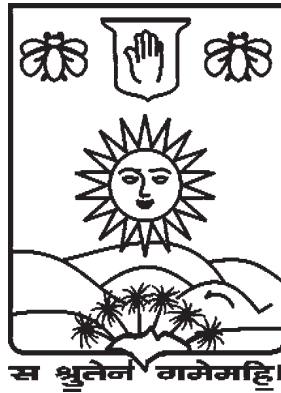


SYLLABUS
MASTER OF ARTS (M.A.)
IN
ANCIENT INDIAN HISTORY, CULTURE AND
ARCHAEOLOGY
AND
POST-GRADUATE DIPLOMA IN ARCHAEOLOGY
(PG D)



DECCAN COLLEGE
POST-GRADUATE AND RESEARCH INSTITUTE
PUNE - 411006 (INDIA)
(Deemed to University declared under section 3 of UGC Act 1956)

2014

MASTER OF ARTS COURSE

Arc 101: POLITICAL HISTORY OF INDIA (upto 700 C. E.)

Course objectives:

The objective of this course is to introduce the students with the major political events from the earliest historical records until 700 C.E. The major ruling dynasties and the development of political institutions in India are outlined.

Course outcomes:

After completing this course students will have a familiarity with the political history of India upto 700 C.E. They will have been introduced to the major sources of political history and the different approaches to historical studies.

Unit 1 Sources of Political History 3 hrs

- a) Archaeological
- b) Literary
- c) Foreign accounts
- d) Role of the sources to reconstruct the past: problems and limitations

Unit 2 Historiography 3 hrs

Meaning, Approaches (Imperialistic, Nationalist, Marxist)

Unit 3 Emergence of political institutions in ancient India 5 hrs

- a) Origin of political institutions in ancient India
- b) Janapadas, Ganarajyas and Mahajanapadas in ancient India
- c) Empire : Definition, Concept and emergence
- d) Rise of Magadha Empire
- e) Persian and Greek Invasions: Causes and Impacts

Unit 4 Mauryan and Post-Mauryan India 8 hrs

- a) Chandragupta Maurya and Bindusara
- b) Ashoka, his successors and decline of the Mauryas
- c) Mauryan Administration
- d) Shunga, Kanva, Indo-Greek, Indo-Scythian and Indo-Parthian dynasties
- e) Sangam Age of South India

Unit 5 Kushana and Satavahana Period 8 hrs

- a) Rise of the Kushana Power
- b) Problems in Kushana genealogy and recent researches
- c) Kanishka and his successors
- d) Satraps of the Kushanas:
Northern Kshatrapas and Western Kshatrapas: Kshaharata and Kardamaka families
- e) Problems in Satavahana genealogy and chronology

- f) Rise of the Satavahanas: Early rulers
- g) Feud between Western Kshatrapas and Satavahanas

Unit 6 The Guptas 7 hrs

- a) Origin, genealogy and early history
- b) Samudragupta
- c) Ramagupta problem
- d) Chandragupta II, Kumaragupta I and Skandagupta
- e) Successors of Skandagupta and decline of the Guptas
- f) Gupta administration

Unit 7 The Vakatakas 2 hrs

- a) Origin and Early History
- b) Nandivardhan and Vatsagulma branches of the Vakatakas

Unit 8 Post Vakataka Period in Deccan and South India 4 hrs

- a) Chalukyas of Badami
- b) Pallavas and Pandyas

Unit 9 Post Gupta Period in North India 5 hrs

- a) Huna Invasion
- b) Maitrakas of Valabhi
- c) Yashovarman of Kannauj
- d) Pushyabhutis of Thaneshwar: Harshavardhana

Recommended Readings

- Ali, B. Shaik. 1978. *History: Its Theory and Method*, Madras: Macmillan India Ltd.
- Allchin, F.R. 1995. *The Archaeology of Early Historic South Asia; The Emergence of Cities and States*. Cambridge: Cambridge University Press.
- Bajaj, S.K. 1998. *Recent Trends in Historiography*. New Delhi: Anmol Publications Pvt.Ltd.
- Beihethll. 1971. *Enlightenment Historiography Three German Studies: History and Theory Studies in the Philosophy of History*. Wes Leyan University.
- Bhattacharya, N. N.1988. *Ancient Indian History and Civilization*. New Delhi: Manohar.
- Bosworth, A. B. 1995. *A Historical Commentary on Arrians History of Alexander*. New York: Oxford University Press.
- Bongard-Levin, G. 1985. *Mauryan India*. Delhi: Oxford University Press.
- Burke, P. (ed.). 2001. *New perspectives on Historical Writings*. Cambridge: Blackwell Publishers.

- Devahuti, D. 1970. *Harsha – A Political History*. Oxford: Clarendon Press.
- Chattopadhyaya, D.P. 2001. *The Ways of Understanding Human Past*. New Delhi: Center for Studies in Civilizations.
- Colledge, M. A. R. 1986. *The Parthian Period*. Leiden: Brill Academic Publishers.
- Goyal, S.R. 1986. *Harsha and Buddhism*. Meerut: Kusumanjali Prakashan.
- Haskell, F. 1993. *History and its Images: Art and the interpretation of the past*. London: Yale University Press.
- Heninge, D. 1974. *Chronology of Oral Tradition*. London: Clarendon Press.
- Kejariwal, O. P. 1988. *The Asiatic society of Bengal and the Discovery of India's Past 1784-1838*. Delhi: Oxford University Press.
- Kimura, Masaki & Tanabe Akio(eds.) 2006. *The State in India, Past and Present*. New Delhi: Oxford University Press.
- Kosambi, D.D. 1985. *An Introduction to the Study of Indian History*. (Reprint) Bombay: Popular Prakashan.
- Law,B.C. 1954. *Historical Geography of Ancient India*. Delhi: Munshiram Manoharlal Pvt. Ltd.
- Lemon, M.C. 2003. *Philosophy of History*. New York: Routledge.
- Leeuw J.E.Van Lohvizen-De 1995. *The Scythian Period*. New Delhi: Munshiram Manoharlal Pvt.Ltd.
- Mujumdar, R.C. and A.D. Pusalkar (eds.). 1950. *The Vedic Age*. Bombay: Bharatiya Vidya Bhavan.
- Mujumdar, R.C. (ed.). 1966. *The Age of Imperial Unity*. Bombay: Bharatiya Vidya Bhavan.
- Mujumdar, R.C. (ed.). 1970. *The Classical Age*. Bombay: Bharatiya Vidya Bhavan.
- Mujumdar, R.C. (ed.). 1971. *The Age of Imperial Kannauj*. Bombay: Bharatiya Vidya Bhavan.
- Mujumdar, R.C. (ed.). 1972. *The Struggle for the Empire*. Bombay: Bharatiya Vidya Bhavan.
- Mujumdar, R.C., H.C. Roychoudhuri and K.Datta (ed.). 1961. *Advanced History of India*. London: Macmillian.
- Majumdar, R. K. & Srivastava A.N. 1975. *Historiography*. Delhi: Surjeet Book Depot.
- Mukherjee, B. N. 1988. *The Rise and Fall of the Kushana Empire*. Calcutta: Firma KLM Pvt. Ltd.

- Mirashi, V.V. 1981. The History and Inscriptions of the Satavahanas and the Western Kshatrapas. Bombay: State Board of Literature.
- Narain, A.K. 1957. The Indo-Greeks. Oxford: Oxford University Press.
- Ramesh, K.V.1984.Chalukyas of Vatapi. Delhi: Agam Kala Prakashan.
- Roychoudhuri, H.C. 1950. Political History of Ancient India (5th edition). Calcutta: University of Calcutta.
- Sharma, G. R. (ed.). 1968. Kushana Studies. Allahabad: University of Allahabad.
- Sharma, J. P. 1968. Republics in Ancient India. Leiden: Brill.
- Sharma, R. S. 1965. Indian Feudalism. Calcutta: University of Calcutta.
- Sharma R.S. 2005. India's Ancient Past. New Delhi: Oxford University Press.
- Shastri, A.M. (ed.). 1999. The Age of Satavahanas 2 vols. New Delhi: Aryan Publications.
- Shastri, A.M. (ed.). The Age of Vakatakas 2 vols. New Delhi: Harman Publishing House.
- Shastri, K.A.N. 1952. The Age of the Nandas and Mauryas. Banaras: Motilal Banarasidas.
- Shastri, K.A.N. 1957. A Comprehensive History of India vol.I (The Mauryas and Satavahanas). Bombay: Oriental Longman.
- Shastri, K.A.N. 1966. History of South India (3rd edition). Oxford: Oxford University Press.
- Singh Upinder 2009. A History of Ancient and Early Medieval India, Delhi: Pearson.
- Sreedharan, E.2000. A Textbook of Historiography 500 B.C. to A.D.2000. New Delhi: Orient Longman.
- Strong, J. S. 1983. The legend of King Asoka. New Delhi: Motilal Banarasidass.
- Taddel Maurizio (Trans. Higarh James). 1970. The Ancient Civilization of India. London: Barie and Jenkins.
- Thapar, Romila 1973. Ashoka and the Decline of the Mauryas (2nd edition). Oxford: Oxford University Press.
- Thapar, Romila 1992, Interpreting Early India. Delhi: Oxford University Press.
- Vansina, J. 1985. Oral Tradition as History. Wisconsin :university of Wisconsin Press.
- Veluthat, Kesavan 2009. The Early Medieval History of South India. New Delhi: Oxford University Press.

