

M.Sc. HERITAGE CONSERVATION AND MANAGEMENT
CHOICE BASED CREDIT SYSTEM (CBCS)
PROGRAM OF STUDY

The syllabus outlines topics of the various modules of study. These may be further developed as per relevant requirements.

1st Semester

HCM-101: *Bridge course: 'Conserving heritage: A cross-disciplinary overview'* (2 credits)

Unit 1: World Heritage Studies: Key Concepts

Concepts of World Heritage; UNESCO World Heritage Convention; Operational Guidelines, Process of inscription and monitoring, State of Conservation (SoC); Live experience of 43rd UNESCO World Heritage Committee sessions.

Unit 2: Conserving heritage: Socio-political and Ecological Perspectives

World Heritage Conservation from global and local perspectives; Global environmental history and politics; Natural resource conflicts; Culture-nature linkages in Heritage; Ecology and the Human Interface; Heritage and Sustainable Tourism.

HCM-102: Fundamentals of Heritage Conservation – Concepts and Practice(3 credits)

Unit 1: History of conservation movement and emergence of conservation

Definitions and terminologies in conservation; Principles and Approaches of conservation; Global Perspective on heritage conservation (UNESCO, IUCN, ICCROM, UNWTO); Heritage Practice areas; Conservation Ethics; and Open source (literature pool and datasets); Understanding Heritage: Types of Heritage; Heritage conservation - Need, Debate and purpose. Defining Conservation, History of Conservation Movement

Unit 2: Conservation approaches in Cultural Heritage

Architectural Conservation and Historic Building Preservation; Role of Museums; Understanding the building and composition; Basics of material science; Preservation and restoration techniques; Sustainable Urban Planning and Rural

Development; Conservation planning interventions; Role of Government organizations; Community based cultural heritage resource management; Monument conservation and the role of Archaeological Survey of India; case studies of sites such as Hampi, Golconda, Mahabalipuram

Unit 3: Conservation approaches in Geo-ecological Heritage

Geo-ecological heritage of India and world; Opportunities and Challenge; biodiversity loss and protected area management; Principles of ecological restoration; Protocols to monitor ecological values; Introduction to Earth History and Earth Systems; Geomorphology and Palaeontology.

HCM-103: Biodiversity and Natural Heritage: An Overview of Conservation and Management (4 credits)

Unit 1: Biodiversity

Biogeography, biodiversity – definition, values; global patterns in biogeography, biodiversity, threats to biodiversity, causes and consequences of biodiversity loss and decline, overview of floral and faunal diversity of the Indian sub-continent with special emphasis on rare, endangered, threatened and endemic species; biogeographic zone classification; geological formation of special interests; World Natural Heritage sites and their Outstanding Universal Values (OUVs), key taxa of global significance.

Unit 2: Ex-situ & In-situ conservation

Institutional mechanism of natural heritage conservation in India; Protected Area (PA) network and its management; National Parks, Wildlife Sanctuaries, Conservation and Community Reserves, Tiger Reserves, Biosphere Reserves etc.; Working plans; Management plans; basics of habitat and wildlife management; community conservation areas and wildlife outside PAs; species conservation and recovery programmes for globally threatened species including terrestrial, freshwater and marine species (e.g. tiger, elephant, lion, rhino, crocodiles, dugong); role of zoos, aquariums and botanic gardens in conservation; introduction/reintroduction and translocation.

Unit 3: Wildlife research methods

Overview of research methods, techniques and application of modern technology in wildlife research; basics of wildlife population estimation; protocols to monitor biological/ecological OUVs in World Heritage Sites.

Unit 4: Development and conservation

Human dimensions of wildlife conservation; community-based conservation initiatives; conservation induced displacement and rehabilitation; community survey methods including participatory tools and techniques.

Basics of Environmental Impact Assessment (EIA) as a planning, decision support and governance tool; multidisciplinary and objective driven EIA; institutional arrangements, regulatory framework and best practice guidance; Assessment Framework and methodological approaches for mainstreaming biodiversity in impact assessment; mitigation approaches.

Basics of global warming and climate change implications; impacts on natural and cultural heritage; vulnerability, response and adaptations, including impacts on local communities and human well-being. Global conventions, protocols, strategies, and tools for mitigating global warming and climate change impacts.

