with knowledge of organ systems and their role in various physiological processes.
PO C	Understanding of environmental conservation processes and its importance, pollution control and biodiversity and protection of endangered species.
PO D	Gain knowledge of Agro based Small Scale industries like sericulture, fish farming, animal husbandry, poultry farming and vermicompost preparation. Further, to develop an opportunity to work in interdisciplinary groups or areas
PO E	To develop the ability to communicate and comprehend; documentation and effective writing of laboratory notebooks, field reports and environmental

	audit reports, prepare effective presentations, and give and receive clear instructions while working as an individual and being in team.
PO F	Ability to use modern techniques and handle sophisticated instruments for experimental work; apply current software for data analysis while inculcating scientific temperament in the young minds.
PO G	To prepare the students for a successful career in Research, Teaching, Wildlife as well as industries, etc.
PO H	Apply ethical principles and commit to professional ethics and responsibilities in delivering her/his duties.
PO I	Develop leadership and managerial skills and understanding the need for lifelong learning to be a competent professional while applying the knowledge and understanding of Zoology to one's own life and work

PROGRAMME SPECIFIC OUTCOME OF B.SC. IN ZOOLOGY

Programme Specific Outcomes Nos	Programme Specific Outcomes (PSO)
PSO 1	Understand the basic and applied concepts of Cell biology, Genetics, Taxonomy, Physiology, Biochemistry, Microbiology, Immunology, Biotechnology, Molecular Biology, Developmental Biology, Ecology, Applied Zoology, etc.
PSO 2	Understand the complex evolutionary processes and behaviour of animals
PSO 3	Understand biodiversity and protection of endangered species, environmental conservation processes and its importance, pollution control
PSO 4	Perform procedures as per laboratory standards in the areas of Taxonomy, Physiology, Ecology, Cell biology, Genetics, Applied Zoology, Clinical science, tools and techniques of Zoology, Toxicology, Entomology, Nematology Sericulture, Biochemistry, Fish biology, Animal biotechnology, Immunology and research methodology
PSO 5	Understand the applications of biological sciences in Apiculture, Aquaculture, Agriculture and Medicine
PSO 6	To be acquainted with and apply good ethical principles and commit to professional ethics and responsibilities

Mapping of PO & PSO for Zoology Honours Syllabus (CBCS) of University of Calcutta

Programme Specific	Programme Outcomes (PO)
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Outcomes (PSO) Nos	A	B	C	D	E	F	G	H	I
PSO 1	√	√	√	√	√	√	√	√	√
PSO 2	√	√		√	√	√	√	√	√
PSO 3		√		√	√	√	√		
PSO 4	√	√	√	√	√	√	√	√	√
PSO 5	√	√	√			√	√	√	
PSO 6		√	√	√	√				√

Programme Outcome mapping for CBCS Courses in Zoology Honours under University of Calcutta

TABLE I

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)									
		A	B	C	D	E	F	G	H	I	
PART 1 (1 year)	SEMESTER I: CORE COURSE 1 Non Chordata – I (Protists to Pseudocoelomates)	√	√				√	√	√	√	√
	SEMESTER 1: CORE COURSE 2 Molecular Biology		√				√	√	√	√	√
	SEMESTER 2: CORE COURSE 3 Non Chordata – II (All Coelomate Phyla)	√	√				√	√	√	√	√
	SEMESTER 2: CORE COURSE 4 Cell Biology		√				√	√	√	√	√
PART 2 (1 year)	SEMESTER 3: CORE COURSE 5 Chordata	√	√				√	√	√	√	√
	SEMESTER 3: CORE COURSE 6 Animal Physiology: Controlling & Co-ordinating System	√	√		√			√	√	√	√
	SEMESTER 3:		√				√	√	√	√	√

	CORE COURSE 7 Fundamentals of Biochemistry									
	SEMESTER 3: Skill Enhancement Course A (1/2) Apiculture / Sericulture		√	√	√	√	√	√	√	√
	SEMESTER 4: CORE COURSE 8 Comparative Anatomy of Vertebrate	√	√	√		√	√	√	√	√
	SEMESTER 4: CORE COURSE 9 Animal Physiology: Life sustaining system	√	√			√	√	√	√	√
	SEMESTER 4: CORE COURSE 10 Immunology		√		√	√	√	√	√	√
	SEMESTER 4: Skill Enhancement Course B (1/2) Aquarium Fisheries/ Medical Diagnosis	√	√			√	√	√	√	√
PART 3 (1 year)	SEMESTER 5: CORE COURSE 11 Ecology			√		√	√	√	√	√
	SEMESTER 5: CORE COURSE 12 Principle of Genetics		√	√		√	√	√	√	√
	SEMESTER 5: Discipline Specific Elective A (1/2) Parasitology/Biology of Insect	√		√		√	√	√	√	√
	SEMESTER 5: Discipline Specific Elective B (1/2) Endocrinology/Reproductive Biology		√	√		√	√	√	√	√
	SEMESTER 6: CORE COURSE 13 Developmental Biology		√				√	√	√	√

	SEMESTER 6: CORE COURSE 14 Evolutionary Biology	√	√	√		√	√	√	√	√
	SEMESTER 6: Discipline Specific Elective A (1/2) Animal Biotechnology/ Animal Cell Biotechnology		√	√		√	√	√	√	√
	SEMESTER 6: Discipline Specific Elective B (1/2) Animal Behaviour & Chronology/Fish & Fisheries		√	√		√	√	√	√	√

COURSE OUTCOME

PART 1 SEMESTER I:

CORE COURSE 1

Non Chordata – I (Protists to Pseudocoelomates)

After successfully completing this course, students will be able to:

CO1	Describe general taxonomic rules on animal classification and specifically the Classification of invertebrates till Nematodes.
CO2	Have an idea of animal architecture and Bauplan concept of invertebrates
CO3	Have knowledge on locomotion and reproduction in Protozoa, Polymorphism in Cnidaria, Coral reefs, pathogenicity and control measures of nematodes.
CO4	Imparts conceptual knowledge of invertebrates, their adaptations and associations in relation to their environment.

PART 1 SEMESTER I:

CORE COURSE 2

Molecular Biology

After successfully completing this course, students will be able to:

CO1	To familiarize students with the concept of Molecular Biology which chiefly deals with interactions among various systems of the cell, including those between DNA, RNA and proteins and how these are regulated.
CO2	Have a concept of different types of microscopy used for cellular studies
CO3	To gain an understanding of chemical and molecular processes that occurs in and between cells.
CO4	Know the Molecular basis of DNA replication, protein synthesis, post transcriptional modifications, RNA processing

CO5	To gain insight into the most significant molecular and cell-based methods used today to expand our understanding of biology
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PART 1 SEMESTER 2:

CORE COURSE 3

Non Chordata – II (All Coelomate Phyla)

After successfully completing this course, students will be able to:

CO1	Explain the diversity of higher invertebrates and understand the Classification of invertebrates till Echinoderms
CO2	To appreciate the diversity in higher invertebrates including arthropods, molluscs and echinoderms along with their characters.
CO3	Counting of haemocytes in cockroach. Identify and classify invertebrates and vertebrates by studying their external characters and prepare keys.
CO4	Create the awareness of the economic importance and significance of arthropods and molluscs. Discuss the biological methods of pest management

PART 1 SEMESTER 2:

CORE COURSE 4

Cell Biology

After successfully completing this course, students will be able to:

CO1	Describe the structure and function of cell, cell organelles and plasma membrane
CO2	Have a concept of different types of microscopy used for cellular studies
CO3	To describe the structure and functions of Endoplasmic Reticulum, Golgi apparatus, Lysosome, Mitochondria, Peroxisomes, Cytoskeleton/ Nucleus.
CO4	Learn about an account on cell division and cell signalling. To know the process of apoptosis and role of it.
CO5	Students will understand how these cellular components are used to generate and utilize energy in cells.

PART 2 SEMESTER 3:

CORE COURSE 5

Chordata

After successfully completing this course, students will be able to:

CO1	Evolutionary significance of protochordates. Discuss the taxonomic position, characteristic features and distribution of different orders of the protochordates to Mammal
CO2	Details of the structure and function of the skeletal system, respiration, circulation, excretion, sense organs and nervous system
CO3	Structural adaptations for different modes of life in chordates

CO4	Identify and distinguish between poisonous and non-poisonous snakes by observing characteristic features. Discuss the composition and significance of snake venom.
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PART 2 SEMESTER 3:

CORE COURSE 6

Animal Physiology: Controlling & Co-ordinating System

After successfully completing this course, students will be able to:

CO1	Principles of Animal Physiology and its relation to size and scale of organisms
CO2	Physiology of respiration, excretory system, thermal regulation, blood and body fluids and sense organs
CO3	Physiology of animal behaviour
CO4	Explain the physiological functions of various organ systems of the mammalian physiology. Discuss the correlation between histology, anatomy and physiology

PART 2 SEMESTER 3:

CORE COURSE 7

Fundamentals of Biochemistry

After successfully completing this course, students will be able to:

CO1	To impart the knowledge of biomolecules and their involvement in chemical reactions in living cells in order to maintain homeostasis.
CO2	Concept of protein, carbohydrate and lipid metabolism, vitamins and minerals : Free radicals and anti-oxidants.
CO3	Students will get acquainted with the knowledge of Enzymes: classification, nomenclature, mechanism of action and Bioenergetics.
CO4	Oxidation of lipids: beta oxidation, oxidation of unsaturated and odd chain fatty
CO5	Do qualitative tests for carbohydrates, proteins, urea, uric acid and fats and quantify the amount of protein in a sample. Prepare Normal, molar and standard solutions, phosphate buffers, and do serial dilutions

PART 2 SEMESTER 3:

Skill Enhancement Course A (1/2)

Apiculture / Sericulture

After successfully completing this course, students will be able to:

CO1	Knowledge about honey bee and bee rearing. Knowing beehives, bee keeping equipment, methods of extraction of honey and processing of honey.
CO2	Bee enemies and diseases. Bee economy and entrepreneurship in apiculture
CO3	Gives knowledge of silk worm rearing. Mulberry cultivation.