Arc 102: SCIENCE IN ARCHAEOLOGY

Course objectives :

In this course students are introduced to the various scientific disciplines used for archaeological research. They complete a number of practical in the various laboratories in the Archaeology Department.

Course outcomes:

Students are familiarized with basic descriptive technique and preliminary study of various categories of objects studied by archaeologists, such as plant fossils, human remains, rocks and minerals, sediments, map reading.

Unit 1	Role of various sciences in archaeological research	2 hrs
Unit 2	Archaeobotany and Palynology Introduction to different types of plant fossils found in archaeological contexts such as woods, food grains, impressions, compressions, casts, petrifications, coprolites, phytoliths, pollen and spores.	8 hrs
Unit 3	Basic archaeozoology and palaeontology Brief introduction to the scope and objectives of animal skeletal studies in archaeology, Animal classification, Mammalian osteology, Identification and Study of Osteology of domestic animals (Cattle, Sheep, Goat, Horse, donkey, dog and pig), Fossil preparation, identification and systematic palaeontology of fossil vertebrates.	8 hrs
Unit 4	Human osteology Identification, methods of cleaning and reconstruction, sex determination, age estimation, demography and pathology	4 hrs
Unit 5	Identification of common rocks and minerals	4 hrs
Unit 6	Geographic techniques topsheet reading and interpretations	4 hrs
Unit 7	Description and interpretation of natural and archaeological section in the field	4 hrs
Unit 8	Preliminary study of soils/sediments: Determination of texture, colour, pH, calcium carbonate, organic carbon, phosphate	3 hrs
Unit 9	Chemical conservation and preservation of iron and copper objects	4 hrs
Unit 10	Demonstration of working of different computer Softwares	4 hrs

Recommended Reading

- Badam, G.L. 1979. Pleistocene Fauna of India, Pune: Deccan College.
- Baker, J. and D. Brothwell. 1980. Animal Diseases and Archaeology, Academic Press: London
- Bass, W.M. 1981. Human Osteology: A laboratory and field manual of the Human skeleton, 2nd edition, Columbia: Missouri Archaeological Society.
- Biswas, A. K.. 2005. Science in Archaeology and Archaeological materials. New Delhi: D.K. PrintWorld (P) Ltd.
- Bone, J.F. 1979. Animal Anatomy and Physiology, Reston: Reston Publishing Co.
- Black, C.A., Evans, D.D., White, J.L., Ensminger, L.E. and F.E. Clark (Eds.). 1965. Methods of Soil Analysis, part I Physical and Mineralogical properties and part II Chemical and Microbiological properties, American Society of Agronomy, Inc. Madison, Wisconsin, USA
- Brothwell, D. and E. Higgs (Eds.). 1969. Science in Archaeology, London : Thames and Hudson.
- Brothwell, D. and A.M. Pollard. 2001. Handbook of Archaeological Sciences, New York: John Wiley and Sons.
- Cornwall, I.W. 1974. Bones for Archaeologists, (revised edition), London : L.M. Dent and Sons.
- Deo, S.G. 2000 01. Computer Applications in Archaeology: A review of work done at Deccan College, Bulletin of Deccan College Postgraduate and Research Institute, Vol. 60 61: 137 142.
- Deotare, B.C. 1995. Pollen recovery from minerogenic sediments : A methodological approach. Man and Environment, XX(2):101 105.
- Erdtman, G. 1969. Hand book of Palynology, New York: Hafner.
- Greig, James. 1989. Handbook for Archaeologists No.4: Archaeobotany, European Science Foundation, Strasbourg.
- Joshi, R.V. and B.C. Deotare. 1983. Chemical Analysis of Archaeological Deposits from India. Pune: Deccan College.
- Kajale, M.D. 1991. Current status of Indian Palaeoethnobotany : Introduced and indigenous food plants with a discussion of the historical development of Indian Agriculture and agricultural system in general, in New Light on Early Farming, Jane Renfrew (Ed.), Edinburgh: Edinburge University press, pp.155 190.

- Leiggi, Patrick and Peter May (Eds.). 1994. Vertebrate Palaeontological Techniques, Vol. 1, Cambridge University Press.
- Moore, P.D., Webb, J. A. and M.E. Collinson. 1992. Pollen Analysis, Oxford: Blackwell.
- Pearsall, D. 1989. Palaeoethnobotany Handbook of Procedures. London: Academic press.
- Plenderlith, H.J. 1965. The Conservations of Antiquities and Works of Art, London: Oxford University press.
- Renfrew, J. 1973. Palaeoethnobotany, London: Mathuen and Co.
- Reilly, P. and S. Rathz (Eds.). 1992. Archaeology and the Information Age. London: Routledge
- Romer, A.S. 1967. Vertebrate Paleontology, Chicago: University of Chicago press.
- Schmid, E. 1972. Atlas of Animal Bones. London: Elsevier publishing Co.
- Singh, R. and L.R. Kaja. 1979. Map Work and Practical Geography, Allahabad: Central Book Depot.
- Traverse, A. 1988. Palaeopalynology Boston: Unwin Hyman.

Arc 103: INTRODUCTION TO ARCHAEOLOGY

Course objectives :

The definition, aims and scope of archaeology and its development as a discipline is introduced to the students. The nature of the archaeological record and the unique role of science in archaeology is explained. Legislation related to archaeology and the role of archaeology in heritage management are also discussed in this course

Course outcomes :

Students gain a basic understanding of the nature, and development of archaeology as a discipline.

Unit 1	Definition, Aims and Scope of Archaeology	6 hrs
	a. Definition of archaeology	
	b. Archaeological Methods	
	c. Key Archaeological Findings and their significance	
	d. Overlap and Distinction between Archaeology, History and Anthropology,	
	e. Branches of Archaeology: Prehistoric to Medieval Archaeology	
Unit 2	Development of Archaeology	6 hrs
	a. In Europe and America	
	b. In India	
Unit 3	Nature of the archaeological record:	8 hrs
	a. Definition of archaeological sites	
	b. Exploration and excavation	
	c. Artefacts and ecofacts	
Unit 4.	Cultural sequence and dating the past	6 hrs
	a. Prehistory, Protohistory and History	
	b. Introduction to relative dating methods	
	c. Introduction to absolute dating methods	
Unit 5.	Prehistoric human past: Biological and Cultural changes	4 hrs
Unit 6.	Theoretical foundations of Archaeology: Antiquarian period to New Archaeology	3 hrs
Unit 7.	Cultural heritage, monuments and Archaeological Legislation	6 hrs
Unit 8	Role of natural and social sciences in Archaeology	4 hrs
Unit 9	Use and misuse of Archaeology	2 hrs

Recommended Readings

- Binford, L.R. 1983. *In Pursuit of the Past: Decoding the Archaeological Record*. London: Thames and Hudson.
- Bintliff, John. 2004. *A companion to Archaeology*. U.K.: Blackwell.
- Cela-Conde, Camilo J. and Francisco José Ayala. 2007. *Human Evolution: Trails from the Past*. Oxford: Oxford University Press
- Chakrabarti, D.K. 1988 *A History of Indian Archaeology: From the Beginning to 1947*. New Delhi: Munsiram Manoharlal.
- Daniel, Glyn, E. 1981. *A Short History of Archaeology*. London: Duckworth.
- Fagan, B. 1988. *In the beginning: An Introduction to Archaeology*. Glenview: Scott, Foresman and company.
- Feder, K.L. 2004. *Linking to the Past*. New York: Oxford University Press.
- Feinman G.M. and T. G. Price. 2001. *Archaeology at the Millenium*. New York: Kluwer.
- Gamble, Clive. 2008. *Archaeology: The Basics*. London: Routledge.
- Hall, M and S.W. Silliman. 2006. *Historical Archaeology*. USA: Blackwell.
- Hurcombe Linda 2007. *Archaeological artefacts as material culture*. New York: Routledge
- Iltov, P.A. 2008. *From Harappa to Hastinapur*. Boston: Brill.
- Johnson, Matthew 2007 *Archaeological Theory: An Introduction*. Blackwell Publishing (new edition 2010)
- McHenry, Henry M. 2009. *Human Evolution* Pp. 256-280 in *Evolution: The First Four Billion Years*, edited by M. Ruse and J. Travis. Cambridge, Massachusetts: Harvard University Press.
- McIntosh, Jane. 1999. *The Practical Archaeologists*. New York: Facts on File.
- Murray Tim and C. Evans. 2008. *Histories of Archaeology*. Oxford: Oxford University Press.
- Rajan, K. 2002. *Archaeology*. Tanjavur: Mannop Publishers.
- Renfrew, Colin and Paul Bahn 2006 *Archaeological: Theories and Methods and Practice*.
- Trigger, Bruce 1989. *A History of Archaeological Thought*. Cambridge: Cambridge University Press.

Arc 104: PREHISTORY OF SOUTH ASIA

Course objectives :

The nature and scope of prehistory is introduced and the prehistoric evidence of South Asia, from the earliest Lower Palaeolithic to the Mesolithic is taught. The Quaternary environmental change especially in reference to the Indian Subcontinent is presented.

Course outcomes :

Students will be familiarized to the basic outline of the Prehistory of South Asia and the changing environments of the Quaternary.