HCM-104: Anthropological and Archaeological Dimensions of Heritage (4 Credits)

Unit 1: Anthropology

Anthropological Theory and Context: Classical evolutionism, Historical Particularism, Diffusionism, Functionalism, Structural – Functionalism, Structuralism, Culture and personality, Neo-evolutionism, Cultural materialism, Symbolic and interpretive theories, Cognitive theories, Post-modernism in anthropology; Evolution of Indian Culture and Civilization: Prehistoric, Protohistoric. Pre-Harappan, Harappan and post-Harappan Cultures. Contributions of tribal cultures to India civilization, Palaeo – Anthropological evidences from India; Ethnoarchaeology: Ethno-archaeology in India, Survivals and parallels among hunting, forging, fishing, pastoral and peasant communities including arts and crafts producing communities; Anthropology of Tourism; Cultural Narratives; Folklore and Cultural Heritage

Unit 2: Archaeology

Archaeology: Definition, scope, relevance, relation with history and science, terms in archaeology - culture, assemblage; History of Archaeology: From antiquarianism to modern archaeology, Development of field techniques, Growth of archaeology as scientific discipline, History of archaeology in India; Archaeological Theories - A historiographical perspective; Managing Archaeological Sites with reference to World Heritage; Archaeologies of the Modern World; History of archaeological conservation, General principles and guidelines, Role of ASI in India and abroad, Reconstruction and restoration of monuments, Preservation and environmental development, Indigenous practices, Conservation issues in different geographical/seismic zones; Role of civil engineering, art and architecture in

conservation of monuments; Heritage Ethics & Archaeological Practice; Managing Museums; Museum and Site Interpretation; International Conventions

HCM-105: Heritage Governance – Laws and Institution (3 Credits)

Unit 1: Introduction to Heritage Governance

Governance and Government; Heritage governance types – government managed, co-managed, private, indigenous/local community conserved area, etc; Issues in heritage – economic development, illegal trade, armed conflict, climate change; Trends in heritage governance - centralization-decentralisation, government-private, tradition-modernity; Key actors – IGOs, INGOs, State, local government, private companies, NGOs, local communities;

Unit 2: Global Context

Conservation charters – SPAB manifesto, Athens Charter, Venice Charters; International institutions – UNESCO, ICCROM, ICOMOS, IUCN, etc; World Heritage Convention – Operational Guidelines, Outstanding Universal Value, Nominations, Reporting and Monitoring, World Heritage Committee decisions. Common heritage of mankind; Principles of environmental law esp Inter and Intergenerational equity and justice.

Unit 3: National Framework – India

Structure and function of government in India; Constitutional provisions; Heritage laws and regulation; Policy perspective; Institutions – government, non-government, academia; International conventions vis-à-vis national laws

Unit 4: Heritage and People/Community

Community ownership, management (including adaptive co-management), participation, partnership; socio-cultural traditions; local institutions; conflict and cooperation

HCM-106 Heritage Informatics and Technology (3 Credits)

Unit 1: Introduction to Remote Sensing

Definitions, concepts and types of remote sensing, evolution, stages and advantages of remote sensing, spatial data acquisition, Electromagnetic spectrum, Characteristics of electromagnetic radiation, wavelength regions of electromagnetic radiation, types and platforms and sensors. Application of Remote Sensing in Natural Heritage Management, Application of Remote Sensing in Cultural Heritage Management.

Unit 2: Principles GIS and GPS

Basic concepts of GIS, Components of GIS, Data structure and formats Spatial data models – Raster and Vector Data base design - editing and topology creation in GIS, Linkage between spatial and non-spatial data, Data inputting in GIS, Web based GIS Technology, Open Source GIS, Fundamentals of GPS and its applications Geodesy, Components of global positioning system, Factors affecting GPS accuracy, GPS surveying methods and accuracy, Reference station, reference equipments and radios.