CO4	Pests and diseases associated with silk worm and mulberry. Various process involved in silk production
CO5	Application of biotechnology in Sericulture and Apiculture

PART 2 SEMESTER 4:
CORE COURSE 8
Comparative Anatomy of Vertebrate

After successfully completing this course, students will be able to:

CO1	Obtain comprehensive knowledge of comparative anatomy of chordates and to recognize their evolutionary trends
CO2	Comparative knowledge of Integumentary, Digestive, Circulatory, Urinogenital, Nervous and Skeletal system of various classes of vertebrates.
CO3	Structural adaptations for different modes of life in chordates

PART 2 SEMESTER 4:
CORE COURSE 9
Animal Physiology: Life sustaining system

After successfully completing this course, students will be able to:

CO1	Learn about animal physiology and the various physiological pathways and its importance
CO2	To describe the digestion and absorption of carbohydrate, fats and protein.
CO3	To explain the structure of neuron and its propagation, blood components, transport of gases, mechanism of urine formation, structure of heart, various endocrine glands
CO4	Know the physiology of digestion, excitable tissue, respiration, excretion, circulation, endocrine and reproduction.

PART 2 SEMESTER 4:
CORE COURSE 10
Immunology

After successfully completing this course, students will be able to:

CO1	To describe the overview, types of immunity, Cells and organs associated with immune system; Innate and adaptive immunity
CO2	Concept of Antigens, Antibody, Cytokines, adjuvants, Complement proteins – pathways and activation, MAC formation
CO3	Humoral and cell mediated immunity, T-cell and B-cell, Macrophage, MHC
CO4	Elucidation of immunodiagnostic procedures and monoclonal antibodies

PART 2 SEMESTER 4:
Skill Enhancement Course B (1/2)
 Aquarium Fisheries/ Medical Diagnosis

After successfully completing this course, students will be able to:

CO1	Provides knowledge of ornamental fish breeding which is highly professional and attractive avenue for youth.
CO2	Aquarium fish keeping, aquarium setup and accessories. Aquarium fishes, their food and feeding. Maintenance of aquarium.
CO3	Fish transportation and management. Different types of feed formulation and development of disease diagnostic tools.
CO4	To distinguish various diagnostic methods in blood and urine analysis; know infectious and noninfectious diseases.
CO5	Get an extensive impression of tumours and their impact on health.
CO6	General concept of communicable diseases, mechanism of pathogenesis and their control measures.

PART 3 SEMESTER 5:
CORE COURSE 11
 Ecology

After successfully completing this course, students will be able to:

CO1	Conceptual knowledge of ecology and its important attributes; biodiversity and its conservation and scope.
CO2	Understand mechanisms by which organisms interact with other organisms and with their physical environment.
CO3	To explain the biotic and abiotic factors that influence the dynamics of populations and its attributes, characteristics of community, structure and functions of ecosystem and concept of biodiversity and wildlife conservation.
CO4	Ecology of biological and industrial invasion (Eutrophication, Acidification). Biodegradation and Bioremediation. Wastes in Ecosystem and management (Agricultural wastes, Biomedical wastes and Domestic waste)
CO5	To perform various physico-chemical experiment. Determine pH, dissolved oxygen and carbon dioxide of water samples.
CO6	Study micro arthropods of water and soil samples and Zooplankton count by standard methods.

PART 3 SEMESTER 5:
CORE COURSE 12
 Principle of Genetics

After successfully completing this course, students will be able to:

CO1	Mendelian and non-mendelian inheritance. Understanding of basic concepts of genetics and laws of inheritance.
CO2	Organisation of genes and chromosomes. Imprinting of genes,
CO3	Concept behind genetic disorder, gene mutations- various causes associated with inborn errors of metabolism.
CO4	Epigenetic regulation by DNA methylation . Somatic Cell Genetics and hybridoma

PART 3 SEMESTER 5:
Discipline Specific Elective A (1/2)
 Parasitology/Biology of Insect

After successfully completing this course, students will be able to:

CO1	Describe the life cycle, morphology, infection of various parasites.
CO2	Vector Biology and Biology of Protozoan parasites, Helminthic parasites, Nematode parasites and Arthropod Parasites
CO3	Host–parasite relationship, environmental and host factors regulating parasitic diseases and to recognize the general outlines of parasite treatment and control.
CO4	Know the classification of insect, morphological characters, physiology, structure, functions and metabolism. Describe the structure and variation of mouthparts, antennae etc of insects various insect physiology.
CO5	Describe the mechanism of caste differentiation in eusocial insects, life cycle of economic insect, concept of IPM, types of insect injury to plant, venom and allergens.

PART 3 SEMESTER 5:
Discipline Specific Elective B (1/2)
 Endocrinology/Reproductive Biology

After successfully completing this course, students will be able to:

CO1	Comprehend the study of endocrine system their role in maintaining homeostasis of the human body
CO2	Explain the pathological conditions associated with endocrine imbalances. Explain the patho-physiology of common diseases related to organ systems of the body.
CO3	To describe the gonadal hormones and the mechanism of hormones action in reproduction. Explain the functional anatomy of male and female reproduction. Write the process of fertilization in reproductive biology.
CO4	Endocrinology of female sex cycle, Control of testicular functions Modes and methods of male and female fertility control, Endocrine malfunction induced male and female infertility. Photoperiodism and endocrinology of photosexual activity, Pheromones and interactions

PART 3 SEMESTER 6:
CORE COURSE 13
 Developmental Biology

After successfully completing this course, students will be able to:

CO1	To describe the history and different stages of embryonic development and its implications.
CO2	Have knowledge on the basic concepts of the processes of gametogenesis, fertilization, cleavage, gastrulation, development of extraembryonic membranes, eye. Get an idea on different types of placenta and organizer concept
CO3	Concepts of cryopreservation of gametes and embryo of man, IVF and embryo transfer in man
CO4	Knowledge on characteristic features of stem cells, potency and niche, markers in human stem cell, potential application of stem cells as regenerative medicine

PART 3 SEMESTER 6:
CORE COURSE 14
 Evolutionary Biology

After successfully completing this course, students will be able to:

CO1	Gain conceptual understanding of evidences, theories and mechanisms of evolution.
CO2	Patterns and trends in evolution, the Origin and Evolution of Primates. Explain the evolutionary history of man and its phylogenetic trees.
CO3	Evolutionary Process, Natural Selection and Adaptation Gene Frequencies in Population

PART 3 SEMESTER 6:
Discipline Specific Elective A (1/2)
 Animal Biotechnology/Animal Cell Biotechnology

After successfully completing this course, students will be able to:

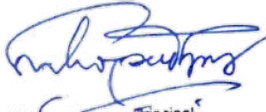
CO1	To impart theoretical knowledge on various techniques of animal biotechnology and their application in industries.
CO2	To develop concepts, principles and processes in animal biotechnology. Students will know about different techniques for in vitro fertilization. Elucidation of different methods for the improvement of animals, including poultry production, milk quality, disease resistance etc.
CO3	Cell and tissue culture technology, Biotechnology in improvement of live stock To train the students in gene therapy applications. Students will learn Molecular techniques for disease diagnosis

CO4	Reproductive biotechnology (Cryopreservation, Assisted reproductive technology, In vitro fertilization and embryo transfer, ICSI, Sperm sexing) Gene and Somatic cloning techniques, Animal Production technology & Food security. Environmental and Medical Bio-technology
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PART 3 SEMESTER 6:
Discipline Specific Elective B (1/2)
 Animal Behaviour & Chronology/Fish & Fisheries

After successfully completing this course, students will be able to:

CO1	Gain fundamental knowledge in the concepts of animal behavior which enable the student to conceptualize learning, communication, migration and biological rhythms.
CO2	Gain knowledge of the types of reflexes, types of learning and communication, parental care, circadian rhythm and applied chronobiology.
CO3	Gain knowledge of the modern trends in fish taxonomy, accessory respiratory organs and acid-base balance.
CO4	Comprehend the classification, morphology and physiology of fish; Inland fisheries and its sustainable aquaculture.
CO5	Gain knowledge of the wetland and estuarine fisheries, various types of fish preservation, different types of feed formulation and disease diagnostic tools.


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AFFILIATED TO THE UNIVERSITY OF CALCUTTA

Department of Microbiology

UNDERGRADUATE SECTION

Model Reference: University of Calcutta, Syllabus for Microbiology Advanced (CBCS)

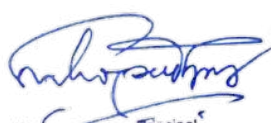
[with effect from July 2018 (2018-19)] (Notification No. CSR/12/18)

The Programme Outcomes (PO) of B.Sc. Honours Microbiology Curriculum:

Programme Outcomes Nos	Programme Outcomes (PO)
PO A	To instil into the students a comprehensive approach, to prepare their mind confronting any situation in life, not only study the subject, and to give a firm interdisciplinary approach.
PO B	To acquire solid foundational knowledge and comprehension of microbiological principles in order to facilitate diversification in the field of applied microbiology, including industrial, biochemical and biomedical, environment, biotechnology, genetics, agriculture, and food etc.
PO C	To evolve proficiency in the laboratory and a strong desire solving problems from scientific perspective
PO D	To thrive extraordinary communication skills, both in written and spoken language while pursuing higher education, research, and for industrial exposure for developing a great power of verbalization.
PO E	To develop a collaborative attitude at work, learn how to maintain integrity at work, and grow a team spirit.
PO F	To demonstrate the necessary practical skills for managing microorganisms for study and use in and out of the laboratory, including the use of reliable microbiological methods.
PO G	To become proficient in the handling of biological data and statistical analysis of the data, as well as in applying knowledge and abilities related to microbiology to analyse problems.
PO H	To become informed with the most recent, cutting-edge tools, complex equipment, and contemporary microbiology techniques, as well as the range of applications for which they are appropriate.
PO I	To build research strategies and skills to fill in the gaps of knowledge in the domains of microbiology and related interdisciplinary or multidisciplinary fields.
PO J	To establish career and professional objectives as academicians, industry professionals, and environmental activists based on a comprehensive understanding of the circumstances and an appropriate career planning process in higher education.

