WEST BENGAL STATE UNIVERSITY

CURRICULUM AND CREDIT FRAMEWORK FOR M.Sc. IN ANTHROPOLOGY PROGRAMME
(w.e,f. 2026-27 SESSION)

CREDIT DISTRIBUTION

SEM	COURSEWORK: CORE		COURSEWORK: ELECTIVE		COURSEWORK: AECC/SEC		RESEARCH THESIS		TOTAL
	NO	CREDIT	NO	CREDIT	NO	CREDIT	NO	CREDIT	
I	5	20			1	2			22
II	5	20							20
III	2	8	3	12	1	2			22
IV			2	8			4	16	24

SEMESTER	COURSE CODE	COURSE NAME	CREDIT
I	**ANT2PCORO1T**	HUMAN EVOLUTION	4
	ANT2PCORO2T	ANALYTICAL APPROACHES IN ARCHAEOLOGY	4
	ANT2PCORO3T	SOCIAL CULTURAL ANTHROPOLOGY	4
	ANT2PCORO4P	PRACTICALS: Advanced Craniometry and Osteometry	4
	ANT2PCORO5P	FIELDWORK	4
	ANT2PAEC01M	FIELD DATA ANALYSIS	2
II	**ANT2PCORO6T**	POPULATION GENETICS AND ADAPTATION	4
	ANT2PCORO7T	SOCIAL CULTURAL ANTHROPOLOGY	4
	ANT2PCORO8T	ADVANCED RESEARCH METHODOLOGY, BIOSTATISTICS, AND RESEARCH ETHICS	4
	ANT2PCORO9P	PRACTICALS	4
	ANT2PCOR10P	FIELDWORK	4
III	**ANT2PCOR11T**	EMERGING FIELD OF ANTHROPOLOGY	4
	ANT2PCOR12T	INDIGENOUS KNOWLEDGE SYSTEM	4
	ANT2PDSE01T	GROUP-A: HUMAN GENETICS OR GROUP-B: OR GROUP-C:	4
	ANT2PDSE02T	GROUP-A: HUMAN BIOLOGY OR GROUP-B: OR GROUP-C:	4
	ANT2PDSE03P	GROUP-A: PRACTICAL OR GROUP-B: PRACTICAL OR GROUP-C: PRACTICAL	4
	ANT2PSEC01M	SOCIAL IMPACT ASSESSMENT	2
IV	**ANT2PDSE04T**	GROUP-A: APPLIED BIOLOGICAL ANTHROPOLOGY OR GROUP-B: OR GROUP-C:	4
	ANT2PDSE05P	GROUP-A: PRACTICAL OR GROUP-B: PRACTICAL OR THEORY OR GROUP-C: PRACTICAL OR THEORY	4
	ANT2PDSE06P	GROUP-A: DISSERTATION OR GROUP-B: DISSERTATION OR GROUP-C: DISSERTATION	4
	ANT2PDSE07P	GROUP-A: DISSERTATION OR GROUP-B: DISSERTATION OR GROUP-C: DISSERTATION	4
	ANT2PDSE08P	GROUP-A: DISSERTATION OR GROUP-B: DISSERTATION OR GROUP-C: DISSERTATION	4
	ANT2PDSE09M	SEMINAR (BASED ON DISSERTATION)	4

GROUP-A: SPECIALIZATION IN BIOLOGICAL ANTHROPOLOGY(Offering at WBSU, Bidhannagar College and Sree Chaitanya College)
GROUP-B: SPECIALIZATION IN ARCHAEOLOGICAL ANTHROPOLOGY (Offering at Bidhannagar College and Sree Chaitanya College)
GROUP-C:SPECIALIZATION IN SOCIAL-CULTURAL ANTHROPOLOGY(Offering at WBSU, Bidhannagar College and Sree Chaitanya College)

SEMESTER - I

ANT2PCOR01T: HUMAN EVOLUTION

Course Outcomes (COs)

After successful completion of the course, the students will be able to:

CO1: Explain the major theories and mechanisms of biological evolution.

CO2: Interpret the principles and applications of molecular anthropology in understanding human origins.

CO3: Analyse the structure and variation of the human genome and evaluate the role of genetic diversity in human evolution.

CO4: Apply the concepts and methods of molecular phylogenetics to reconstruct evolutionary relationships.