Unit 3: Principles of Photogrammetry and Digital Image Processing

Photogrammetry: Basic concepts of measurements of object height and length, Stereo Photogrammetry: Stereovision & Stereoscopes, Stereoscopic Parallax, Digital photogrammetry: Model deformation & Rectification, Relief displacement, Vertical exaggeration, Triangulation, Control & Mapping, Image processing systems, data formats of digital image, pre-processing, image enhancement and transformation and image classification, multispectral images, Visual Image Interpretation, remote sensing products, elements of visual interpretation, interpretation keys, generating thematic maps; thermal and radar image interpretation.

Unit 4: Application of Remote Sensing and GIS in Heritage Management

Management of Heritage Sites: Geologic & Soil mapping, Land-use / land cover Mapping, Land use Classification, Agriculture Applications, Forestry Applications, Water Resource Application, Disaster Management Application, Climate Change Application, Landscape Planning, Wetland Mapping, 3-D Mapping techniques for Cultural and Natural Heritage

HCM-107 Research Methodology (3 Credits)

Unit 1: Social Sciences Methods

Designing Research: research problems, questions and formulating hypothesis; research ethics, Qualitative and Quantitative research methods and techniques: participatory research methods, ethnography, resource assessment and social mapping/planning/audit, sampling, questionnaire, interviews, participant observation, focus group discussion.; management and analysis in social sciences research; ecosystem service assessment and valuation

Unit 2: Methods in Ecology

Biodiversity monitoring techniques: population & habitat estimation methods (Species diversity estimation, Mark-recapture, Distance sampling-line transect & point count, Occupancy modelling, SDM).

Unit 3: Data Science and Visualization

Introduction to data science; basics of machine learning; tools of data science and visualisation; big data analysis; case studies and mock datasets; Advanced statistical tools: Introduction to R, SPSS, InVest (for Ecosystem Services), Open database

2nd Semester

HCM-201 Heritage Risk Management (3 Credits)

Unit 1: Hazard and Risk

Basic concepts – hazard, disaster, risk and vulnerability. Terms used to conceptualize and communicate risk; concepts of exposure, vulnerability and resilience; Overview of Hazard Risk Vulnerability Analysis (HRVA), The challenge of sustainability. Intervention to reduce vulnerability, manage, prevent or mitigate risks to environment and to human populations; Understanding the determinants of risk.

Unit 2: Introduction to disaster risk reduction and Climatic Change Adaptation

Understanding the idea of DRR, CCA- micro and macro perspectives. Eco-systems services adaptation and development, adaptation approaches. Linking Climate Change Adaptation and DRR Risk informed planning, participatory action planning, (implementation, evaluation, project example), Familiarity with Sendai Framework and Paris Agreement COP 21. An introduction to DRR for World Heritage Properties (Natural and Cultural); UN Policies and UNESCO strategy.

Unit 3: Cultural Heritage Sites and Risk

Concepts of Cultural Heritage and Resilience, How nature and culture intersect, Disaster Risk Management plans, Urbanization, socio-economic impact, Risk Assessment. Preparation of Disaster Management Plans for Cultural Heritage sites (Emergency preparedness and response, Recovery and Rehabilitation), Integrating Disaster Risk Management into Overall Planning and Management. Familiarity with NDMA Guidelines and challenges in operationalization in Indian context, Application of Space Technology in assessing risk in Culture Heritage Sites – Case Studies.

Unit 4: Natural Heritage Sites and Risk

Concepts of Natural Heritage and Resilience, Ecosystem Services of Natural Heritage sites and Protected areas, Ecosystem based Disaster Risk Reduction (EcoDRR), Ecosystem based Adaption/Approaches (EbA), Conceptual frameworks and definitions, mainstreaming ecosystems in risk management planning, EcoDRR

Mapping, The policy context for EbA and Eco-DRR, EbA for DRR and CCA, EcoDRR and Sustainable Development, Valuation tools for DRR in protected areas, gap analysis studies, Overseas case studies, Natural Heritage sites as case studies. Application of Space Technology in assessing risk in Natural Heritage Sites – Case Studies.

Unit 5: Climate Smart Risk Reduction

Linkage between Climate Change adaptation and disaster risk reduction. Use of technology in plan preparation and risk monitoring. Case studies to reflect on which one is part of the other are they two distinct processes dealing with different issues or should they be integrated. Process of doing so and challenges theories - Case studies, Humanitarian Principles, Laws and Standards in Disaster Management.