PO K	To cultivate a scientific temper and inspire young minds to think creatively as a result of participating in various awareness campaigns, interactive workshops, and scientific talks.
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Program Specific Outcomes Nos	Programme Specific Outcomes (PSO)
PSO 1	Describe the basic ideas, underlying theories, procedures, and techniques used in the various fields of microbiology.
PSO 2	Determine the microorganisms' identity and categorise them according to their physical traits and how they interact with their surroundings.
PSO 3	Illustrate an elaborate understanding of the various types of microorganisms, structure, composition, their roles in the biosphere, bioinformatics, and biostatistics.
PSO 4	Apply the technologies, tools and scientific procedures for laboratory and traditional studies safely and make a valid conclusion on the basis of the result getting from the field of microbiology and its related areas.
PSO 5	Explain the function of microbes in agriculture, food and dairy technology, human health, and the mechanism by which bacteria inherit genetic information and create novel genetic combinations using recombinant DNA.
PSO 6	Acquire knowledge about intellectual property rights, biosafety precautions, and potential job opportunities in microbiology.
PSO 7	Utilize their understanding of the many structural and enzymatic characteristics of microorganisms and fermentation procedures to create environmentally sustainable goods or procedures.


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Mapping of PO & PSO for Microbiology (Honours) Syllabus (CBCS) of University of Calcutta

Programme Specific Outcomes (PSO) Nos	Programme Outcomes (PO)										
	A	B	C	D	E	F	G	H	I	J	K
PSO 1	✓	✓		✓	✓		✓		✓	✓	✓
PSO 2	✓	✓		✓	✓	✓				✓	✓
PSO 3	✓	✓		✓	✓	✓	✓		✓		✓
PSO 4		✓	✓		✓	✓	✓	✓	✓		✓
PSO 5		✓	✓	✓	✓	✓		✓			✓
PSO 6		✓		✓					✓	✓	✓
PSO 7		✓	✓		✓	✓	✓	✓		✓	✓

Programme Outcome mapping for Partial Semester wise CBCS Courses in Microbiology (Honours) under University of Calcutta

TABLE I

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)										
		A	B	C	D	E	F	G	H	I	J	K
Sem1 6 months	CC1 Introduction to Microbiology and Microbial Diversity (Theory+Practical)	✓		✓		✓	✓					
	CC2 Bacteriology (Theory + Practical)		✓	✓		✓	✓	✓	✓			
SemII 6 months	CC3 Biochemistry	✓		✓		✓			✓	✓		✓

	(Theory + Practical)											
	CC4 Cell Biology (Theory + Practical)		✓	✓		✓	✓		✓	✓		✓

TABLE II

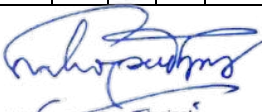
COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)										
		A	B	C	D	E	F	G	H	I	J	K
SemIII 6 months	CC5 Virology (Theory + Practical)		✓	✓		✓	✓		✓	✓	✓	✓
	CC6 Microbial Physiology and Metabolism (Theory + Practical)		✓	✓		✓	✓		✓	✓	✓	✓
	CC7 Molecular Biology (Theory + Practical)	✓		✓		✓	✓		✓	✓	✓	✓
	SECA1 Microbial Quality Control in Food and Pharmaceutical Industries		✓						✓	✓	✓	✓
	SECA2 Biofertilizers and Biopesticides		✓								✓	✓
SemIV 6 months	CC-8: Microbial Genetics		✓	✓	✓		✓		✓		✓	

	(Theory + Practical)											
	CC-9: Environmental Microbiology (Theory + Practical)	✓	✓	✓		✓	✓	✓			✓	✓
	CC-10: Recombinant DNA Technology (Theory + Practical)		✓	✓				✓	✓	✓	✓	✓
	SEC-B 1. Food Fermentation Techniques		✓							✓	✓	
	SEC-B 2 Microbiological Analysis Of Air And Water		✓				✓			✓	✓	

TABLE III

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)										
		A	B	C	D	E	F	G	H	I	J	K
SemV 6 months	CC-11: Food And Dairy Microbiology (Theory + Practical)		✓	✓			✓		✓		✓	✓
	CC-12: Industrial Microbiology (Theory + Practical)	✓	✓	✓			✓		✓			
	DSE-A 1 Microbial Biotechnology (Theory + Practical)	✓	✓	✓		✓	✓				✓	✓
	DSE-A 2 Advances In Microbiology (Theory + Practical)	✓	✓	✓			✓	✓	✓			✓
	DSE-B 1 Inheritance Biology (Theory + Practical)	✓	✓	✓				✓			✓	✓

	DSE-B 2 Microbes In Sustainable Agriculture And Development (Theory + Practical)	✓	✓	✓			✓		✓	✓	✓	
Sem VI 6 months	CC-13: Immunology (Theory + Practical)	✓			✓			✓	✓	✓	✓	✓
	CC-14: Medical Microbiology (Theory + Practical)	✓		✓			✓	✓	✓			✓
	DSE-A 3 Plant Pathology (Theory + Practical)	✓	✓				✓					✓
	DSE-A 4 Biomathematics And Biostatistics (Theory + Practical)	✓	✓					✓			✓	✓
	DSE-B 3 Instrumentation And Biotechniques (Theory + Practical)	✓	✓	✓			✓	✓	✓	✓		
	DSE-B 4 Project Work	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓


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AFFILIATED TO UNIVERSITY OF CALCUTTA

Department of Sericulture

UNDERGRADUATE SECTION

Model Reference: University of Calcutta, Autonomous Course B. Sc (Major) in Sericulture)
(CBCS)

[with effect from July 2018 (2018-19)] (Notification No. CSR/12/18)

- The Course entitled B.Sc (Major) Sericulture ran successfully from August 1996 to till now. Department of Sericulture Under Graduate Section with academic autonomy from the affiliating University, the University of Calcutta. The Syllabus was designed by the Faculty of Zoology under guidance of the Expert Committee appointed for that purpose.
- The CBCS course under the academic control of the University of Calcutta came into force from August 2018. The First Batch of UG students following the CBCS Course is started by that time. Therefore, it is to indicate the impact of projected POs & PSOs in the CBCS syllabus designed by the University of Calcutta.

Programme Outcomes Nos	Programme Outcomes (PO)
PO A	To encourage the students for higher education and motivated them to enter into the research career as there are immense opportunities awaiting for them.
PO B	To built-up strong foundation in the field of basic biological science
PO C	Sericulture is an applied zoology, it provides hands on training on various fields like silkworm rearing, reeling operation, weaving operation, cultivation with agronomical practices which further develops deep knowledge and expertise skill of the students.
PO D	Sericulture is a multidisciplinary subjected, so it is quite obvious that this subject brings diversified knowledges on various field like zoology, botany, chemistry, management, agriculture extension, environmental science, soil science etc. Very recently seri-biotechnology and seri-bioinformatics introduced which open up huge scopes in wet and dry laboratory works.
PO E	Ability to use modern techniques and to handle different types of sophisticated instruments.
PO F	To develop communicating ability such as being able to comprehend and write effective laboratory notebooks and design documentation, prepare effective presentations, and give and receive clear instructions
PO G	Build up them for a successful career in administrative jobs.
PO H	To develop individual and teamwork by functioning effectively as an individual or as a member in a group in laboratory classes, it is further added that sericulture provides knowledge on computer and statistical data analysis.

Programme Specific Outcomes Nos	Programme Specific Outcomes (PSO)
PSO 1	To apply knowledge in emerging and varied areas of Sericulture for higher studies, research.
PSO 2	To develop leadership and managerial skills and understanding the need for lifelong learning to be a competent professional.
PSO 3	To develop knowledge in community study extensional work and study on transfer of technology.
PSO 4	To be acquainted with good laboratory practices and safety measures.

Mapping of PO & PSO for Sericulture (Major) Syllabus of University of Calcutta

Programme Specific Outcomes (PSO) Nos	Programme Outcomes (PO)							
	A	B	C	D	E	F	G	H
PSO 1	√	√	√	√	√	√	√	√
PSO 2	√			√	√		√	√
PSO 3	√	√			√			√
PSO 4	√	√	√	√	√		√	

TABLE I

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)							
		A	B	C	D	E	F	G	H
SEM I	CC 1	√			√		√		√
	CC 2	√	√	√		√	√		√

TABLE II

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)							
		A	B	C	D	E	F	G	H
SEM II	CC 3	√	√	√		√	√		√
	CC 4	√	√	√		√	√		√

TABLE III

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)							
		A	B	C	D	E	F	G	H
SEM III	CC 5	√	√			√	√		
	CC 6	√	√				√		√
	CC 7	√	√	√	√	√	√		√
	SEC A1	√	√						



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TABLE IV

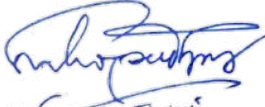
COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)							
		A	B	C	D	E	F	G	H
SEM IV	CC 8	√	√	√	√	√			√
	CC 9	√	√	√	√	√			√
	CC 10	√			√		√	√	
	SEC A2	√	√	√	√	√	√		√

TABLE V

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)							
		A	B	C	D	E	F	G	H
SEM V	CC 11	√					√		√
	CC 12	√					√	√	√
	DSE A1	√			√	√	√	√	√
	DSE B2	√	√	√	√	√	√		√

TABLE VI

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)							
		A	B	C	D	E	F	G	H
SEM VI	CC 13	√			√		√	√	√
	CC 14	√			√		√	√	√
	DSE A2	√					√	√	√
	DSE B2	√	√		√	√	√		√


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Department of Molecular Biology

UNDERGRADUATE SECTION

Model Reference: University of Calcutta, Syllabus for Molecular Biology General (CBCS)

[with effect from July 2018 (2018-19)] (Notification No. CSR/12/18)

The Programme Outcomes (PO) of B.Sc. General Molecular Biology Curriculum:

Programme Outcomes Nos	Programme Outcomes (PO)
PO A	To acquire a comprehensive understanding of fundamental concepts in molecular biology, including DNA structure and function, RNA processing, protein synthesis, and cellular signalling.
PO B	To explain the mechanisms of some of the major infectious and non-infectious diseases.
PO C	To explain the principles of a number of important and widely used laboratory diagnostic tests.
PO D	To develop individual and teamwork by functioning effectively as an individual or as a member in a group in laboratory classes.
PO E	To learn documentation and record keeping of laboratory notebooks in a logical and meticulous manner.
PO F	To develop an opportunity to work in interdisciplinary groups
PO G	To inculcate scientific temperament in young minds and outside the scientific community.