Unit 1 Prehistory: Subject matter, scope and aims 3 hrs

Unit 2 The Quaternary Period 6 hrs

- a. Introduction to the Quaternary
- b. Methods for reconstructing palaeoclimate
- c. Global climate history during the Quaternary (last 2.4 Ma)
- d. Indian Environment and Quaternary

Unit 3 Introduction to Prehistoric Technology and Typology 4 hrs

- a. Introduction to typology and technology
- b. Methods of studying stone tools

Unit 4 South Asian Stone Age Sequence

The Lower Palaeolithic—Acheulian 10 hrs

Nature and significance of the technology

Distribution and Variation

Important sites

Associated Fauna

Chronology

The Middle and Upper Palaeolithic 4 hrs

Nature and significance of the technology

Distribution and Variation

Important sites

Associated Fauna

Chronology

The Mesolithic

6 hrs

Nature and significance of the technology

Distribution and Variation

Important sites

Associated Fauna

Chronology

Unit 5 Current Trends in South Asian Prehistory

6 hrs

- a. Large Flake Acheulian
- b. Issues related to hominin dispersal into or from South Asia
- c. Debates related to terminology of cultural phases and lithics
- d. The position of the Soanian in the South Asian Palaeolithic.
- e. South Asian Paleolithic in the global context

Unit 6 Prehistoric Rock Art

6 hrs

Recommended Readings

Books

Chakravarty, K. K., and R. G. Bednarik. 1997. *Indian Rock Art in Global Context*. Delhi: Motilal Banarasi Dass & IGRMS.

Clark, J.D. and Sharma, G.R. (Eds.) *Palaeoenvironment and Prehistory in the Middle Son Valley, Madhya Pradesh, North Central India*. Allahabad: Abinash Prakashan.

Cooper, Z. M. 1997. *Prehistory of the Chitrakot Falls, Central India*. Pune: Ravish Publishers.

Corvinus, G. 1983. *A Survey of the Pravara River System in Western Maharashtra, India, Vol 2.: The Excavations of the Acheulian Site of Chirki-on-Pravara, India*. Tubingen: Institute for Urgeschichte.

Corvinus, G. 2007. *Prehistoric Cultures in Nepal: From the Early Palaeolithic to the Neolithic and the Quaternary Geology of the Dang-Deokhuri Dun Valleys, Volume 1*. Friedrich-Alexander-Universität Erlangen-Nürnberg. Institut für Ur- und Frühgeschichte. Harrassowitz Verlag.

de Terra, H. and T.T. Paterson Eds. 1939. *Studies on the Ice Age in India and Associated Human Cultures*. Washington: Carnegie Institution of Washington Publication No. 493.

Dennell, R. W. 2009. *Palaeolithic Settlement of Asia*. Cambridge: Cambridge University Press.

Deraniyagala, S.U. 1992. *The Prehistory of Sri Lanka. An Ecological Perspective*. Sri Lanka: Memoir Volume Part I, II, III, Commissioner of Archaeology, Government of Sri Lanka.

Henke, W., T. Hardt, and I. Tattersall. Editors. 2006. *Handbook of Paleoanthropology 3 Vols*: Springer.

Inizan, Marie-Louise, Reduron-Ballinger, M., Roche, Helene and Tixier, Jacques 1997. Terminology of Knapped Stone. Nanterre:CREP.

Neumayer, E. 2010. Rock Art of India. Oxford and New Delhi: Oxford University Press.

Pandey, S. K. 1993. Indian Rock Art. Delhi: Aryan Books International.

Pant, P.C.and V. Jayaswal.1991. Paisra : The Stone Age Settlement of Bihar. Delhi: Agam Kala Prakashan.

Pappu, R. S. 2001. Acheulian Culture in Peninsular India: an Ecological Perspective. New Delhi: D.K. Printworld.

Pappu, S., 2001. A Re-Examination of the Palaeolithic Archaeological Record of Northern Tamil Nadu, South India. Oxford: British Archaeological Reports (BAR) International Series 1003.

Raju, D.R. 1988. Stone Age Hunter-Gatherers: An Ethnoarchaeology of Cuddapah Region, South-East India. Pune:Ravish Publishers.

Sankalia, H.D. 1974. The Prehistory and Protohistory of India and Pakistan. Pune: Deccan College Postgraduate and Research Institute.

Research Papers

Dennell, R. 2011. An Earlier Acheulian Arrival in South Asia, *Science*, 25 March: 1532-1533.

Gaillard, C., and S. Mishra. 2001. The Lower Palaeolithic in South Asia, in *Origin of Settlements and Chronology of the Paleolithic Cultures in SE Asia*. Edited by F. Semah, C. Falgueres, D. Grimaud-Herve, and A.-M. Semah, pp. 73-92. Semenanjung and Paris.

Gaillard, C., M. Singh, and R. K.K. 2008. Technological analysis of the Acheulian assemblage from Atbarapur in the Siwalik Range (Hoshiarpur district, Punjab). *Man and Environment* 33:1-14.

Gaillard, C., S. Mishra, M. Singh, S. G. Deo, and R. Abbas. 2009. Lower and Early Middle Pleistocene Acheulian in the Indian Sub-Continent. *Quaternary International*.

James, H.A.V. and M.D.Petraglia 2005. Modern Human Origins and the Evolution of Behavior in the Later Pleistocene Record of South Asia, *Current Anthropology* 46:S3-S27.

Mellars, Paul, Kevin C. Gori, Martin Carr, Pedro A. Soares and Martin B. Richards, 2013. Genetic and archaeological perspectives on the initial modern human colonization of southern Asia, *Proceedings of the National Academy of Sciences of the United States of America*, doi: 0.1073/pnas.1306043110

Mishra S, Chauhan N, Singhvi AK (2013) Continuity of Microblade Technology in the Indian Subcontinent Since 45 ka: Implications for the Dispersal of Modern Humans.

PLoS ONE 8(7): e69280. doi:10.1371/journal.pone.0069280

Mishra S. 2008. The Lower Palaeolithic: A Review of Recent Findings. *Man and Environment* 33:14-29.

Mishra, S. 2007. The Indian Lower Palaeolithic. *Bulletin of the Deccan College Postgraduate and Research Institute* 66-67:47-94.

Mishra, S., C. Gaillard, S. G. Deo, M. Singh, R. Abbas, and N. Agrawal. 2010. Large Flake Acheulian in India: Implications for understanding lower Pleistocene human dispersals. *Quaternary International*.

Mishra, S., M. J. White, P. Beaumont, P. Antoine, D. R. Bridgland, N. Limondin-Lozouet, J. I. Santisteban, D. C. Schreve, A. D. Shaw, F. F. Wenban-Smith, R. W. C. Westaway, and T. S. White. 2007. Fluvial deposits as an archive of early human activity. *Quaternary Science Reviews* 26:2996-3016.

Misra V.D. 2005. Mesolithic Cultures in the Middle Ganga Valley, in *River Valley Cultures of India*. Edited by K. K. Chakravarty and G. L. Badam, pp. 39-43. New Delhi: Aryan books International.

Misra V.N. 1982. Evolution of the Blade Element in the Stone Industries of the Rock Shelter III F-23, Bhimbetka, in *Indian Archeology : New Perspectives* . Edited by R. K. Sharma, pp. 7-13. Delhi Agam Kala Prakashan.

Misra V.N., 1989. Stone Age India: an Ecological Perspective, *Man and Environment* 14:17-64.

Misra, V. D. 1997. Lower and Middle Palaeolithic Cultures of Northern Vindhya, in *Indian Prehistory:1980*. Edited by V. D. Misra and J. N. Pal, pp. 61-74. Allahabad Department of Ancient History, Culture and Archaeology, University of Allahabad.

Misra, V. N. 1978. The Acheulian Industry of Rock Shelter III F- 23 at Bhimbetka, Central

Misra, V. N., and M. Nagar. 1973 Twenty-five years of Indian Prehistory (1947-1972)--a Review of Research, in *Man and society*. Edited by K. S. Mathur. Lucknow.

Misra, V. N., and Y. Mathpal. 1979. Rock Art of Bhimbetka Region, Central India. *Man and Environment* 3:27-33.

Misra, V.N. 2001b. Prehistoric Colonization of India. *J. Indian Academy of Sciences (Biosci.)* 26:491-531.

Misra, V.N. 1985b. Microlithic Industries in India, in *Recent Advances in Indo-Pacific Prehistory*. Edited by V. N. Misra and P. Bellwood, pp. 111-120. New Delhi: Oxford and IBH

Misra, V.N. 1987. Middle Pleistocene Adaptations in India, in *Pleistocene Old World: Regional Perspectives*. Edited by O. Soffer, pp. 99-119. New York: Plenum Press.