HCM-202 Sustainable Tourism and Visitor Management (3 Credits)

Unit 1:

Meaning and Definitions, Types & Forms of Tourism, The Nature and Scope of Sustainable Tourism, Tourism Mindedness of People, Tourism & Cultural Relationships, Cultural Exchange, Relationship between Human Life and Travel, Growth of Social Tourism. Concept of Mass Tourism, Institutional framework for sustainable tourism, Protected Area Tourism in International Context, Impacts of Tourism.

Unit 2:

Meaning, Nature and Levels in Management –Roles, Skills, Tasks of a Manager, Functions of Management- Planning, Organizing, Directing & Controlling, Management by Objectives (MBO) – Decision-Making Ability, significance, Constraints, Grey areas and Scope. Planning and Policies in Tourism, New Approach to Sustainable Tourism Management, Carrying Capacity, Challenges specific to tourism. Adaptive Management for Sustainable Tourism

Unit 3:

Preservation of Heritage & Culture, Practices of Sustainable and Responsible Tourism, Tourism Planning at International, National and State Level, Future of Sustainable Tourism. Synergism between Tourism Promotion & Nature Conservation. Best Practices- Community-based tourism and conservation in India, Financing tourism management in Corbett National Park (India)

Unit 4:

World Heritage Sites in India - Problems and Prospects of Cultural/Natural Tourism in India. International Year of Sustainable Tourism, Sustainable Tourism Policy and Strategy Development, Relationship between World Heritage and Sustainable Tourism, National Tourism Policy, 2002, Guidelines for Tourism and Visitor Management in Protected Areas, Action plan for sustainable tourism development 2011-2016. International and National Case studies of Sustainable Tourism.

HCM-203 Heritage Site Management, Plans and Impact Assessment (3 Credits)

Unit 1: Heritage Site Management and Plans

Governance and planning processes, legal instruments, financial and human resources, sustainable use and benefit sharing, tourism management, developmental planning in urban areas, historical site conservation and management, participatory decision-making, stakeholder engagement, visitor management, risk management, monitoring and reporting, best practices for management plan formulation, and monitoring indicators.

Unit 2: Heritage Impact Assessment – An overview

Heritage impact assessment: Origin, history, definition and scope; use and applicability of HIA. Heritage Impact assessment as it would apply to different categories (cultural, natural, historical, social, or archaeological) of heritage sites. Relevance of HIA as a tool to help decision makers assess the possible impacts of any proposed project on heritage properties and resources.

Role of Heritage Impact Assessment: assessing the impacts of development activities (For example, such as tourism, infrastructure development, new buildings, urban renewal, and changes to the land use); guiding heritage conservation actions. Role of heritage impact assessments in bridging cultural/natural heritage management and sustainable development.

Unit 3: Methodologies and standards for assessing impacts on World Heritage sites

Assessment of the sensitivity and significance (cultural, historic, archaeological, spatial, ecological) of the heritage site; determination of the effect of a heritage impact on a heritage parameter; participatory approaches in impact assessment.

Unit 4: Relevance of EIA/SIA and Strategic Environmental Assessment (SEA) approaches

As there is often no national regulatory framework within which HIA can operate, HIA framework should build upon various elements of EIA, SIA and SEA. Review of forms of integrated framework applicable for assessing impacts on heritage sites. Linking the HIA/EIA/SEA process with governance and management processes for strengthening governance and management of heritage sites.

Statement of Heritage Impacts or Heritage Impact Assessment Report: structure and contents; review of sample reports. Review of existing guidelines for conducting HIA.

Unit 5: Case Studies

HIA global experience and the outcome of such experiences in promoting conservation actions in heritage areas and in avoiding risk of delisting of sites from the heritage list. Country examples and lessons from HIA of different category of heritage properties; Success of implementation of recommendations to address impacts on OUV of heritage sites/properties.