Programme Specific Outcomes Nos	Programme Specific Outcomes (PSO)
PSO 1	Develop a strong foundation in molecular biology while acquiring essential skills for both academic and professional pursuits in the field.
PSO 2	Develop proficiency in basic laboratory techniques used in molecular biology, such as DNA extraction, PCR (Polymerase Chain Reaction), gel electrophoresis, and gene cloning, and demonstrate the ability to analyse experimental results. Also to prepare the students to motivate them for higher education, to take up research as a career and a successful career in industry.
PSO 3	Integrate knowledge from molecular biology with other scientific disciplines, demonstrating the ability to connect molecular processes to broader biological phenomena and understand their significance in health and disease.

Mapping of PO & PSO for Molecular Biology (General) Syllabus (CBCS) of University of Calcutta

Programme Specific Outcomes (PSO) Nos	Programme Outcomes (PO)						
	A	B	C	D	E	F	G
PSO 1	✓	✓		✓	✓		✓
PSO 2	✓	✓		✓	✓	✓	
PSO 3	✓	✓		✓	✓	✓	✓

Programme Outcome mapping for Partial Semester wise CBCS Courses in Molecular Biology (General) under University of Calcutta

TABLE I (SEMESTER-1)

Paper	COURSE DURATION Semester 1 6 Months	COURSE DETAIL	PROGRAM OUTCOMES (PO)							
			A	B	C	D	E	F	G	
Cell Biology - Principles and Techniques	MLB-G-CC1-1 (TH)	1) Cell Biology 2) Molecules of Life 3) Microscopy Techniques	✓	✓						✓
	MLB-G – CC1-1 (P)	1) Determination of refractive index of a given biological sample by travelling microscope 2) Determination of relative sizes of nucleus and cytoplasm of squamous cells 3) Preparation of phosphate buffer and measurement of pH 4) Qualitative tests for reducing sugar, non-	✓	✓	✓	✓	✓	✓	✓	✓

		reducing sugar, polysaccharide, lipid 5) Quantitative estimation of glucose.							
--	--	---	--	--	--	--	--	--	--

TABLE II (SEMESTER-2)

Paper	COURSE DURATION Semester – 2 Six months	COURSE DETAIL	PROGRAM OUTCOMES (PO)							
			A	B	C	D	E	F	G	
Basics of biomolecules	MLB-G-CC-2-1 (TH)	1) Molecules of life 2) Bioenergetics and metabolism of biomolecules	√		√				√	√
	MLB-G -CC-2-1 (P)	1) Qualitative tests for amino acid, protein. 2) Identification of unknown compounds (from sugars, polysaccharide, lipid, amino acid and protein) 3) Estimation of protein by Lowry method using UV-Visible spectrophotometer or colorimeter. 4) Calculation of Rf value and separation of unknown amino acid by TLC or paper chromatography. 5) Estimation of amino acid by formol titration.			√	√	√	√	√	√

TABLE III (SEMESTER-3)

Paper	COURSE DURATION Semester – 3 Six months	COURSE DETAIL	PROGRAM OUTCOMES (PO)							
			A	B	C	D	E	F	G	
Concepts of Molecular Biology	MLB-G-CC-3-1 (TH)	1) Basic Concepts of genome and its organisation 2) Replication of DNA in prokaryotes 3) Gene expression 4) Damage, Repair and Mutation	√	√	√					√
	MLB-G-CC-3-1 (P)	1) Determination of absorption spectra of DNA and protein using UV-Visible spectrophotometer. 2) Estimation of DNA by diphenylamine reaction 3) Estimation of RNA by orcinol method 4) Using turbidometry (light scattering) to estimate microbial growth. 5) Measure the OD ratio at 260 and 280 nm for supplied DNA and protein samples 6) Estimate purity of DNA sample. 7) Observation of bacterial morphology by negative stain method (nigrosin) using light Microscope.	√	√	√	√	√	√	√	√

Paper	COURSE DURATION Semester – 3 Six months	COURSE DETAIL	PROGRAM OUTCOMES (PO)						
			A	B	C	D	E	F	G
SEC - A	SEC 1	Radiation Biology	√	√	√		√	√	√
	SEC 2	Biomedical instrumentation	√	√	√	√		√	√



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TABLE IV (SEMESTER-4)

Paper	COURSE DURATION Semester – 4 Six months	COURSE DETAIL	PROGRAM OUTCOMES (PO)							
			A	B	C	D	E	F	G	
Biophysical techniques	MLB-G-CC- 4-1 (TH)	1) Diffusion 2) Osmosis 3) Viscosity 4) Centrifugation 5) Spectrophotometry and other methods 6) Immunology	√	√	√					√
	CEMA – CC - 4-10(P)	1) Human blood group determination. 2) Measurement of relative viscosity/fluidity of DNA by Ostwald viscometer. 3) Light microscope observation of relative distribution of WBC in a fresh blood smear. 4) Gram staining of bacteria.	√	√	√	√	√	√	√	√

Paper	COURSE DURATION Semester – 4 Six months	COURSE DETAIL	PROGRAM OUTCOMES (PO)						
			A	B	C	D	E	F	G
SEC - B	SEC 1	Biostatistics	√			√	√	√	√
	SEC 2	Bioinformatics	√			√	√	√	√



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TABLE V (SEMESTER-5)

Paper	COURSE DURATION Semester – 5 Six months	COURSE DETAIL	PROGRAM OUTCOMES (PO)						
			A	B	C	D	E	F	G
DSE - A (Any one)	DSE A-5-1 (TH)	Recombinant DNA Technology	√	√	√	√	√	√	√
	DSE A-5-1 (PR)	1. Isolation of plasmid DNA. 2. Restriction enzyme digestion of plasmid DNA. 3. Preparation of competent cells by calcium chloride method and transformation of <i>E. coli</i> with plasmid DNA. 4. Primer design for PCR.	√	√	√	√	√	√	√
	DSE A-5-2 (TH)	Genomics	√	√	√	√	√	√	√
	DSE A-5-2 (PR)	1. Comparison of two large DNA sequences using dot plot servers such as YASS or PipMaker 2. Detection of internal repeats in a genome using genomic dot plots 3. Prediction of the locations and exon-intron structures of genes in genomic sequences from a variety of organisms using web servers such as GENSCAN 4. Complete elucidation of the location, structure, transcripts of a given number of human genes using the Ensembl genome browser.	√	√	√	√	√	√	√

Paper	COURSE DURATION Semester – 5 Six months	COURSE DETAIL	PROGRAM OUTCOMES (PO)						
			A	B	C	D	E	F	G
SEC - A	SEC 1	Radiation Biology	√	√	√		√	√	√
	SEC 2	Biomedical instrumentation	√	√	√	√		√	√




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TABLE VI (SEMESTER-6)

Paper	COURSE DURATION Semester – 6 Six months	COURSE DETAIL	PROGRAM OUTCOMES (PO)						
			A	B	C	D	E	F	G
DSE - B (Any one)	DSE-B-6-1 (TH)	Biophysics of Sensory Processes	√		√	√	√	√	√
	DSE-B-6-1 (PR)	1. Determination of blood pressure with the help of mercury or aneroid sphygmomanometer. 2. Determination of heart rate of a human being from the ECG records. 3. Interpretation of ECG. 4. Detection of colour blindness with the help of Ishihara chart. 5. Interpretation of visual acuity by Snellen's chart.	√	√	√	√	√	√	√
	DSE B-6-2 (TH)	Clinical Biochemistry	√	√	√	√	√	√	√
	DSE B-6-2 (PR)	1. Isolation of pure culture by streak plate technique. 2. Antibiotic sensitivity assay by paper disc method 3. Staining of <i>Aspergillus niger</i> by lactophenol cotton blue. [A. niger from rotten citrus fruit]	√	√	√		√	√	√

Paper	COURSE DURATION Semester – 6 Six months	COURSE DETAIL	PROGRAM OUTCOMES (PO)						
			A	B	C	D	E	F	G
SEC - B	SEC 1	Biostatistics	√			√	√	√	√
	SEC 2	Bioinformatics	√			√	√	√	√


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DINABANDHU ANDREWS COLLEGE

AFFILIATED TO UNIVERSITY OF CALCUTTA

Department of Physics

UNDERGRADUATE SECTION

Model Reference: University of Calcutta, Syllabus for Physics Advanced (CBCS)

[with effect from July 2018 (2018-19)] (Notification No. CSR/12/18) &

[with effect from July 2019 (2019-20)] (Notification No. CSR/47/19)

The Programme Outcomes (PO) of B.Sc. Honours Physics Curriculum:

Programme Outcomes Nos	Programme Outcomes (PO)
PO A	To prepare the students for M.Sc course as well as to persuade research as a career.
PO B	To impart knowledge in basic sciences and mathematics.
PO C	Develop skills to solve complex scientific problems and gain further expertise to frame further topics for research based on that.
PO D	To develop ability to work effectively as an individual in a group of fellow classmates in laboratory classes.
PO E	Be familiar with modern techniques to run sophisticated instruments, using application software and to fabricate and run different types of electrical and electronic circuits.
PO F	Become acquainted in solving different analytical problems of Physics.
PO G	To comprehend and write effective laboratory notebooks and design documentation, prepare effective presentations, and give and receive clear instructions.
PO H	To develop skills to work in interdisciplinary groups.
PO I	To develop skills to adjust in the current context of rapid technological change of computational and experimental scenario.
PO J	To percolate scientific temperament in the juniors as well as outside of the scientific community.