- Misra, V.N. 2001a. Archaeological Evidence of Early modern Human Occupation in South Asia, in *Humanity from African Naissance to coming Millennia*, vol. 223-230. Edited by P. V. Tobias, M. Raath, J. A. Moggi-Cecchi, and G. A. Doyle. Firenze: Firenze University Press.
- Misra, V.N. and P. Bellwood. 1985. *Recent Advances in Indo-Pacific Prehistory*. New Delhi: Oxford – IBH.
- Misra, V.N.1985a. The Acheulian Succession at Bhimbetka, Central India, in *Recent Advances in Indo-Pacific Prehistory*. Edited by V. N. Misra and P. Bellwood, pp. 35-48. New Delhi: Oxford - IBH.
- Paddayya, K. 1982. *The Acheulian Culture of Hunsgi Valley (Peninsular India) : a Settlement System Perspective*. Pune: Deccan College.
- Paddayya, K. 2008b. India: Paleolithic Cultures, in *Encyclopedia of Archaeology*. Edited by D. M. Pearsall, pp. 768-791. New York: Elsevier
- Paddayya, K. 2007. The Acheulean of Peninsular India with Special Reference to the Hunsgi and Baichbal Valleys of the Lower Deccan in *The Evolution and History of Human Populations in South Asia*. Edited by M. Petraglia and B. Allchin, pp. 97-119. Netherlands: Springer.
- Paddayya, K. 2008a. Evolution within the Acheulian in India: A case study from the Hunsgi and Baichbal valleys, Karnataka. *Bulletin of the Deccan College Postgraduate and Research Institute* 66-67:95-111.
- Paddayya, K., R. Jhaldiyal, and M. D. Petraglia. 2006. The Acheulian quarry at Isampur, Lower Deccan, India, in *Axe Age: Acheulian Tool-making from Quarry to Discard*. Edited by N. Goren Inbar and G. Sharon. London: Equinox Publishing Ltd.
- Pal, J. N. 2002. The Middle Palaeolithic Culture of South Asia, in *Indian Archaeology in Retrospect Prehistory Archaeology of South Asia Vol. I*. Edited by S. Settar and R. Korisettar, pp. 67-83. Delhi: Indian Council of Historical Research and Manohar.
- Pal, J. N. Mesolithic settlements in the Ganga Plain. *Man and Environment* 19 (1-2): 91-101.
- Pappu S, Y.Gunnell, M.Taieb and A.Kumar 2004. Preliminary report on excavations at the Palaeolithic site of Attirampakkam, Tamil Nadu (1999–2004), *Man and Environment* 29(2):1-17.
- Pappu Shanti, Yanni Gunnell, Kumar Akhilesh, Régis Braucher, Maurice Taieb, François Demory, Nicolas Thouveny. 2011. Early Pleistocene Presence of Acheulian Hominins in South India. *Science*, Vol.331, pp. 1596-1599
- Pappu, S. and A.Kumar 2006. Preliminary Observations on the Acheulian Assemblages from Attirampakkam, Tamil Nadu, in *Axe Age. Acheulian Toolmaking from Quarry to Discard*, (N.Goren-Inbar and G. Sharon Eds.), pp. 155-180. London:Equinox Publishing Ltd.

Pappu, S., 2007. Changing trends in the study of a Palaeolithic site in India: a century of research at Attirampakkam, in *The Evolution and History of Human Populations in South Asia, Inter-disciplinary Studies in Archaeology, Biological Anthropology, Linguistics and Genetics series* (M.D.Petraglia and B.Allchin Eds.), pp. 121-135. Dordrecht, Springer.

Pappu, S., Y. Gunnell, A.Kumar, R. Braucher, M. Taieb, F. Demory and N. Thouveny 2011. Early Pleistocene Presence of Acheulian Hominins in South India, *Science*, 25th March: 1596-1599.

Petraglia, M. 2006. The Indian Acheulian in global perspective, in *Axe Age*. Edited by N. Goren and G. Sharon, pp. 389-414. London: Equinox.

Petraglia, M. D., and B. Allchin. 2007. Human Evolution and Culture Change in the Indian Subcontinent in *The Evolution and History of Human Populations in South Asia* Edited by M. Petraglia and B. Allchin, pp. 1-20. Netherlands: Springer.

Petraliga, M. D., M. Haslam, and D. Q. Fuller. 2010. The Southern Dispersal Route and the Spread of Modern Humans along the Indian Ocean Rim: New Hypotheses and Evidence. *Annals of Human Biology*.

Shipton, C.B.K., Petraglia, M.D. and K. Paddayya 2009. Stone Tool Experiments and Reduction methods at the Acheulean site of Isampur Quarry, India, *Antiquity* 83:769–785.



Arc 201: RELIGIOUS HISTORY OF INDIA

Course objectives

In this course students are introduced to the development of different religious traditions in India. The changing dominance of different religious strands from Vedic religion to Brahmanical religion to Buddhism and Jainism are outlined.

Course Outcomes

After completion of this course students will be familiar with the different religious traditions of the Indian subcontinent

Unit 1 Vedic Religion 10 hrs

Religion of the Vedic and Later Vedic Periods- aniconic worship of natural powers, Atharvanic religion, the cult of Sacrifice and the emergence of Upanishidic Philosophy

Unit 2 Vedic Religion and its transformation into Brahmanical religion 12 hrs

- a. Shiva, Rudra-Shiva concept, Linga worship, introduction to some of the Shaiva sects: Pashupata, Kapalikas and Kalamukha.
- b. Vishnu, Assimilation of Vishnu with Narayana-Vasudeva- Krishna, Avatara Doctrine and Bhagavata Sect.
- c. Shakti and her manifestations, brief introduction to Yogini Cult
- d. Saura and Ganapatya Cults.
- e. The mythology of the Mahabharata, Ramayana and the Puranas.

Unit 3 Buddhism 10 hrs

- a. Emergence and expansion
- b. Basic Tenets and philosophical development
- c. Introduction to Buddhist sects,
- d. Decline of Buddhism

Unit 4 Jainism 7 hrs

- a. Lokayatikas and Ajivikas
- b. Emergence and expansion
- c. Introduction to Jaina sects

Unit 5 Other Religious Trends 6 hrs

- a. Yakshas and Nagas, tree and animal Worship
- b. Goddesses of fertility and prosperity
- c. Brief introduction to Tantric and ascetic practices

Recommended Readings

- Agrawal, V.S. 1970. Ancient Indian Folk Cults. Varanasi: Prithvi Prakashan.
- Ambedkar, B.R. 1957. The Buddha and His Dhamma. Bombay: Siddhartha Prakashan
- Banerjea, J.N. 1963. Puranic and Tantic Religion. Calcutta: Calcutta University.
- Basham, A.L. 1990. History and the Doctrine of the Ajivikas. Delhi: Motilal Banarasidass Publishers Pvt. Ltd.
- Bhandarkar, R.G. 1965. Vaishnavism ,Shaivism and Minor Religious Systems. Varanasi: Indological Book House.
- Bhattacharji, Sukumari 1970. The Indian Theogony. Cambridge: Cambridge University Press
- Bhattacharya, N.N. 1971. Indian Mother Goddess. Calcutta: R.K.Mitra.
- Bhattacharya, N.N. 1974. History of the Sakta Religion. New Delhi: Munshiram Manoharlal Publishers Pvt. Ltd.
- Bhattacharya ,N.N. 2007. History of The Tantric Religion: An Historical ,Ritualistic and Philosophical studies . New Delhi: Manohar
- Bolon, C.R. 1992. Forms of the Goddess Lajja Gauri in Indian Art. Pennsylvania: The Pennsylvania State University Press.
- Brown, Robert L. 1992. Ganesh Studies of an Asian God. New Delhi: Manohar
- Bulher, J.G. (translated by Jas Burgees) 1963. The Indian sects of the Jains. Calcutta: Susil Gupta (India) Pvt. Ltd.
- Chattopadhyaya, D. 1959. Lokayata. New Delhi: People's Publishing House.
- Chatterjee, Asitkumar 2000. A Comprehensive History of Jainism (2 vols). New Delhi: Munshiram Manoharlal Publishers Pvt. Ltd.
- Choubey, M.C. 1997. Lakulisa in Indian Art and Culture. Delhi: Sharada Publishing House.
- Coomaraswamy, Ananda 1971. The Yaksha. New Delhi: Munshiram Manoharlal Publishers Pvt. Ltd.
- Conze, E. 1960. Buddhism, Its Essence and Development. Oxford: Cassirer.
- Courtright , Paul B. 1985. Ganesa Lord of Obstacles, Lord of Beginnings. New York: Oxford University Press.
- Dange, S.A. 1986-1990. Encyclopaedia of Puranic Beliefs and Practices (5 vols.). New Delhi: Navarang.
- Dasgupta, S.B. 1958. An Introduction to Tantric Buddhism. Calcutta: Calcutta University Press.
- Davidson, Ronald, M. 2002. Indian Esoteric Buddhism A Social History of the Tantric Movements. New York: Columbia University Press.

- Decaroli, Robert 2004. *Haunting the Buddha Indian Popular Religions and the Formation of Buddhism*. New York and Oxford: Oxford University Press.
- Dehejia, Vidya 1986. *Yogini Cult and Temples A Tantric Tradition*. New Delhi: National Museum.
- Deo, S.B. 1960. *Jaina Monastic Jurisprudence*. Banaras: Jaina Cultural Research Society.
- Deshmukh, P.S. 1933. *Origin and Development of Religion in Vedic Literature*. Bombay : Oxford University Press.
- Devasthali, G.V. 1965. *Religion and Mythology of Brahmanas*. Pune: University of Poona.
- Dundas, P. 1992. *The Jains*. London: Routledge.
- Dutt, Nalinaksha 1971. *Early Monastic Buddhism*. Calcutta: Firma KLM Pvt. Ltd
- Dutt, Nalinaksha 1977. *Buddhist Sects in India*. Calcutta: Firma KLM Pvt. Ltd.
- Eliot, C. 1954. *Hinduism and Buddhism (3 vols.)*. London : Roultedge and Kegan Paul.
- Fergusson, James 1873. *Tree and Serpent Worship*. London: India Museum.
- Flood, Gavin 2004. *An Introduction to Hinduism*. New Delhi: Foundation Books Pvt. Ltd.
- Flügel, Peter (ed.) 2006. *Studies in Jain History and Culture Disputes and Dialogues*. London: Routledge
- Ghurye, G.S. 1965. *Religious Consciences*. Bombay: Popular Prakashan.
- Gonda, J. 1969. *Aspects of Early Visnuism*. Delhi: Motilal Banarsidass Publishers Pvt.Ltd.
- Gonda, J. 1970. *Visnuism and Saivism*. London: University of London.
- Gonda, J. 1980. *Vedic Rituals-the Non-Solemn Rites*. Leiden: E.J.Brill.
- Gonda, J. 1985. *Change and Continuity in Indian Religion*. New Delhi: Munshiram Manoharlal Publishers Pvt. Ltd.
- Goyal, S.R. 1987. *History of Indian Buddhism*. Meerut: Kusamanjali Publications
- Guseva, N.R. 1971. *Jainism*. Bombay: Sindhu Publications.
- Jain, K.C. 2010. *History of Jainism*. New Delhi: D.K. Printworld (P) Ltd.
- Jaiswal, Suvira 2010. *The Origin and Development of Vaisnavism from 200 BC to AD 500*. New Delhi: Munshiram Manoharlal Publishers Pvt. Ltd.
- Harvey, Peter 2004. *An Introduction to Buddhism Teachings History and Practices*. New Delhi: Foundations Books Pvt. Ltd.
- Hazra, Kanai Lal 2009. *Buddhism in India A Historical Survey*. Delhi: Buddhist World Press.
- Hazra, R.C. 1940. *Puranic Records of Hindu Rites and Customs*. Dacca: Dacca University.