HCM-204 Culture-Nature Linkage in Heritage Conservation (3 Credits)

Unit 1: Introduction to Cultural and Natural Heritage

Components of heritage; Key concepts; Nature of Cultural Heritage & Culture of Natural Heritage

Unit 2: Nature and Culture in World Heritage

Conservation Charters and Conventions; International institutions – UNESCO, ICCROM, ICOMOS, IUCN, etc; Heritage sites and categories

Unit 3: Culture-Nature Dichotomy and Integration

Academic discourse; World Heritage Leadership Programme; Connecting Practice Project; Culture-Nature Journey; Prospects and Challenges

HCM-205 Heritage Economics and Project Management (3 Credits)

Unit 1: Heritage, a lever for economic and social development

Heritage as an asset, the economic impact of cultural & natural heritage: Income, jobs and creativeness; the increasing cost of conservation and the lack of funding; values and valuation of heritage; heritage as an instrument for economic growth and sustainable development, heritage as a source of skills and competencies, heritage as source of social value; the economic limit of heritage, investment in heritage, cost-benefit analyses, the conflict “Heritage Vs Economy”.

Unit 2: Policy and Regulation

Implications of policies and regulations on heritage economics, incentives and disincentives for heritage conservation. Property rights and public policies.

Unit 3: Project Management and Fundraising

Process and Steps in Project Management, Project Management Skills, Project Designs. Fundamental project management concepts and behavioural skills needed to successfully launch, lead, and realize benefits from projects in profit and nonprofit organizations. Management of resources, schedules, risks, and scope to produce a desired outcome.

Fundraising - Principles of fundraising, philanthropy, private investments and tax deduction schemes, CSR, online fundraising, event fundraising, Heritage grant and funding schemes.

Heritage Communication - Communication modes and tools, comprehensive communication strategy, concepts of digital heritage

HCM-206 Creative thinking and Innovation (3 Credits)

Unit 1: Basic conceptual frameworks

Creativity, creative thinking and innovation; Creative writing, Heritage story-telling, Folklore and Heritage; Characteristics of creative thinkers; techniques to develop creative thinking: brainstorming, mind mapping, reframing, envisaging future, role-play etc.; life-long learning as a foundation for professional development.

Unit 2: Envisaging the future: preparing for change and role of technology

The reality of change in human societies and heritage management; anticipating change; technology and creativity; innovative use of technological tools in heritage management; disruptive technologies.

Unit 3: Innovative approaches in heritage management and entrepreneurship

Innovative approaches to natural and cultural heritage management; Jugaad: an Indian approach to frugal innovations for positive change; innovations in tourism management, promoting entrepreneurship and start-up ideation; case studies of excellent innovations; entrepreneurship thinking; business incubation and start-ups.

1st Trimester

First trimester in the second year is dedicated to gain deeper understanding of disciplines of the students' interest. Here, the trimester will have three elective courses where first two modules can be elected from various disciplines of heritage conservation and applied management. Third elective is dedicated to UNESCO World Heritage studies with options of electing either cultural/mixed heritage sites or natural/mixed heritage sites and landscapes.

Options for Specialisation Course I and II – HCM-301 and HCM-302 (Elective) (at least two students have to opt for a particular specialisation) (4 Credits Each)

- Wildlife Science and Forest Ecology
- Natural Resource Management
- Heritage Museums and Cultural Anthropology
- Architectural systems and Sustainable Urban Planning

- Heritage and Disaster Risk Reduction
- Sustainable Tourism and Visitor Management
- Heritage Impact Assessment and Environment Impact Assessment

HCM-303 UNESCO Cultural and Mixed Heritage Sites and Landscapes (Elective) (4 Credits)

Unit 1:

Concept of Cultural Resources and their identification; Cultural resources management – Paradigm shift

Unit 2:

Conservation Management & Management fundamentals; Aspect considered in conservation management- carrying capacities; Quality control and management; Cultural Resource Mapping
Cultural heritage assessment; Management tools – like Digital aided tools, Visitor Management, people's participation etc.

Unit 3:

Management of Historic building – requirement of regular maintenance, types of special repairs, annual repairs, common problems faced in historic buildings, preparing maintenance programs for historic buildings; Site level management- planning for site development, interpretation of site, facilities provided for visitors, visitor management, site infrastructure; Management of conservation projects – types of contract, specification for conservation, maintenance work, and contract administration.