Programme Specific Outcomes Nos	Programme Specific Outcomes (PSO)
PSO 1	Put in applications in emerging and diversified areas of Physics for higher studies, research and industries related to software and hardware techniques
PSO 2	Develop leadership and managerial skills for to become a competent professional
PSO 3	To develop skills in the field of front level communication technologies (ICT) to communicate innovating ideas and solutions in existing/novel challenges to others
PSO 4	To be acquainted and equipped with good laboratory practices and safety measures

Mapping of PO & PSO for Physics Hons Syllabus of University of Calcutta

Programme Specific Outcomes (PSO) Nos	Programme Outcomes (PO)									
	A	B	C	D	E	F	G	H	I	J
PSO 1	√	√	√		√	√	√			
PSO 2	√			√			√		√	√
PSO 3	√				√	√		√		
PSO 4	√			√	√			√		

Programme Outcome mapping for Semester wise Courses in Physics Honours under University of Calcutta

TABLE I

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)									
		A	B	C	D	E	F	G	H	I	J
SEMESTER-I	PHS-A-CC-1-1-TH, Mathematical Physics – I(Theory)	√	√	√		√	√		√	√	√
	PHS-A-CC-1-1-P, Mathematical Physics - I (Practical)	√	√	√	√	√	√		√	√	

Papers:	PHS-A-CC-1-2-TH Mechanics (Theory)	√	√	√		√	√		√		√
	PHS-A-CC-1-2-P Mechanics (Practical)	√	√	√	√	√			√		√

TABLE II

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)									
		A	B	C	D	E	F	G	H	I	J
SEMESTER-2 Papers:	PHS-A-CC-2-3-TH, Electricity and Magnetism (Theory)	√	√	√		√				√	√
	PHS-A-CC-2-3-P, Electricity and Magnetism (Practical)	√	√		√	√		√		√	√
	PHS-A-CC-2-4-TH Waves and Optics (Theory)	√	√	√		√	√			√	√
	PHS-A-CC-2-4-P Waves and Optics (Practical)	√			√	√		√			√

TABLE III

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)									
		A	B	C	D	E	F	G	H	I	J
SEMESTER- 3 Papers:	PHS-A-CC-3-5-TH, Mathematical Physics - II (Theory)	√	√	√		√	√		√	√	√
	PHS-A-CC-3-5-P, Mathematical Physics - II (Practical)	√	√	√	√	√	√			√	
	PHS-A-CC-3-6-TH, Thermal Physics (Theory)	√	√						√	√	
	PHS-A-CC-3-6-P, Thermal Physics (Practical)	√			√	√		√			√

	PHS-A-CC-3-7-TH Modern Physics (Theory)	√			√	√				√	
	PHS-A-CC-3-7-P Modern Physics (Practical)	√	√		√	√		√	√	√	
	PHS-A-SEC A1 Scientific Writing (Project)	√	√	√	√	√		√		√	
	PHS-A-SEC A2 Renewable Energy	√	√						√		√

TABLE IV

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)									
		A	B	C	D	E	F	G	H	I	J
SEMESTER- 4	PHS-A-CC-4-8-TH, Mathematical Physics - III (Theory)	√	√	√		√	√		√	√	√
	PHS-A-CC-4-8-P, Mathematical Physics - III (Practical)	√	√	√	√	√	√			√	
	Papers: PHS-A-CC-4-9-TH, Analog Electronics (Theory)	√	√	√					√	√	√
	PHSA-CC-4-9-P, Analog Electronics (Practical)	√	√	√	√	√		√			√
	PHS-A-CC-4-10-TH, Quantum Mechanics (Theory)	√			√	√					√
	PHS-A-CC-4-10-P Quantum Mechanics (Practical)	√			√	√		√			√

	PHS-A-SEC B1 Arduino (Project)	√	√	√	√	√		√		√	
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TABLE V

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)									
		A	B	C	D	E	F	G	H	I	J
SEMESTER- 5 Papers:	PHS-A-CC-5-11-TH, Electromagnetic Theory (Theory)	√	√	√			√		√	√	√
	PHS-A-CC-5-11-P, Electromagnetic Theory (Practical)	√	√	√		√	√			√	
	PHS-A-CC-5-12-TH, Statistical Physics (Theory)	√	√	√							√
	PHS-A-CC-5-12-P, Statistical Physics (Practical)	√	√	√	√	√	√			√	
	DSE A1 Advanced Mathematical Methods (Theory) Laser and Fiber Optics (Theory)	√	√						√		√
	DSE B1 Astronomy and Astrophysics (Theory) Nuclear & Particle Physics - (Theory)	√	√	√					√	√	√




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TABLE VI

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)									
		A	B	C	D	E	F	G	H	I	J
SEMESTER- 6 Papers:	PHS-A-CC-6-13-TH, Digital Electronics (Theory)	√	√							√	
	PHS-A-CC-6-13-P, Digital Electronics (Practical)		√	√			√	√			
	PHS-A-CC-6-14-TH Solid State Physics (Theory)	√	√	√					√		√
	PHS-A-CC-6-14-P Solid State Physics (Practical)	√	√	√			√		√		
	DSE A2 (a)Nanomaterials (Theory) (b)Advanced Classical Dynamics (Theory)	√	√	√	√		√	√	√		√
	DSE B2 (a)Communication Electronics (Theory) (b)Advanced Statistical Mechanics (Theory)	√	√	√	√		√	√	√		√


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Department of Chemistry

UNDERGRADUATE SECTION

Model Reference: University of Calcutta, Syllabus for Chemistry Advanced (CBCS)

[with effect from July 2018 (2018-19)] (Notification No. CSR/12/18)

The Programme Outcomes (PO) of B.Sc. Honours Chemistry Curriculum:

Programme Outcomes Nos	Programme Outcomes (PO)
PO A	To prepare the students to motivate them for higher education, to take up research as a career and a successful career in industry.
PO B	To provide strong foundation in basic sciences and mathematics.
PO C	To identify, formulate and analyze complex scientific problems.
PO D	To develop individual and teamwork by functioning effectively as an individual or as a member in a group in laboratory classes.
PO E	Introduction to advanced instrumentation using modern experimental techniques, ability to independently execute experiments in specially designed chemical glassware as well as handling sophisticated digital instruments.
PO F	To learn documentation and record keeping of laboratory notebooks in a logical and meticulous manner, develop communication skills such as being able to understand and write well, prepare effective presentations, and give and receive clear instructions.
PO G	To develop an opportunity to work in interdisciplinary groups.
PO H	To inculcate scientific temperament in young minds and outside the scientific community.

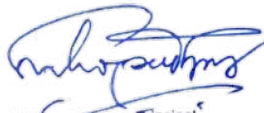
Programme Specific Outcomes Nos	Programme Specific Outcomes (PSO)
PSO 1	Apply knowledge in emerging and varied areas of Chemistry for higher studies, research and industry and to be acquainted with state-of the art techniques & technologies.
PSO 2	To develop leadership and managerial skills promoting the need for lifelong learning as required for a competent professional.
PSO 3	To develop a neat experimental hand in conformity with good laboratory practices including safety measures.

Mapping of PO & PSO for Chemistry Honours Syllabus of University of Calcutta

Programme Specific Outcomes (PSO) Nos.	PROGRAM OUTCOMES (PO)							
	A	B	C	D	E	F	G	H
PSO 1	√	√	√			√	√	√
PSO 2	√	√	√			√	√	√
PSO 3	√	√	√	√	√	√	√	√

TABLE I (SEMESTER-1)

Paper	COURSE DURATION	COURSE DETAIL	PROGRAM OUTCOMES (PO)							
	Semester 1 6 Months		A	B	C	D	E	F	G	H
INORGANIC CHEMISTRY - 1	CEMA – CC - 1-1(TH)	1) Extra nuclear Structure of atom	√	√	√				√	√
		2) Acid-Base reactions	√	√	√				√	√
		3) Redox reactions	√	√	√				√	√
	CEMA – CC - 1-1(P)	1) Acid and Base Titrations: (DEMO ONLY) 2) Oxidation-Reduction Titrations	√	√	√	√	√	√	√	√


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Paper	COURSE DURATION Semester-I 6 Months	COURSE DETAIL	PROGRAM OUTCOMES (PO)							
			A	B	C	D	E	F	G	H
ORGANIC CHEMISTRY-1A	CEMA – CC - 1-1(TH)	Bonding & Physical Properties	√	√	√				√	
		General Treatment of Reaction Mechanism I	√	√	√				√	
	CEMA – CC - 1-1(P)	Separation of Components of a binary solid mixture	√	√	√	√		√		
ORGANIC CHEMISTRY - 1B	CEMA – CC - 1-2(TH)	Stereochemistry I	√	√	√				√	
		General Treatment of Reaction Mechanism II	√	√	√				√	
	CEMA – CC - 1-2(P)	Determination of Boiling Points				√		√		
PHYSICAL CHEMISTRY - 1	CEMA – CC - 1-2(TH)	Kinetic Theory & Gaseous State		√	√				√	√
		Transport Processes		√					√	√
		Chemical Kinetics	√	√			√	√		
	CEMA – CC - 1-2(P)	Physical Chemistry Practical		√		√	√	√	√	√