- Keith, A.B. 1925. Religion and Philosophy of the Vedas (2 vols). Cambridge: Cambridge University Press.
- Kinsley, David 1987. Hindu Goddesses. Delhi: Motilal Banarsidass Publishers Pvt. Ltd.
- Lal, S.K. 1980. Female Divinities in Hindu Mythology and Ritual. Pune: University of Poona.
- Lamotte, Etienne 1988. History of Indian Buddhism. Leuven: Peeters Publishers.
- Lorenzen, David 1972. The Kapalikas and Kalamukhas: Two Lost Saivite Sects. Berkeley-Los Angeles: University of California Press.
- Lorenzen, David (ed) Religious Movements in South Asia 600-1800. New Delhi: Oxford University Press.
- Mehta, M. 1969. Jaina Culture. Varanasi: P.V. Research Institute.
- Michaels, Axel 2005. Hinduism: Past and Present. Hyderabad: Orient Longman.
- Misra, R.N. 1981. Yaksha Cult and Iconography. New Delhi: Munshiram Manoharlal Publisher Pvt. Ltd.
- Nakamura, Hajime 1987. Indian Buddhism. Delhi: Motilal Banarsidass Publishers Pvt. Ltd.
- Narada, Thera 1986. The Buddha and his teachings. Kandy: Buddhist Publication Society.
- O'Flaherty, Wendy, D. 1973. Asceticism and Eroticism in the Mythology of Shiva. Oxford: Oxford University Press.
- O'Flaherty, Wendy, D. 1980. The Origins of Evil in Hindu Mythology. Berkeley-Los Angeles: University of California Press.
- Peciado-Solis 1984. The Krishna Cycle in the Puranas. Delhi: Motilal Banarsidass Publishers Pvt. Ltd.
- Radhakrishnan, S. 1999. Indian Philosophy (2 vols). New Delhi: Oxford University Press.
- Rahula, Walpola 1959. What the Buddha Taught. Bedford: Gordon Fraser.
- Renou, Louis 1953. Religions of Ancient India. London: University of London.
- Samuel, Geoffrey 2007. The Origins of the Indic Religions: Yoga and Tantra. Cambridge: Cambridge University Press.
- Schopen, Gregory 2010. Indian Monastic Buddhism. Delhi: Motilal Banarsidass Publishers Pvt. Ltd.
- Schubring, Walther (Translated by A. Sen and T.C. Burke) 1966. The Religion of the Jains. Calcutta: Sanskrit College.
- Shende, N.N. 1949. Foundations of Atharvanic Religion. Poona: Deccan College Post-Graduate & Research Institute.

Shende,N.N. 1952. Religion and Philosophy of the Atharvaveda. Poona: Bhandarkar Oriental Research Institute.

Stevenson,S. 1915. Heart of Jainism. London: Humphrey Milford.

Stutley,Margaret 1998. Ancient Indian Magic and Folklore. Delhi: Motilal Banarasidass Publishers Pvt.Ltd.

Sutherland, Gail Hinich 1991. The Disguises of the Demon: The Development of the Yaksha in Hinduism and Buddhism. Albany: State University of New York Press.

Thite, G.U. 1975. Sacrifices in the Brahmana Texts. Pune: University of Poona.

Upreti,U. 1997. The Early Buddhist World Outlook in Historical Perspective. New Delhi: Manohar Publishers and Distributors.

Veradi, Giovanni 2011. Hardships and Downfall of Buddhism in India. New Delhi: Manohar Publishers and Distributors.

Vogel, J. Ph. 1972. Indian Serpent Lore. Varanasi: Indological Book House.

Warder, A.K. 1980. Indian Buddhism. Delhi: Motilal Banarasidass Publishers Pvt. Ltd.

Weber, Max. 1958. Religions of India. Glencoe: Free Press.

White, David G. (Ed). 2000. Tantra in Practise. New Jersey: Princeton University Press.

White, David G.2006. Kiss of Yogini Tantric Sex in its South Asian Context. Chicago: University of Chicago Press.

White, David G.2007. The Alchemical Body Siddha Traditions in Medieval India. Chicago: University of Chicago Press.

William , Paul 1989. Mahayana Buddhism. London: Routledge and Kegan Paul.

Arc 202: METHODS IN ARCHAEOLOGY

Course Objectives

This course introduces students to the process of archaeological investigation from the discovery of sites to their excavation and analysis of the recovered archaeological evidence. This course includes training in field methods including excavation techniques

Course outcomes

Students learn the practical methods of doing Archaeological work.

Unit 1 6 hrs

Development and changing aims of field archaeology in Europe, West Asia and India-
Contributions of institutions and individuals to the development of field archaeology

Unit 2 4 hrs

Formation processes of an archaeological site, different categories of sites and their nature.

Unit 3 Site discovery methods 6 hrs

- a. Conventional methods- use of literary sources and folk traditions, village to village survey, field walking, survey along the water bodies, etc.
- b. Scientific methods- identification of archaeologically potent area by undertaking environmental and ecological survey, use of maps, satellite imagery and aerial photographs, Underwater archaeology and use of various geophysical methods

Unit 4 Sampling techniques 6 hrs

- a. Indiscriminate collection of data,
- b. Random sampling
- c. Systematic sampling,
- d. Site catchment analysis and ethnographic survey
- e. Reconstruction of regional settlement pattern and system

Unit 5 Excavation methods 8 hrs

- a. Sondage, Vertical,
- b. Quadrant and Horizontal excavation methods
- c. Excavation of Stone Age site, excavation of settlement sites, excavation of burial sites, excavation of fortifications and large features

Unit 6 Recording Methods **4 hrs**

- a. Stratigraphy and three dimensional recording,
- b. Contextual approach
- c. Techniques of Archaeological Photography and Photogrammetry,
- d. Methods of Drawings: Plan, Section and Pottery

Unit 7 Post-excavation Analysis **5 hrs**

- a. Classification and analyses of Artefacts
- b. Classification and analyses of Ecofacts
- c. Synthesis of analyses of artefacts and ecofacts for the reconstruction of Socio-economic organizations

Unit 7 Dating methods **6 hrs**

- a. Radiocarbon
- b. Thermoluminescence
- c. Electron Spin Resonance,
- d. Potassium Argon
- e. Fission Track
- f. Obsidian hydration
- g. Amino acid racemization
- h. Dendrochronology
- i. Cosmogenic dating
- j. Relative dating

Recommended Readings

Aitken, M.J. 1990. Science based Dating in Archaeology. London: Longmans.

Atkinson, R.J.C. 1953. Field Archaeology. London: Methuen and Co.

Barker, P. 1982. Techniques of Archaeological Excavation. London: Batsford.

Binford, L.R. 1964. A Consideration of Hypothetical Research Design, American Antiquity 29:425 441.

Crawford, O.G.S. 1953. Archaeology in the Field. London: Phoenix.

Dancey, W.S. 1985. Archaeological Field Methods: An Introduction. New Delhi: Surjeet Publications.

Harris, E.C. 1979. Principles of Archaeological Stratigraphy. London: Academic Press.

Hester, T., Heizer, R.E. and J.A. Graham 1975. Field Methods in Archaeology. Palo Alto (California): Mayfield Press.

Redman, C. 1974. Multi Stage Fieldwork and Analytical Techniques, American Antiquity 38: 611 79.

Tite, M.S. 1972. Methods of Physical Examination in Archaeology. London: Seminar.

Wheeler, R.E.M. 1954. Archaeology from the Earth. Harmondsworth: Penguin Books.

Arc 203 : PROTOHISTORY OF SOUTH ASIA

Course objectives

This course introduces the development of plant and animal domestication and the development of the first civilizations in the Indian subcontinent from their roots in the Neolithic and Chalcolithic in India

Course Outcomes

Students are introduced to some of the theories explaining the process of plant and animal domestication and the development of the first state level societies.