CO5: Examine the behavioural patterns of non-human primates and assess their significance in understanding the evolution of human behaviour.

Theory component:

Unit-I: Theories of Evolution: Neo-Darwinism, Synthetic theory, Molecular Evolution; Principles of evolution- Direction: Anagenesis, Cladogenesis; Tempo: Gradualism, Punctuated equilibrium; Species concept, isolating mechanism, speciation.

Unit II: Molecular Anthropology: chemistry and topology of DNA, unique sequences, repetitive DNA, satellite DNA, C-value, genetic code and regulation, mutations damage, DNA repair mechanism. Molecular markers: Concepts of RFLPs, VNTRs, STRs, SNPs, CNVs, mtDNA.

Unit III: Nature and structure of the human genome and its diversity, genomic complexity as illustrated by the genetic basis for immune response, molecular evolution, human genetic diversity, and the genetic basis of human evolution,

Unit IV: Molecular phylogenetics: history of molecular phylogenetics, applications to anthropology, phylogeny: phylogeography: Population structure and gene flow, speciation and hybridization: Out of Africa hypothesis, Multiregional hypothesis, macro-evolution and speciation, studies on population dispersion with regard to mtDNA and Y chromosome, migrations of modern humans.

Unit-V: Primate socio-ecology, Sociobiology; Evolution of behavior, Patterns of social behavior, Reproductive behavior, Examples of Primate Behaviour: Prosimians, Monkeys, Apes.

ANT2PCOR02T: ANALYTICAL APPROACHES IN ARCHAEOLOGY

Course Outcomes (COs)

After the successful completion of the course, the students will be able to-

CO1: Have basic knowledge of Osteoarchaeology and Forensic Archaeology.

CO2: Learn the methods for collecting human bones and other biological evidence from archaeological sites and their preliminary analysis.

CO3: Learn sedimentological, stratigraphic and pedological methods to understand archaeological sites and their formation processes.

CO4: Will learn about different methods for studying and documenting Prehistoric arts.

Theory component:

1. **Osteoarchaeology and Forensic archaeology:** Aim and scope, task; evidence searches

(Human skeletal remains); Evidence recovery (archaeological investigations scene location, evidence collection and preservation); Biological profiling, Activity markers and detection of pathological evidences using Osteoarchaeology.

2. **Geoarchaeology and Environmental Archaeology:** Definition, Aim and scope; methods: use of Stratigraphic, Sedimentological and Pedological techniques to understand past environment and site formation process.
3. **Study and Documentation of Prehistoric Art:** Documentation methods- Survey, Text based recording, georeferencing, field sketches- freehand and frame tracing, Photography, 3D recording.

ANT2PCOR03T: SOCIAL CULTURAL ANTHROPOLOGY

1. Using Social-Cultural Anthropology in Contemporary Global Problems: Natural Events, Disasters, & Famine; Inadequate Housing & Homelessness; Family Violence & Abuse; Crime; War; Terrorism; Making the World Better.

2. Employing Anthropology: Anthropology & Advocacy (Defending Livelihood & Knowledge, Human Rights, Land Rights, Participatory Action); Anthropology & Aid (Crossing Boundaries, NGO-graphy, Dealing with Displacement, Understanding Race & Racism); Anthropology & Environment (Environmental Problems, Indigenous Knowledge, Political Ecology, Unpacking Garbage, Human-Animal Relations, Environmentalism); Anthropology, Business & Industry (Money matters, Business, Multinational & Multicultural Communication Media, Marketing Anthropology, Designing Anthropology); Anthropology of Food & Eating (Cultural domains of Globalisation); Images, Visual Culture & Anthropology, Ethnographic Filming, Netnography, Anthropocene

3. Anthropology &Globalisation - Contemporary Issues: Globalisation& Tribals; Consequences of Globalisation (Demographic change, Economic change, Religious change, Political change;
4. Agrarian Social Structure, Agrarian Unrest & Changing Rural Society: Concept of Agrarian Social Structure, Faction. Meaning of land tenure system and land reforms in India.
5. Peasant Movements in India: Moplah Rebellion (1921); Naxalbari Struggle; Other Contemporary peasant struggles.
6. Changing Rural Society: factors - impact of urbanization, industrialization, and modernization; Contemporary Rural – Cultural Changes.