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TABLE II

Semester- II (Six months)----- NO CORE COURSE IN PHYSICAL CHEMISTRY

Paper	COURSE DURATION Semester-II 6 Months	COURSE DETAIL	PROGRAM OUTCOMES (PO)							
			A	B	C	D	E	F	G	H
ORGANIC CHEMISTRY - 2	CEMA – CC - 2-3(TH)	Stereochemistry II	√	√	√				√	
		General Treatment of Reaction Mechanism III	√	√	√				√	
		Substitution and Elimination Reactions		√	√				√	
	CEMA – CC - 2-3(P)	Organic Preparations	√			√	√	√		
INORGANIC CHEMISTRY - 2	CEMA – CC - 2-4(TH)	Chemical Bonding-I	√	√	√				√	√
		Chemical Bonding-II	√	√	√				√	√
		Radioactivity	√	√	√				√	√
	CEMA – CC - 2-4(P)	1. Iodo- / Iodimetric Titrations 2. Estimation of metal content in some selective samples	√	√	√	√	√	√	√	√

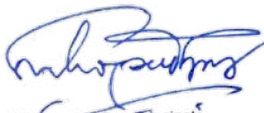

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TABLE III (SEMESTER-3)

Paper	COURSE DURATION Semester-III 6 Months	COURSE DETAIL	PROGRAM OUTCOMES (PO)							
			A	B	C	D	E	F	G	H
PHYSICAL CHEMISTRY - 2	CEMA – CC - 3-5(TH)	Chemical thermodynamics-I	√	√	√				√	√
		Chemical thermodynamics-II	√	√	√				√	√
		Systems of Variable Composition		√	√			√		√
		Electrochemistry					√		√	√
	CEMA – CC - 3-5(P)	Physical Chemistry Practical		√	√	√	√	√	√	√
INORGANIC CHEMISTRY - 3	CEMA – CC - 3-6(TH)	Chemical periodicity				√	√			
		Chemistry of <i>s</i> and <i>p</i> Block Elements				√				
		Noble Gases			√	√				
		Inorganic Polymers			√	√				
	Coordination Chemistry-I			√	√	√				
	CEMA – CC - 3-6(P)	1) Complexometric titration 2) Chromatography of metal ions 3) Gravimetry	√	√	√	√	√	√	√	√
ORGANIC CHEMISTRY - 3	CEMA – CC - 3-7(TH)	Chemistry of Alkenes and Alkynes		√	√				√	√
		Aromatic Substitution		√				√		
		Carbonyl and Related Compounds	√	√		√				
		Organometallics					√	√	√	
		CEMA – CC - 3-7(P)	A. Identification of a Pure Organic Compound (Solid and Liquid) B. Quantitative Estimations					√	√	√

Paper	COURSE DURATION Semester-III 6 Months	COURSE DETAIL	PROGRAM OUTCOMES (PO)							
			A	B	C	D	E	F	G	H
	SEC 1	Mathematics and Statistics for Chemists	√	√	√		√		√	√

SEC - A	SEC 2	Analytical Clinical Biochemistry	√	√	√				√	√
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TABLE IV (SEMESTER-4)

Paper	COURSE DURATION Semester-IV 6 Months	COURSE DETAIL	PROGRAM OUTCOMES (PO)							
			A	B	C	D	E	F	G	H
ORGANIC CHEMISTRY - 4	CEMA – CC - 4-8(TH)	Nitrogen compounds	√	√					√	
		Rearrangements	√	√	√				√	
		The Logic of Organic Synthesis	√	√	√				√	
		Organic Spectroscopy	√	√	√		√		√	√
	CEMA – CC - 4-8(P)	Qualitative Analysis of Single Solid Organic Compounds		√		√		√		
PHYSICAL CHEMISTRY - 3	CEMA – CC - 4-9(TH)	Application of Thermodynamics-II		√	√		√		√	√
		Foundation of Quantum Mechanics	√	√	√				√	√
		Crystal Structure	√		√				√	
	CEMA – CC - 4-9(P)	Physical Chemistry Practical		√	√	√	√	√	√	√
INORGANIC CHEMISTRY - 4	CEMA – CC - 4-10(TH)	Coordination Chemistry - II	√	√	√				√	√
		Chemistry of d- and f- Block Elements	√	√					√	√
		Reaction Kinetics and Mechanism	√	√	√				√	√
	CEMA – CC - 4-10(P)	Inorganic Preparations	√	√		√	√	√	√	√

Paper	COURSE DURATION Semester-IV 6 Months	COURSE DETAIL	PROGRAM OUTCOMES (PO)							
			A	B	C	D	E	F	G	H
SEC - B	SEC 3	Pharmaceuticals chemistry	√	√	√				√	√
	SEC 4	Pesticide chemistry	√	√	√				√	√

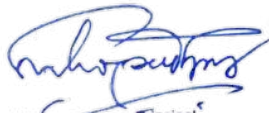

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TABLE V (SEMESTER-5)**Semester- 5 (Six months)-----NO CORE COURSE IN INORGANIC CHEMISTRY**

Paper	COURSE DURATION Semester-V 6 Months	COURSE DETAIL	PROGRAM OUTCOMES (PO)							
			A	B	C	D	E	F	G	H
PHYSICAL CHEMISTRY - 4	CEMA – CC - 5-11(TH)	Quantum Chemistry II	√	√	√				√	√
		Statistical thermodynamics	√	√	√				√	√
		Numerical Analysis		√	√			√	√	√
	CEMA – CC - 5-11(P)	Computer programs based on numerical methods		√	√	√	√	√	√	√
ORGANIC CHEMISTRY - 5	CEMA – CC - 5-12(TH)	Carbocycles and Heterocycles	√	√	√				√	
		Cyclic Stereochemistry	√	√	√					
		Pericyclic Reactions	√	√	√				√	
		Carbohydrates		√	√				√	√
		Biomolecules	√	√	√				√	√
	CEMA – CC - 5-12(P)	Chromatographic Separations	√		√	√	√	√	√	
		Spectroscopic Analysis of Organic Compounds	√	√	√	√	√	√	√	

Paper	COURSE DURATION Semester-V 6 Months	COURSE DETAIL	PROGRAM OUTCOMES (PO)							
			A	B	C	D	E	F	G	H
DSE - A	DSE A-2	Applications of Computers in Chemistry	√	√	√			√	√	√
	PRACTICALS - DSE A-2	Applications of Computers in Chemistry	√	√	√	√		√	√	
DSE - B	DSE B-1	Inorganic Materials of Industrial importance	√	√	√				√	√
	PRACTICALS - DSE B-1	Inorganic Materials of Industrial importance	√	√		√	√	√	√	√

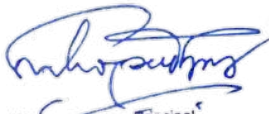
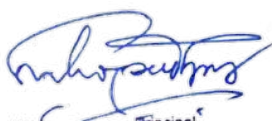

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TABLE VI (SEMESTER-6)**Semester- 6 (Six months)-----NO CORE COURSE IN ORGANIC CHEMISTRY**

Paper	COURSE DURATION Semester-VI 6 Months	COURSE DETAIL	PROGRAM OUTCOMES (PO)							
			A	B	C	D	E	F	G	H
INORGANIC CHEMISTRY - 5	CEMA – CC - 6-13(TH)	Theoretical Principles in Qualitative Analysis	√	√				√	√	√
		Bioinorganic Chemistry	√	√	√				√	√
		Organometallic Chemistry	√	√	√				√	√
		Catalysis by Organometallic Compounds	√	√	√				√	√
	CEMA – CC - 6-13(P)	Qualitative semimicro analysis of mixtures containing not more than three radicals. Emphasis should be given to the understanding of the chemistry of different reactions.	√	√		√	√	√	√	√
PHYSICAL CHEMISTRY - 5	CEMA – CC - 6-14(TH)	Molecular Spectroscopy	√		√		√		√	√
		Photochemistry & Theory of Reaction rate		√	√					√
		Surface Phenomenon		√	√				√	
	CEMA – CC - 6-14(P)	Physical Chemistry Practical		√	√	√	√	√	√	√

Paper	COURSE DURATION Semester-VI 6 Months	COURSE DETAIL	PROGRAM OUTCOMES (PO)							
			A	B	C	D	E	F	G	H
DSE - A	DSE A-3	Green chemistry and chemistry of Natural Products	√	√	√				√	√
	PRACTICALS - DSE A-3	Green chemistry and chemistry of Natural Products	√	√	√	√		√	√	
DSE - B	DSE B-4	DISSERTATION	√	√	√	√	√	√	√	√


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DINABANDHU ANDREWS COLLEGE

AFFILIATED TO UNIVERSITY OF CALCUTTA

Department of Electronics

UNDERGRADUATE SECTION

Model Reference: University of Calcutta, Syllabus for Electronics Advanced (CBCS)

[with effect from July 2018 (2018-19)] [with effect from July 2018 (2018-19)]

The Programme Outcomes (PO) of B.Sc. Honours Electronics Curriculum:

Programme Outcomes Nos	Program Outcome (PO)
PO-A	The objective is to establish robust groundwork in fundamental sciences and mathematics.
PO-B	To utilize contemporary methodologies, advanced apparatus, and up-to-date software applications using deep understandings.
PO-C	To manage diverse categories of modern electrical and electronic circuits.
PO-D	To identify, formulate, and analyze intricate scientific problems towards well-supported conclusions.
PO-E	To cultivate proficiency in computational problem-solving for various analytical challenges in the field of Electronics.
PO-F	To develop written and verbal communication skills while dealing with electronics-related topics
PO-G	To develop a logical and scientific mindset in youth.
PO-H	To inspire interdisciplinary students to understand modern trends in applied electronics.
PO-I	To adequately equip students for a prosperous career in industry, as well as to inspire them towards pursuing higher education and a career in research.
PO-J	To develop the ability of independent learning despite of the technological up-gradation throughout the rest of life.
PO-K	To cultivate both individual and collaborative skills as an individual or as a member of a team during laboratory sessions.
PO-L	To inspire the students to apply their concept of electronics to understand their electronic gadgets in a more efficient way.