Unit 1 Origins of Agriculture 5 hrs

- a. Neolithic Revolution of Gordon Childe and various other theories- Oasis Theory, Hilly Flank Hypothesis, Competing Feasting Model, Demographic Theory, Evolutionary Theory and Younger Dryas Impact Event
- b. Causes and consequences
- c. Transition from hunting/gathering to food production
- d. Origins of agriculture in West Asia, Far East and Mesoamerica
- e. Development from Mesolithic to Neolithic/Chalcolithic in South Asia

Unit 2 Neolithic 8 hrs

- a. Neolithic cultures of Afghanistan and Baluchistan with special reference to Mehrgarh and Mundigak
- b. Neolithic Culture of Mid Ganga Basin- Lahuradewa, Jhusi etc.
- c. Neolithic culture of Kashmir valley
- d. Neolithic cultures of the Vindhyas
- e. South Indian Neolithic
- f. Eastern and North eastern Indian Neolithic

Unit 3 Pre/Early Harappan Cultures 5 hrs

- a. Development of Chalcolithic cultures at Mehrgarh and surrounding region
- b. Early Harappan Kulli, Nal, Amri, Kot Diji, Hakra, Ravi, Sothi, Padri, Pre Prabhas, Anarta.

Unit 4 Harappan Culture 8 hrs

- a. Origin and development of the Harappan Civilization
- b. Geographical distribution, extent and settlement patterns

- c. Town planning and architecture
- d. Trade, economy, technology and art.
- e. Harappan script- recent views
- f. Socio political and religious organization
- g. Decline : various theories, causes and consequences
- h. Late Harappan phase geographical distribution and salient features.

Unit 5 Regional Chalcolithic Traditions (Central India, Rajasthan and Gangetic Doab) 5 hrs

- a. Ahar :- distribution, architecture, characteristic features and contributions
- b. Ganeshwar and Jodhpura :- distribution and material culture
- c. Kayatha :- distribution and characteristic
- d. Malwa :- distribution, life style, socio religious aspects, technology, etc.
- e. OCP and Copper Hoards :- distribution and cultural tradition

Unit 6 Regional Chalcolithic Traditions (Deccan) 7 hrs

- a. Savalda :- distribution and cultural equipment
- b. Cultural contact with the Late Harappan of Saurashtra and the Malwa of Central India.
- c. Development of the Jorwe tradition :- cultural and socio economic aspects
- d. Regional cultural contacts
- e. Decline of the Chalcolithic causes.

Unit 7 Iron Age 7 hrs

- a. Origins of Iron in South Asia Problem and perspective
- b. Iron Age in South India and Sri Lanka Megalithic phase

Recommended Readings

Agrawal, D.P. 1982. Archaeology of India. Copenhagen: Scandinavian Institute of Asian Studies.

Agrawal, D.P. 2000. Ancient Metal Technology and Archaeology of South Asia (A Pan Asian Perspective), Aryan Books International, New Delhi

Agrawal D.P. 2007. Indus Civilization: An Interdisciplinary Perspective, New Delhi, Aryan Books International, New Delhi.

Agrawal D.P. and J.S. Kharakwal, 2002 South Asian Prehistory, New Delhi, Aryan Books International, New Delhi.

Agrawal D.P. and J.S. Kharakwal, Bronze and Iron ages in South Asia, New Delhi, Aryan Books International, New Delhi, 2003.

- Agrawal, D.P. and D.K. Chakrabarti (eds.). 1979. *Essays in Indian Protohistory*. New Delhi: D.K Publishers.
- Allchin, F.R. and B. Allchin 1993. *The Birth of Civilization in India*. revised ed. New Delhi: Penguin Books.
- Allchin, Bridget and Raymond Allchin 1982. *Rise of Civilization in India and Pakistan*. Cambridge: Cambridge University Press.
- Barker, Graeme. 1985. *Prehistoric farming in Europe*, Cambridge: University Press
- Cohen, MarkNathan. 1978. *Food Crisis in Prehistory: Overpopulation and Origins of Agriculture*, New Haven : Yale University Press
- Childe, V.G. 1951. *Man Makes Himself*. New York: Mentor.
- Cohen, Mark. 1977. *The Food Crisis in Prehistory*. New Haven: Yale University Press.
- Deo, S.B. 1979. *Problem of South Indian Megaliths*. Dharwad : Karnataka University.
- Deo, S.B. 1985. *The Megaliths: Their culture, ecology, economy and technology*, in *Recent Advances in Indian Archaeology* (S.B. Deo and K. Paddayya eds.), Deccan College, Pune.
- Dhavalikar, M.K. 1990. *First Farmers of the Deccan*, Pune: Ravish Publishers.
- Ghosh, A. 1973. *The City in Early Historical India*. Simla: Indian Institute for Advanced Studies.
- Ghosh, A. 1990. *Encyclopaedia of Indian Archaeology* (two volumes). New Delhi: Munshiram Manoharlal.
- Haimendorf, C. von. F. 1945. *The Problem of Megalithic Cultures in Middle India . Man in India XXV : 73 86*.
- Lal, B.B. 2000. *The Saraswati Flows on*. New Delhi: Aryan Books.
- Lal, Makhan. 1984. *Settlement History and the Rise of Civilization in the Ganga Yamuna Doab*. New Delhi: B.R Publishing House.
- Mohanty,R.K., and S.R. Walimbe, 1993. *A Demographic Approach to the Vidarbha Megalithic Cultures Man and Environment, XVIII (2):93-103*.
- Mohanty,R.K. and V.Selvakumar,2002. *The Archaeology of Megaliths in India:1947-1997*, in *Indian Archaeology in Retrospect*, (S.Settar and R.Korisettar Eds.), New Delhi:Manohar Publishers.Vol.1:313-52 & 479-81
- Moorti, U.S. 1994. *Megalithic Cultures of South India : Socio Economic Perspectives*. Varanasi: Ganga Kaveri.
- Paddayya, K. 2001 2002. *The Problem of Ashmound of Southern Deccan in the light of Budihal Excavations*. *Bulletin of the Deccan College Research Institute* 60 61: 189 225.
- Paddayya, K. (ed.). 2002. *Recent Studies in Indian Archaeology*. New Delhi: ICHR and Munshiram.

- Possehl, G.L. 1979 (ed.). 1979. *Ancient Cities of the Indus*. New Delhi: Vikas Publishing House.
- Possehl, G.L. (ed.). 1993. *Harappan Civilization A Recent Perspective*. New Delhi: Oxford and IBH Publishing Co.
- Possehl, G. 1999. *The Indus Age*. New Delhi: Oxford.
- Possehl G.L. 2002 *Indus Civilization: a Contemporary Perspective*, New Delhi, Vistaar Publication.
- Roy, T.N. 1983. *The Ganges Civilization: A Critical Study of the PGW and NBPW Periods of Ganga Plains of India*. New Delhi: Ramanand Vidya Bhavan.
- Sankalia, H.D. 1977. *Prehistory of India*. New Delhi: Munshiram Manoharlal.
- Sankalia, H.D. 1974. *Pre and Protohistory of India and Pakistan*. Pune: Deccan College.
- Sarkar Amrita. 2011. Chalcolithic and modern potting at Gilund, Rajasthan: a cautionary tale in *Antiquity* vol. 85: 994-1007
- Sarkar Amrita. 2012. A Study of Development of the Ahar Culture in Southeast Region of Rajasthan, India from a Ceramic Point of View in *Ancient Asia* vol 3: 11-35
- Sarkar Amrita. 2013. Contextualizing Ahar Culture Phase in Central India in *Art and Archaeology of Madhya Pradesh and Adjoining Regions: Recent Perspectives* edited by Pankaj Rag, Vasant Shinde and O.P. Mishra, Directorate of Archaeology, Archives and Museum, Govt. of Madhya Pradesh, Bhopal, pp- 163-174
- Sarkar Amrita and Vasant Shinde. 2013. On sedentism in the Mewar (south-east) Region of Rajasthan, India with Vasant Shinde in *Pragdhara* no 21-22: 297-308
- Sharma, G.R. et al. 1980. *Beginnings of Agriculture*. Allahabad: Allahabad University Press.
- Shinde, Vasant. 1989. New Light on the Origin, Settlement System and Decline of the Jorwe Culture of the Deccan, *India South Asian Studies* 5:60 72
- Shinde, Vasant. 1990. Settlement pattern of the Savalda culture The first farming community of Maharashtra. *Bulletin of Deccan College Research Institute*, vols. 49 50 (Sankalia Memorial Volume) 49: 417 426
- Shinde, Vasant. 1991. Craft specialization and social organization in the Chalcolithic Deccan, *India, Antiquity* 65(249): 796 807.
- Shinde, Vasant. 1994. *The Deccan Chalcolithic: A Recent Perspective, Man and Environment*, XIX (1-2) : 169 178.
- Shinde, Vasant. 1998. *Early Farming Community in the Central Tapi Basin (Study of Settlement and Subsistence Patterns)*, Munshiram Manoharlal Publishers, New Delhi
- Shinde, Vasant. 2000. Origin and development of Chalcolithic in Central India, *Bulletin of Indo Pacific Prehistory Association*, 19: 125 136.

Shinde, Vasant, et al. 2002. Emergence, Development and Spread of Agricultural Communities in South Asia. In *Origins of Pottery and Agriculture*, Y. Yasuda (ed.), Roli Books and Lustre Press, Singapore, pp. 89-115.

Shinde, Vasant and S. Sinha Deshpande 2003. South Indian Chalcolithic, *The Encyclopedia of Prehistory, Volume 8: South and Southwest Asia* (Kluwer Academic / Plenum Publishers).

Shinde, Vasant and S. Sinha Deshpande 2003 Central Indian Chalcolithic, *The Encyclopedia of Prehistory, Volume 8: South and Southwest Asia* (Kluwer Academic / Plenum Publishers).