ANT2PCOR04P: PRACTICALS

Course Outcomes (COs)

Upon successful completion of this course, students will be able to:

- **CO 1:** Identify and precisely locate key craniometric and osteometric landmarks on human skeletal remains.
- **CO 2:** Demonstrate proficiency in operating specialized anthropological instruments, including direct goniometers, craniographs, and diaptographs.
- **CO 3:** Execute exact direct angular measurements of the facial and cranial profiles.
- **CO 4:** Compute and analyze geometric and the cubital angle from indirect graphical data.

Practical component:

Unit I: Angular measurements: Cranial (direct):

1. Frontal profile angle,
2. Nasal profile angle,
3. Alveolar profile angle,
4. Frontal angle of Schwalbe.
5. Bregma angle of Schwalbe.
6. Lambda angle of Schwalbe.

Unit II: Indirect measurements: CranialMeasurements on Craniograph:
Cranial Quadrilateral, Superior Facial angle, Calvarial Height, Bregma Position Line, Frontal, Parietal, Occipital Perpendicular, Frontal, Parietal, Occipital Curvature Angles, Calvarial Base Angle.
Unit III: Indirect Measurements: Osteometry: Measurements on Diaptograph Tracing – Femur, Humerus – Cubital Angle,
Unit-IV: Non human Primate behavior study

ANT2PCOR05P: FIELDWORK
Social Field Work

ANT2PAEC01M: FIELD DATA ANALYSIS
Course outcomes (Cos):
After successful completion of the course, students will be able to:
Organize and manage anthropological field data systematically.
Use AI tools for transcription, coding, summarization, and pattern identification.
Perform basic quantitative and qualitative data analysis.
Create tables, charts, and visual representations of field findings.

Course Contents:

Theory component:
Unit I: Introduction to Field Data
Nature and types of anthropological field data: quantitative and qualitative data.
Sources of field data: surveys, interviews, observations, genealogies, and case studies.

Unit II: Data Management and Preparation
Recording, coding, and classification of field data.
Data entry, cleaning, and validation.
Digital management of field notes and interview transcripts.
Introduction to AI-assisted transcription and data organization tools.

Unit III: AI-assisted Data Analysis
Introduction to Artificial Intelligence and its relevance to anthropological research.
Basic descriptive statistics: frequency, percentage, mean, median, and graphical presentation.

Practical Component:
Students shall analyze following from small field dataset (minimum 20 respondents).
Enter and organize data digitally.
Use AI tools for transcription, coding, and summarization.
Prepare tables, charts, and an analytical report based on the collected data.

Semester-II

ANT2PCOR06T:POPULATION GENETICS AND ADAPTATION

Course Outcomes (Cos):

Upon successful completion of this course, students will be able to:

- **CO 1:** Explain the genetic consequences of various mating patterns and evaluate the mathematical models of population structure.
- **CO 2:** Estimate allele, haplotype, and heterozygosity frequencies from raw genetic data, and compute different metrics.
- **CO 3:** Analyze the dynamics of evolutionary forces by mathematically modeling the effects of directional selection, balancing selection.
- **CO 4:** Interpret human phylogenetic relationships and population affinities.
- **CO 5:** Assess the biocultural responses of human populations to environmental stressors by distinguishing between immediate physiological acclimatization and long-term genetic or cultural adaptations.

Theory component:

Unit-I Mating pattern - Random mating, Assortative mating; Consanguinity and Inbreeding co-efficient, Genetic consequences, genetic load; Models of studying population structure- Island model, Isolation by distance model and Stepping stone model.

Unit-II Estimation of allele frequencies - diallelic, multiple alleles, haplotype; Heterozygosity estimation, Polymorphism Information Content (PIC), Quantitative trait loci (QTLs) - Genetics of quantitative and measurable characters; Linkage, mapping, and linkage equilibrium.

Unit-III Population Genetics and Evolution: Concepts of positive and negative selections, Partial selection and complete elimination against recessive homozygote; Partial selection and complete elimination against dominant homozygotes; Selection favouring heterozygotes.

Unit-IV Population phylogeny and affinity: Distance measures - morphometric distance, genetic distance, fixation index (Fst); Display methods - cluster analysis, dendogram and cladogram, principal component analysis.