Programme Specific Outcomes Nos	Program Specific Outcome (PSO)
PSO-1	To develop scientific ability in the students so they can understand modern science and technology related to the society.
PSO-2	To utilize knowledge in emerging areas of electronics for higher studies, research, and industries that relate to software and hardware applications.
PSO-3	To develop the skill of using modern laboratories of electronics and respective ISO certified safety measures.

PSO-4	To develop leadership and managerial abilities, and comprehend the importance of ongoing learning to become a competitive professional.
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Mapping of PO & PSO for Electronics Honours Syllabus under the University of Calcutta

Serial Numbers	Program Outcome (PO)											
	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H	PO-I	PO-J	PO-K	PO-L
PSO-1	✓	✓	✓	✓			✓		✓	✓	✓	✓
PSO-2	✓	✓	✓		✓			✓		✓		✓
PSO-3			✓								✓	✓
PSO-4					✓	✓	✓		✓	✓	✓	

❖ Semester wise Programme Outcome mapping for Electronics Honours (CBCS System) under University of Calcutta

Semester - 1													
COURSE DETAIL	Program Outcome (PO)												
	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H	PO-I	PO-J	PO-K	PO-L	
CC-1 (Theory & Practical) Basic Circuit Theory and Network Analysis			✓	✓		✓	✓		✓	✓	✓	✓	
CC-2 (Theory & Practical) Mathematics Foundation for Electronics	✓			✓	✓		✓			✓	✓	✓	

Semester - 2													
COURSE DETAIL	Program Outcome (PO)												
	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H	PO-I	PO-J	PO-K	PO-L	
CC-3 (Theory & Practical) Applied Physics	✓			✓			✓	✓		✓	✓	✓	
CC-4 (Theory & Practical) C Programming and Data Structure		✓			✓		✓		✓	✓	✓	✓	

Semester - 3													
COURSE DETAIL	Program Outcome (PO)												
	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H	PO-I	PO-J	PO-K	PO-L	
CC-5 (Theory & Practical) Semiconductor Device	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	

CC-6 (Theory & Practical) Electronic Circuits			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CC-7 (Theory & Practical) Electromagnetics	✓			✓			✓		✓	✓	✓	✓
SEC -1 Circuit Modeling using PSPICE		✓			✓		✓		✓	✓	✓	✓

Semester - 4												
COURSE DETAIL	Program Outcome (PO)											
	PO -A	PO -B	PO -C	PO -D	PO -E	PO -F	PO -G	PO -H	PO -I	PO -J	PO -K	PO -L
CC-8 (Theory & Practical) Operational Amplifiers and Applications			✓		✓	✓	✓		✓	✓	✓	✓
CC-9 (Theory & Practical) Digital Electronics and VHDL		✓	✓			✓	✓		✓	✓	✓	✓
CC-10 (Theory & Practical) Signals and Systems		✓	✓	✓		✓	✓		✓	✓	✓	✓
SEC -2 Programming with Matlab/Scilab		✓			✓		✓		✓	✓		

Semester - 5												
COURSE DETAIL	Program Outcome (PO)											
	PO -A	PO -B	PO -C	PO -D	PO -E	PO -F	PO -G	PO -H	PO -I	PO -J	PO -K	PO -L
CC-11 (Theory & Practical) Electronic Instrumentation			✓	✓		✓	✓	✓	✓	✓	✓	✓
CC-12 (Theory & Practical) Microprocessors and Microcontrollers		✓			✓	✓	✓		✓	✓	✓	✓
DSE-1 (Theory & Practical) Control Systems		✓	✓			✓	✓	✓	✓	✓	✓	✓
DSE-2 (Theory & Practical) Power Electronics			✓			✓	✓	✓	✓	✓	✓	✓

Semester - 6												
COURSE DETAIL	Program Outcome (PO)											
	PO -A	PO -B	PO -C	PO -D	PO -E	PO -F	PO -G	PO -H	PO -I	PO -J	PO -K	PO -L
CC-13 (Theory & Practical) Communication Electronics			✓			✓	✓		✓	✓	✓	✓
CC-14 (Theory & Practical) Photonics			✓					✓	✓	✓	✓	✓
DSE-3 (Theory & Practical) Basic VLSI Design		✓	✓					✓	✓	✓	✓	✓
DSE-4 (Theory & Practical) Transmission Lines, Antenna and Microwave Devices		✓	✓			✓		✓	✓	✓	✓	✓


❖ Programme Outcome mapping for Electronics Honours (1+1+1 System) under University of Calcutta

Part – I (1 st year)													
Module	COURSE DETAIL	Program Outcome (PO)											
		PO -A	PO -B	PO -C	PO -D	PO -E	PO -F	PO -G	PO -H	PO -I	PO -J	PO -K	PO -L
I	Paper – I Mathematical Methods & Classical and Quantum Mechanics	✓	✓		✓	✓		✓			✓		
II	Paper – II Electromagnetism- I, Linear Circuits and Nonlinear Devices and Circuits I & Practical			✓			✓	✓	✓	✓	✓	✓	✓

Part – II (2 nd year)													
Module	COURSE DETAIL	Program Outcome (PO)											
		PO -A	PO -B	PO -C	PO -D	PO -E	PO -F	PO -G	PO -H	PO -I	PO -J	PO -K	PO -L
I	Paper – III Thermal, Statistical and Solid State Physics &	✓	✓	✓		✓	✓	✓			✓		✓

	Nonlinear Devices and Circuits II												
II	Paper – IV Instrumentation and Digital Electronics I & Practical		✓	✓			✓	✓	✓	✓	✓	✓	✓

Part – III (3 rd year)													
Module	COURSE DETAIL	Program Outcome (PO)											
		PO -A	PO -B	PO -C	PO -D	PO -E	PO -F	PO -G	PO -H	PO -I	PO -J	PO -K	PO -L
I	Paper – V Electromagnetism II and Electronic Communication & Microwave Electronic Devices, Optics and Photonics	✓	✓		✓			✓			✓	✓	✓
	Paper – VI Digital Electronics II and Introduction to Computers and C programming & Introduction to the 8085 Microprocessor		✓			✓	✓	✓	✓		✓	✓	✓
II	Paper – VII (Practical) Experiments with Analog Integrated Circuits and on Communication Systems & Experiments on Digital Electronics		✓	✓			✓	✓	✓		✓	✓	✓
	Paper – VIII (Practical) Assembly Language Programming on the 8085 Microprocessor & Computer programming in C language		✓	✓	✓	✓	✓	✓			✓	✓	✓


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Department of Geography

UNDERGRADUATE SECTION

Model Reference: University of Calcutta, Syllabus for Geography Advanced (CBCS)

[with effect from July 2018 (2018-19)] (Notification No. CSR/12/18)

The Programme Outcomes (PO) of B.Sc. Honours Geography Curriculum:

Programme Outcomes Nos	Programme Outcomes (PO)
PO A	To motivate and prepare students to be successful professionals in different academic, administration fields. To inspire students for higher studies to pursue career as researchers.
PO B	To enable students to have a good understanding and strong foundation of the subject.
PO C	To develop knowledge in several branches of physical and social Geography. To make students understand about different aspects of man-environment interactions and related issues and to explore the measures for sustainability of earth's environment.
PO D	To develop team spirit within students to work in group during practical classes, field visits <i>etc.</i> and for preparing Project Report, Presentation <i>etc.</i> Also, to develop confidence and ability of preparing Laboratory Note book, Project report <i>etc.</i> individually.
PO E	To develop students' ability to apply and use different cartographic methods, statistical methods, mapping software, survey instruments, topographical maps, aerial photographs, satellite images while preparing project reports, research articles <i>etc.</i>
PO F	To develop ability of the students to analyse and solve different issues related to the subject.
PO G	To make students able to prepare proper laboratory notebooks, Project Report and to do effective field survey and proper representation the survey outcomes in Field Report. To develop students to apply those in their academic purposes as well.
PO H	Developing students' ability to work with professional from different subjects as Geography itself has a strong interdisciplinary foundation.
PO I	To grow interest within students to continue learning of Geography independently.
PO J	To develop objectivity within the students. To raise wholistic and interdisciplinary essence of the Geography within the students which will benefit the students to enrich the subject through research in future.

Programme Specific Outcomes Nos	Programme Specific Outcomes (PSO)
PSO 1	To teach the elementary and emergent arenas of Geography for application in higher studies as well as in research.
PSO 2	To develop skills and capacities to be dynamic and adaptive to be a competent human resource.
PSO 3	To grow knowledge and capacities for environment appraisal through assessing air, water, noise and soil qualities. To develop knowledge of applying techniques of cartography, RS and GIS etc.
PSO 4	To develop subject's knowledge within students so that they can apply their knowledge for field work and future studies and research.