Shinde, Vasant et al. 2004 Human Response to Holocene Climate Changes- A Case Study of Western India Between 5th to 3rd Millennium BC. In Y. Yasuda and V. Shinde (eds), *Monsoon and Civilization*, Roli Books and Lustre Press, Singapore: 383-406.

Shinde Vasant and Amrita Sarkar. 2014. Rajasthan Chalcolithic in *History of Ancient India vol II: Protohistoric Foundations* edited by Dilip K Chakraborti and Makkhan Lal, Vivekananda International Foundation and Aryan Books International, New Delhi. Pp- 465-479, 2014

Shinde Vasant and Amrita Sarkar. 2014. Gilund in *History of Ancient India vol II: Protohistoric Foundations* edited by Dilip K Chakraborti and Makkhan Lal, Vivekananda International Foundation and Aryan Books International, New Delhi. Pp- 691-699

Singh, Purushottam. 1991. *Neolithic Origins*. New Delhi: Agam Kala Prakashan.

Tripathi, Vibha. 1976. *The Painted Grey Ware : An Iron Age Culture of Northern India*. Delhi: Concept.

Tripathy, Vibha. 2001. *Age of Iron in South Asia: Legacy and Tradition*, Aryan Books International, New Delhi.

Wheeler, R.E.M. 1968. *Indus Civilization. (Third Edition)*. Cambridge: Cambridge University Press.

Arc 204: SOCIAL AND ECONOMIC HISTORY OF INDIA (up to 1200 C.E.)

Course Objectives

Students are introduced to the social and economic institutions in Ancient India such as Varna, Ashrama, Marriage, revenue system and trade.

Course Outcomes

Students get acquainted with various developmental phases of the Indian society and economy and its institutions.

Unit 1	4 hrs
a. Literary sources of social and economic history	
b. Aims and scope of social and economic history	
c. Historical evolution of important social institutions	
Unit 2	10 hrs
a. Origin of the Varna order in the Vedic and Later Vedic periods	
b. Development of Varna and Caste in the post-Vedic period	
c. Theory of mixed caste	
Unit 3	12 hrs
a. Significance of Samskaras in Ancient India	
b. Concept and place of Ashramas in ancient Indian society	
c. Joint patriarchal family system	
d. Institution of marriage	
e. Exogamy and Endogamy	
f. Position of women in family and society: Custom of sati, niyoga, widowhood.	
Unit 4	5 hrs
a. Education in the Vedic and Later Vedic periods	
b. Emergence of Buddhist monastic universities	
c. The Nalanda Mahavihara, Vikramshila	
Unit 5	14 hrs
a. Emergence of complex societies, beginnings of urbanization and trade in ancient India,	
b. Agro-pastoral economy and development of land-revenue system	
c. Guilds	

- d. Indo-Roman trade
- e. Recent studies in decline of trade, the decay of the urban centres and the feudalisation of Society.

Recommended Readings

- Altekar, A.S. 1973. Position of Women in Hindu Civilization. Delhi: Motilal Banarasidass.
- Altekar, A.S. 1975. Education in Ancient India. Varanasi: Manohar Prakashan.
- Apte, Usha M. 1978. The Sacrament of Marriage in Hindu Society from Vedic Period to Dharmashatras. Delhi: Ajanta Publications.
- Bailey, G. and I.Mabbett. 2003. The Sociology of Early Buddhism. Cambridge: Cambridge University Press.
- Banerjea, G. 1923. The Hindu Law of Marriage and Stridhana. Calcutta: Calcutta University.
- Begley, Vimala and Richard Daniel De Puma (eds) 1991. Rome and India: The Ancient Sea Trade. New Delhi: Oxford University Press.
- Bhattacharya, N.N. 1980. Indian Puberty Rites. New Delhi: Munshiram Manoharlal.
- Bhattacharya, N.N. 1995. Ancient Indian Rituals and Their Social Contents. New Delhi: Manohar.
- Brough, J. 1953. The Early Brahmanical System of Gotra and Pravara. Cambridge: Cambridge University Press.
- Chakravarti, Ranabir 2002. Trade and Traders in Early Society. New Delhi: Manohar.
- Chakravarti, Uma 1989. The Social Dimensions of Early Buddhism. New Delhi: Oxford University Press.
- Champakalakshmi, R. 1996. Trade, Ideology and Urbanization : South India 300 BC to AD 1300. Delhi: Oxford University Press.
- Deshpande, Kamalabai 1936. Child in Ancient India. Poona: Kamalabai Deshpande.
- Dumont, Louis 1980. Homo Hierarchius: The Caste system and Its Implications. Chicago and London: The University of Chicago Press.
- Dutta, N.K. 1931. Origin and Growth of Caste in India (vol.1). London: Harper and Row.
- Eliade, M. 1975. Rites and Symbols of Initiation. London: Harper and Row.
- Erdosy, George 1988. Urbanisation in Early Historical India. Oxford: BAR International Series.
- Ghosh, A. 1973. The City in Early Historical India. Simla: Indian Institute of Advanced Study.
- Ghurye, G.S. 1957. Caste and Class in India. Bombay: Popular Prakashan.
- Ghurye, G.S. 1972. Two Brahmanical Institutes: Gotra and Charana. Bombay: Popular Prakashan.
- Gonda, J. 1980. Vedic Rituals-the Non-Solemn Rites. Leiden: E.J.Brill.
- Heesterman, J.C. 1957. The Ancient Indian Royal Consecration. The Hague: Mouton.

- Horner,D.B. 1930. Women under Primitive Buddhism. London: George Routledge and Sons Ltd.
- Hutton, J.H. 1963. Caste in India Its Nature, Function and Origiins.Oxford: Oxford University Press.
- Jaiswal,Suvira 2000. Caste: Origin, Function and Dimensions of Change. Delhi: Manohar.
- Jha, D.N. 1967. Revenue System in Post-Maurya and Gupta Times. Calcutta: Punthi Pustak.
- Jha, D.N. (ed.) 1987. Feudal Social Formation in Early India. New Delhi: South Asia Books.
- Jha, D.N. (ed.) 2002. The Feudal Order: State, Society and Ideology in Early Medieval India. New Delhi: Manohar.
- Jha, Vivekanand 1970. Varnasamkara in the Dharmasutras: Theory and Practice, Journal of Economic and Social History of the Orient, 12(3):273-288.
- Kane, P.V. 1941. History of Dharmashastra (Vol.II).Pune: Bhandarkar Oriental Research Institute.
- Karandikar, S.V.1928. Hindu Exogamy. Bombay: Advocate of India Press.
- Klass, Morton 1993. Caste: The Emergence of South Asian Social System. New Delhi: Manohar.
- Majumdar, R.C. 1922. Corporate Life in Ancient India. Calcutta: Calcutta University.
- Maity, S.K. 1970. Economic life in Northern India in the Gupta Period. Delhi: Motilal Banarasidass.
- Mittal. Sushil and Gene Thursby (eds.) 2005. The Hindu World. New York and London: Routledge.
- Moon, Vasant (ed.) 1990. Writing and Speeches of Dr.B.R.Ambedkar, Vol.1. Bombay: Government of Maharashtra.
- Motichandra1977. Trade and Trade Routes in Ancient India. New Delhi: Abhinav Publications.
- Mukherji R.K. 2011(reprint). Ancient Indian Education Brahmanical and Buddhist. New Delhi: Motilal Banarasidass.
- Nandi, R.N.2000. State Formation, Agrarian Growth and Social Change in Feudal South India c.AD 600-1200. New Delhi: Manohar.
- Narang, Bhim Sain1991. Concept of Stridhana in Ancient India. Delhi : Parimal Publications.
- Olivelle, Patrick 1993. The Asrama System: the History and Hermeneutics of a religious Institution. New York and Oxford: Oxford University Press.
- Pandey,R.B. 1966. Hindu Sanskaras. Varanasi: Chowkhamba Vidyabhavan
- Parasher-Sen Aloka(ed.) 2004. Subordinate and Marginal Groups in Early India. New Delhi: Oxford University Press.

- Quigley, Declan 1993. *The Interpretation of Caste*. Oxford: Clarendon Press.
- Rawlinson, H.G. 1916. *Intercourse between India and the Western World*. Cambridge: Cambridge University Press.
- Ray, H.P. 1986. *Monastery and Guild: Commerce Under the Satavahanas*. New Delhi: Oxford University Press.
- Sankalia, H.D. 1934. *The University of Nalanda*. Madras: B.G. Paul & Co.
- Sahu, B.P. (ed.) 2006. *Iron and Social Change in Early India*. New Delhi: Oxford University Press.
- Sengupta, Nilakshi 1965. *Evolution of Hindu Marriage*. Bombay: Popular Prakashan.
- Sharma, R.S. 1958. *Shudras in Ancient India*. Delhi: Motilal Banarasidass.
- Sharma, R.S. 1965. *Indian Feudalism*. Calcutta: Calcutta University.
- Sharma, R.S. 1966. *Light on Early Society and Economy*. Bombay: Manaktalas.
- Sharma, R.S. 1985. *Material Culture and Social Formation in Ancient India*. New Delhi: Macmillan India.
- Sharma, R.S. 1987. *Urban Decay in India*. New Delhi: Munshiram Manoharlal.
- Shastri, Shakuntala Rao 1969. *Women in the Vedic Age*. Bombay: Bhartiya Vidya Bhavan.
- Singh, Santosh 1989. *A Passion for Flames*. Jaipur: RBSA Publications.
- Sontheimer, G.D. 1977. *The Joint Hindu Family and its Evolution as a Legal Institution*. New Delhi: Munshiram Manoharlal.
- Thapar, Romila 1984. *Ancient Indian Social History: Some Interpretations*. Hyderabad: Orient Longman.
- Thapar, Romila 1990. *From Lineage and State*. New Delhi: Oxford University Press.
- Thaplyal, K.K. 1996. *Guilds in Ancient India*. New Delhi: New Age International Ltd.
- Tomber, Roberta 2008. *Indo-Roman Trade: From Pots to Pepper*. London: G. Duckworth Co. Ltd.
- Wagale, Narendra 1966. *Society at the time of Buddha*. Bombay: Popular Prakashan.
- Warmington, E.H. 1928. *Commerce between the Roman Empire and India*. Cambridge: Cambridge University Press.
- Wheeler, R.E.M. 1954. *Rome beyond the Imperial Frontiers*. London: G. Bell and Sons Ltd.