Unit-V Physical environment – the potential stressors: the nutritional stress, infections, diseases, modernization and human biological responses. Acclimatization and adaptation; Type of adaptation, Physiologic, Genetic and Cultural adaptation in response to Thermal Environment and High altitude adaptation

ANT2PCOR07T: SOCIAL CULTURAL ANTHROPOLOGY

Unit I: Folklore: Concept of "Folk" & "Folklore" in Anthropology; Subfields: Folkloristic Anthropology, History of Folklore Studies – A brief outline. Folklore Studies in Anthropology, Fieldwork, Methods & Techniques in Folkloristic Anthropology.

Unit II: Anthropology and Folklore Studies in India; Regional Folklores in the culture: in Material Culture (Food, dress, architecture, technology etc.). Folk Arts – graphic and performing arts, Recreations (Games & Music).

Unit III: Introduction to Linguistic anthropology – Definition, aims and scopes; History and development of linguistic anthropology; Language and Social Life; Language and Symbols.

Unit IV: Structural linguistics: Morphology, Phonology, Syntax and Semantics.

Unit V: Linguistic relativism – Sapir-Whorf hypothesis, Multilingualism, Language and cognition, Language and socialization.

ANT2PCOR08T: ADVANCED RESEARCH METHODOLOGY, BIOSTATISTICS, AND RESEARCH ETHICS

Course Outcomes (COs):

Upon successful completion of this course, students will be able to:

- **CO 1:** Apply diverse qualitative analytical methods—including thematic coding, content, discourse, and semiotic analysis—to interpret ethnographic data, text patterns, and cultural domains.
- **CO 2:** Formulate hypotheses and perform appropriate inferential statistical tests to determine statistical significance in biocultural data.
- **CO 3:** Synthesize fundamental bioethical principles and regulatory standards to recognize and prevent scientific misconduct.
- **CO 4:** Comply with global publishing standards.
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Theory component:

Unit I: Qualitative data analysis:

1. Text analysis, discourse analysis, ethnographic decision models, folk taxonomies analysis, componential analysis, and analytic induction. Cultural domain analysis, rating scales
2. Coding and categorization, content analysis, semiotic analysis
3. Phenomenology, Grounded Theory as methods of analysing ethnographic data, Questioning participant observation method, Multi-site Ethnography, Ethnography in globalised era and the revolution of ICT.

Unit II: Quantitative data analysis:

1. Normal curve and its deviations
2. Student's t distribution, z-test
3. t-tests (independent sample t test and paired sample t test), F-test and chi square test
4. ANOVA with Post hoc test, ANCOVA
5. Odds ratio, Fisher's exact test,
6. Pearson, Spearman, Partial correlation,
7. Simple linear regression, Multiple linear and logistic regressions

Unit III: Research ethics:

1. Bioethics: History, basic principles
2. Scientific misconducts: Falsification, Fabrication and Plagiarism (FFP)
3. Redundant publications: duplicate and overlapping publications, salami slicing
4. Selective reporting and misrepresentation of data
5. ICMR ethical guidelines

Unit IV: Publication ethics:

1. Publication ethics: definition, introduction and importance;
2. Best practices/standards setting initiatives and guidelines: COPE, WAME etc.
3. Conflicts of interest
4. Publication misconduct: Definition, concept, problems that lead to unethical behaviour and vice versa, types

5. Violation of publication ethics, authorship and contributor ship
6. Identification of publication misconduct, complaints and appeals
7. Predatory publishers and journals
8. Plagiarism and UGC guidelines

ANT2PCOR09P: PRACTICALS

Course Contents:

1. Estimation of allele frequencies from secondary data set: diallelic, multiple allele, haplotype
2. Hetrozygosity score
3. Distance score – Mahalanobis D2, Sanghvi G2
4. Subpopulation variation - Fixation Index (Fst)

ANT2PCOR10P: FIELDWORK: BIOLOGICAL &ARCHAEOLOGICAL ANTHROPOLOGY
Course Contents:

Unit –I Biological Anthropology field report: Field report on studying any Biological variants based on any primary population data.
Unit – II Archaeological Anthropology project report: Project report on Assessing of prehistoric or protohistoric sites for National Register; Potentiality of a target site to become a heritage; Limitations identified and recommendations as per ICOMS and UNESCO.