Unit 4:

Areas of management- modern paradigms and trends like Heritage visitor attractions, Information Management, Risk preparedness, Disaster Management.etc.

Unit 5:

World heritage and concept of conservation management plan; World heritage nomination procedure
Operational guidelines for world heritage convention

Unit 6:

World heritage site management – Contribution of International organizations; Conservation Management & Heritage tool kits; Heritage economics & cultural heritage

Unit 7:

Indian scenario - ASI contribution in world heritage management - Indian example; Conservation & heritage management – Jawaharlal Nehru National Urban Renewal Mission (JNNURM) City Development Plan, Smart City, HRIDAY - case study

Unit 8:

Emerging approaches like ITUC- Integrated Territorial Urban Conservation; Indian scenario – Integrated planning and heritage management

or

HCM-303 UNESCO Natural and Mixed Heritage Sites (Elective) (4 Credits)

Unit 1: Salient features of the Standard Operational Guidelines of the UNESCO

Definitions; Criteria for assessment of OUVs; Integrity and Authenticity; Sequence of process of inscription of properties; Process of Monitoring of the State of Conservation; Periodic Reporting; Capacity building, Research and Outreach.

Unit 2: Natural and Mixed World Heritage Sites: A Global Review

Synoptic overview of the 845 Natural and 38 Mixed sites according to the region, giving special emphasis on the Asia-Pacific. Detailed break-up of OUVs of 7 Indian Natural and 1 mixed site(s); World Heritage Sites in danger; delisted sites.

Unit 3: Gap analysis of Natural and Mixed sites in the Asia-Pacific region

Global strategy for a representative, balanced and credible WHS list; gap analysis based on region, biome, restricted habitats, species groups, taxa of special importance etc.; listing gap areas and potential sites with special emphasis on the Asia-Pacific region.

Unit 4: Preparation of a model Nomination Dossier

Selection of two sites – one Natural and one Mixed from the list of potential sites; Secondary literature review; Preparation of Annexure-II and Annexure-V.

3rd Semester

Dissertation (6 months) (24 Credits)

Dissertation: The student is required to undertake 6-month project consisting of approximately four months data collection, investigation, review followed by 2

months data analysis and writing up. Dissertation topics will be offered in fields including 'Wildlife Science and Forest Ecology', 'Natural Resource Management', 'Heritage Museums and Cultural Anthropology', 'Architectural systems and Sustainable Urban Planning', 'Heritage and Disaster Risk Reduction', 'Sustainable Tourism and Visitor Management' and 'Heritage Impact Assessment and Environment Impact Assessment'. Students in consultation with faculty members will be asked to take up a study on the above-mentioned areas of research during the first trimester.

Once his/her dissertation topic has been selected and supervisors identified, the student should familiarize with existing literature on the subject. The students will be encouraged to develop a study design and improve it through consultations. A detail proposal to execute the study will also be essential. The supervisors should be frequently consulted at every stage of the dissertation project, from preparation of proposal to writing the thesis. This exercise is important as it provides the student with the experience to develop a research proposal and execute it efficiently.

Students are generally encouraged to start data entry and analyses in the field to save time. A draft of chapters on methods and study area should be ready at the end of the first trimester. This ensures that the supervisors have enough time to edit the chapters and provide their inputs.

2nd Trimester

Internship (3 months)

Internship: It stands for a period of work, study and reflection in a real-life working environment. In last trimester of second year, students will get an opportunity to develop their understanding and practical skills in heritage conservation and management. For three months, the students are encouraged to gain direct experience in the field of their interest by interning with an institution in India or abroad. Given the wide array of fields, course faculty and internship coordinator will facilitate students in associating them with potential government institutions and non-governmental organizations. Specific mandates during the internship are to carry out a research assignment in his/her field of interest; give an oral presentation in presence of course faculty, supervisor, internship coordinator and other students; and write a report in prescribed format.

Upon successful completion of the internship the students will be able to:

- Apply acquired knowledge and skills in a professional situation
- Identify the attitude required in a professional situation and reflect upon his/her own attitude;

- Evaluate the nature of the heritage conservation and management profession in a professional organization such as a consultant, governmental organization, NGO, research institute, etc.;
- Interact within the networks of conservation practitioners