Mapping of PO & PSO for Geography Hons Syllabus of University of Calcutta

Programme Specific Outcomes (PSO) Nos	Programme Outcomes (PO)									
	A	B	C	D	E	F	G	H	I	J
PSO 1	√	√	√	√	√	√		√		
PSO 2	√	√	√	√	√		√			
PSO 3	√	√	√	√	√	√		√		
PSO 4	√	√	√	√	√					

Programme Outcome mapping for Partial Semester wise Courses in Geography Honours under University of Calcutta

TABLE I

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
Semester I Papers:	CC1-01 Geotectonics & Geomorphology	√	√	√	√	
	CC1-02 Cartographic Techniques	√	√	√	√	



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TABLE II

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
Semester II Papers:	CC 2-03 Human Geography	√	√	√		
	CC 2-04 Thematic Mapping & Surveying	√	√	√	√	

TABLE III

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
Semester III Papers:	CC 3 -05 Climatology	√	√	√	√	√
	CC 3- 06 Hydrology & Oceanography	√	√	√	√	√
	CC 3- 07 Statistical Method in Geography	√	√	√	√	√
	GEO-A-SEC- A-3- 01 Coastal Management	√	√	√	√	



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TABLE IV


COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
Semester IV Papers:	CC 4- 08 Economic Geography	√	√	√		
	CC 4- 09 Regional Planning & Development	√	√	√	√	
	CC 4- 10 Soil and Biogeography	√	√	√	√	
	GEO-A SEC B-4-04 Sustainable Development	√	√	√	√	

TABLE V

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
Semester V Papers:	CC-5-11 Research Methodology & field Work	√	√	√	√	
	CC-5-12 Remote Sensing & GNSS	√	√	√	√	
	GEO -A DSE A -2 Climate Change: Vulnerability and Adaptations	√	√	√	√	
	GEO -A DSE B 5 Cultural and Settlement Geography	√	√	√		

TABLE VI

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
Semester VI Papers:	Geographical Thought	√	√	√	√	√
	Disaster Management	√	√	√	√	√
	GEO-A-DSE A-4 Resource Geography	√	√	√	√	√
	GEO-A-DSE B-7 Urban Geography	√	√	√	√	√


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DINABANDHU ANDREWS COLLEGE

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Department of Economics

UNDERGRADUATE SECTION

Model Reference: University of Calcutta, Syllabus for Economics Advanced (CBCS)

[with effect from July 2018 (2018-19)] (Notification No. CSR/12/18)

The Programme Outcomes (PO) of B.Sc. Honours Economics Curriculum:

Programme Outcomes No.s	Programme Outcomes (PO)
PO A	To motivate and prepare students for higher education in Economics, as well as to make them equipped to pursue a career in academia, industry, or entrepreneurship.
PO B	To provide a solid foundation in economic theory, with a focus on applied and policy issues, mathematics, and statistics, as well as to train them in quantitative tools and techniques necessary for solving economic problems.
PO C	To engage in self-directed and life-long learning in the context of changing economic scenarios.
PO D	To improve communication skills such as writing reports on socioeconomic problems, making effective presentations, and giving and receiving clear instructions.
PO E	To develop in their minds a logical, and analytical temperament.

Programme Specific Outcomes Nos	Programme Specific Outcomes (PSO)
PSO 1	Gain the necessary knowledge to innovate and provide effective solutions in the various fields of Economics.
PSO 2	Succeed in academic and professional careers by showcasing leadership and managerial skills, ethical behavior, effective communication, and understanding the need for learning.
PSO 3	Improve analytical skills through interactive and participatory learning.

PSO 4	Make use of Information and Communication Technology (ICT) for generating new ideas in the emerging areas of Economics
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Mapping of PO & PSO for Economics Honours CBCS Syllabus University of Calcutta, with effect from 2018-19

Programme Specific Outcomes (PSO) Nos	Programme Outcomes (PO)				
	A	B	C	D	E
PSO 1	√	√	√	√	√
PSO 2	√		√	√	
PSO 3	√	√	√	√	√
PSO 4	√	√	√	√	√

Programme Outcome mapping for Choice Based Credit System Semester-wise Courses in Economics Honours University of Calcutta, with effect from 2018-19

TABLE I

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
Semester I	CC 1-1 Introductory Microeconomics	√	√	√	√	√
	CC 1-2 Mathematical Methods for Economics-I	√	√	√		√
Semester II	CC 2-3 Introductory Macroeconomics	√	√	√	√	√
	CC 2-4 Mathematical Methods for Economics-II	√	√	√		√

TABLE II

COURSE	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
Semester III	CC3-5 Intermediate Microeconomics-I	√	√	√	√	√
	CC 3-6 Intermediate Macroeconomics-I	√	√	√	√	√

	CC 3-7 Statistics for Economics	√	√	√		√
	SEC 3-1A Data Analysis / Rural Development	√	√	√	√	√
Semester IV	CC 4-8 Intermediate Microeconomics-II	√	√	√	√	√
	CC 4-9 Intermediate Macroeconomics-II	√	√	√	√	√
	CC 4-10 Introductory Econometrics	√	√	√		√
	SEC 4-2B Research Methodology / Managerial Economics	√	√	√	√	√

TABLE III

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)				
		A	B	C	D	E
Semester V	CC 5-11 International Economics	√	√	√	√	√
	CC 5-12 Indian Economy	√	√	√	√	√
	DSE A(1) Applied Econometrics / Economic History of India	√	√	√		√
	DSE B(1) Comparative Economic Development /	√	√	√	√	√
Semester VI	Financial Economics					
	CC-6-13 Public Economics	√	√	√	√	√
	CC-6-14 Development Economics	√		√	√	√
	DSE-A(2) Money and Financial Markets / Issues in Indian Economy	√		√	√	√
	DSE-B(2) Environmental Economics / Issues in Development Economics	√	√	√	√	√

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Department of COMMERCE

UNDERGRADUATE SECTION


Model Reference: University of Calcutta, Syllabus for COMMERCE Advanced (CBCS)

[with effect from July 2018 (2018-19)] (Notification No. CSR/12/18)

The Programme Outcomes (PO) of B.Com. Honours Commerce Curriculum:

Programme Outcome Nos	Programme Outcome (PO)
PO A	<ul style="list-style-type: none">Proper commerce-based understanding will help in developing rational individuals in the society to deal with relevant economic dilemma.
PO B	<ul style="list-style-type: none">Help the students in understanding the concept of Saving-Investment and its impact in the Macro-economic development of the society.
PO C	<ul style="list-style-type: none">Helps in developing the students as rational decision makers, managerial personnel and marketing sales force by studying Financial Management, Human Resource Management and Marketing Management.
PO D	<ul style="list-style-type: none">Knowledge of Accountancy will help the students in understanding the fundamentals of Commerce.
PO E	<ul style="list-style-type: none">Knowledge of computation of direct and indirect taxation helps the students in calculating the Government's estimated revenue.
PO F	<ul style="list-style-type: none">Value based subject help the students to be more ethical while doing business.
PO G	<ul style="list-style-type: none">The curriculum empowers the students with adequate knowledge for practical exposure.
PO H	<ul style="list-style-type: none">Computerised accounting equip the students for job market.

Programme Specific Outcomes Nos	Programme Specific Outcomes (PSO)
PSO 1	<ul style="list-style-type: none"> To be able to prepare and regularly maintain books of accounts for any individual or corporate entities. Students will be able to analyse and interpret the financial statements of organizations to depict their financial performance.
PSO 2	<ul style="list-style-type: none"> . Students will be able to perform Tax Management and Tax Planning .
PSO 3	<ul style="list-style-type: none"> The students gain an understanding of writing techniques of business letter, circulars and other formal notices.
PSO 4	<ul style="list-style-type: none"> The students acquire knowledge of the financial markets prevalent in India and financial system currently operating in the Indian Economy through the Analysis of Capital Market, Stock Exchange, Financial Instruments and Financial Services .
PSO 5	<ul style="list-style-type: none"> Students will acquire knowledge on Auditing. Course in CBCS helps to improve students' abilities and aid in career decision-making.


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Mapping of PO & PSO for Commerce Hons Syllabus of 2018-19 of CU.

PSO	PO							
	A	B	C	D	E	F	G	H
1	√	√	√	√	√	√	√	√
2	√	√	√	√	√	√	√	√
3	√	√	√	√	√	√	√	√
4	√	√	√	√	√	√	√	√
5	√	√	√	√		√	√	√

**Programme Outcome for CBCS Semester wise Courses in Commerce Honours 2018-19 Under
University of Calcutta**

TABLE 1

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)							
		A	B	C	D	E	F	G	H
FIRST YEAR SEMESTER I (6 Months)	GE 1.1 Chg Microeconomics I & Statistics								
	CC 1.1 Chg Business Laws	√			√		√		
	CC 1.2 Chg Principles of Management								
	CC 1.1 Ch Financial Accounting - I								
FIRST YEAR SEMESTER II (6 Months)	GE 2.1 Chg E-Commerce & Business Communication								
	CC2.1 Chg Company Law								
	CC 2.2 Chg Marketing Management and Human Resource Management	√	√	√			√		
	CC 2.1Ch Cost and Management Accounting - I								

SECOND YEAR SEMESTER III (6 Months)	SEC 3.1 Chg Information Technology & Its Application in Business GE 3.1 Chg Business Mathematics & Statistics CC3.1 Ch Financial Accounting II CC3.2 Ch Indian Financial System	√	√	√	√		√		√
SECOND YEAR SEMESTER IV (6 Months)	GE 4.1 Chg Microeconomics II & Indian Economy CC 4.1 Chg Entrepreneurship Development and Business Ethics CC 4.1 Ch Taxation I CC 4.2 Ch Cost and Management Accounting -II	√	√	√	√		√		√
THIRD YEAR SEMESTER V (6 Months)	, CC 5.1Ch Auditing & Assurance CC 5.2 Ch Taxation II DSE 5.1 A* Economics II and Advanced Business Mathematics 6 DSE 5.2 A* Corporate Accounting	√	√	√	√		√		
THIRD YEAR SEMESTER VI (6 Months)	AECC 6.1Chg Environmental Studies SEC 6.1Chg Computerised Accounting and e-Filing of Tax Returns CC 6.1 Ch Project Work DSE 6.1 A** Financial Reporting and Financial Statement Analysis DSE 6.2 A** Financial Management	√	√	√		√		√	