Arc 301: ART AND ARCHITECTURE OF INDIA

(up to 600 C.E.)

Course Objectives

Students are introduced to the major developments in art and Architecture in India from the earliest rock cut caves to the beginning of temple architecture

Course Outcomes

Students gain knowledge about the major art and architectural styles and their development through the period.

Unit 1 Traditions of Art and Architecture in India 5 hrs

- a. Introduction to components of Art and Architecture
- b. Rock Art.
- c. Protohistoric Art –Terracottas, Bronzes, Ivories, Stone.
- d. Art of the pre-Mauryan period.
- e. Sources of Inspiration of Mauryan Art and Architecture: Foreign and Indigenous.

Unit 2 Emergence and Development of Structural Stupa Architecture 9 hrs

- a. Origin of Stupa Architecture -Theoretical aspects.
- b. Stupa Architecture - Pre-Mauryan and Mauryan period.
- c. North and Central India-Sanchi,Bharut, Dhammekh, Sanghol
- d. Deccan-Pavani, Amravati, Nagarjunkonda, Kanganhalli.
- e. Gandhar-Taxila,Mirpur-Khas,Shahaji-ki-Dheri
- f. Structural monasteries and Chaityas.

Unit 3 Emergence and Development of Rock-cut Architecture 7 hrs

- a. Origin of Rock-cut Architecture-Theoretical aspects.
- b. Eastern India-Barabar Hills, Udaygiri.Khandagiri.
- c. Western Deccan- Bhaje,Pitalkhora,Kondivate,Thanale,Kondane,Bedasa,Karle, Nasik,Kanheri, Junnar,Ajanta
- d. Eastern Deccan-Guntapalle.
- e. Central India-Bagh, Udayagiri.
- f. Western India-Junagr, Talaja.
- g. Hindu rock-cut caves at Elephanta and Udaygiri.
- h. Study of Rock-cut Architecture-Practical Training of Plan drawing.

Unit 4 Emergence and Development of Temple Architecture 14 hrs

- a. Concept and symbolism of Temple.
- b. Origin of Temple Architecture- Theoretical aspects.
- c. Archaeological remains of structural temples.
- d. Temple Architecture during the Gupta period.
- e. Temple Architecture during the Vakataka period.

Unit 5 Sculptural Art and Paintings - Emergence and Development 10 hrs

- a. Sculptural Art and Paintings -Concept and Symbolism.
- b. Pillars.
- c. Terracottas, Ivories, Paintings and Bronzes.
- d. Stone sculptures-Gandhar, Mathura, Sarnath, Andhra schools of Art.
- e. Art during the Vakataka period.

Recommended Readings

Agrawal.V.S. 1940. Terracotta Figurines of Ahichhatra. Varanasi: Prithvi Prakashan.

Agrawal, V.S. 1972. Indian Art. Varanasi: Prithvi Prakashan.

Bacchofer, Ludwig 1974. Early Indian Sculpture (2 Vols). New Delhi: Munshiram Manoharlal Pvt.Ltd.

Barrett, Douglas 1954. Sculptures from the Amravati in the British Museum. London: British Museum Press.

Barua , B. 1934-37. Barhut Vol.I-III. Calcutta: Indian Research Institute.

Behrend, Kurt A.2004. The Buddhist Architecture of Gandhara. Leiden: Brill.

Brown, Percy 1940. Indian Architecture (Buddhist and Hindu Periods). Bombay: D.B. Taraporevala Sons and Co.

Chakravarti, K.K.1997. Early Buddhist Art of Bodhgaya. New Delhi: Munshiram Manoharlal Pvt. Ltd.

Czuma, Stanislaw.J.1985. Kushana sculpture: Images from early India. Ohio: The Cleveland Museum.

Cunningham, Alexander 1966. The Bhilsa Topes. Varanasi: Indological Book Corporation.

Cunningham, Alexander 1892. Mahabodhi or the Great Buddhist temple under the Bodhi tree at Buddha Gaya . London: W.H.Allen & Co.

Cunningham, Alexander 1965. The Stupa of Bharhut. Varanasi: Indological Book Corporation.

- Dallapiccola, L.S.Z. Lallemant. 1980. *The Stupa : Its Religious, Historical, and Architectural Significance*. Wiesbaden: Franz Steiner Verlag.
- Deglurkar, G.B. 2004. *Portrayal of the Women in the Art and Literature of the Ancient Deccan*. Jaipur: Publications Scheme.
- Deglurkar, G.B. 2005. *Sursundari*. Pune: Bhartiya Vidhya Bhavan (in Marathi).
- Dehejia, Vidya 1972. *Early Buddhist Rock Temples A chronological Study*. London: Thames and Hudson.
- Dehejia, Vidya(ed.)1996. *The Unseen Presence: The Buddha and Sanchi*. Mumbai: Marg Publications.
- Dehejia, Vidya 1997. *Discourse in Early Buddhist Art*, New Delhi: Munishiram Manoharlal Publishers Pvt. Ltd.
- Dhavalikar, M.K. 1977. *Masterpieces of Indian Terracottas*. Bombay: D.B.Taraporevala Sons and Co. Pvt. Ltd.
- Dhavalikar, M. K. 1985. *Late Hinayana Caves of Western India*. Pune: Deccan College.
- Dhavalikar, M. K. 2004. *Satavahana Art*. Delhi: Sharada Publishing House.
- Dwivedi, V.K.1976. *Indian Ivories*. New Delhi: Agam Kala Prakashan.
- Errington, Elizabeth and Joe Cribb 1992. *The Crossroads of Asia*. Cambridge : The Ancient Indian and Iran Trust.
- Fergusson, James 1876. *A History of Indian and Eastern Architecture (vol. 1)*. London: John Murray.
- Fergusson, James and James Burgess 2000(reprint). *The Cave Temples of India*. New Delhi: Munshiram Manoharlal.
- Foucher, Alfred 1972. *The Beginnings of Buddhist Art*. New Delhi: Indological Book Corporation.
- Ghosh, A.1967. *Ajanta Murals*. New Delhi: Archaeological Survey of India.
- Ghosh, A. 1974. *Jaina Art and Architecture (Vol 1-3)*, NewDelhi: Bharatiya Jnanapith
- Grunwedel, Albert 1978(reprint) *Buddhist Art of India*. New Delhi: Asian Educational Services.
- Gupta, S.P. 1980. *Roots of Indian Art*. New Delhi: B.R. Publishing Corporation.
- Gupta, S.P. (ed.). 2003. *Kushana Sculptures from Sanghol*. New Delhi: National Museum.
- Harle, James 1986. *The Art and Architecture of the Indian Subcontinent*. Harmondsworth : Penguin.

- Hawkes, J. and Akira Shimada (eds.) 2009. *Buddhist Stupas in South Asia*. New Delhi: Oxford University Press.
- Huntington, Susana. L. with John Huntington 1985. *The Art and Architecture of India*. New York: Weatherhill.
- Ingholt, Harald 1957. *Gandhara Art in Pakistan*. New York : Patheon Books Inc.,
- Joshi N.P. 1966. *Mathura Sculptures*. Mathura: Archaeological Museum.
- Kala, S.C. 1951. *Bharhut Vedika*. Allahabad: Municipal Museum.
- Khandalwala, Karl(ed.) 1991. *Golden Age: Gupta Art Empire, Province and Influence*. Bombay: Marg Publications.
- Knox, Robert 1992. *Amravati- Buddhist Sculpture from the Great Stupa*. London: British Museum Press.
- Marshall, John 1960. *The Buddhist Art of Gandhara*. Cambridge: Cambridge University Press.
- Mathur, Dr. Suman 1998. *Art and Culture under Kushanas*. Delhi: Bharatiya Kala Prakashan.
- Mathur, Dr. Vijay Kumar 1996. *Art and Culture under Sungas*. Delhi: Bhartiya Kala Prakashan.
- Mate, M.S. 1998. *Prachin Kala Bharati*. Pune: Continental Prakashan.
- Meister, Michael W. and M.A. Dhaky (ed.) 1999. *Encyclopedia of Indian Temple Architecture*. Vol. II , Part 1, North India: Foundations of North Indian Style C 250 BC- AD 1100. Delhi: American Institute of Indian Studies and Oxford University Press.
- Mitra, Debla 1971. *Buddhist Monuments*. Calcutta : Sahitya Samsad.
- Nagaraju, S. 1981. *Buddhist Architecture of Western India*. New Delhi: Agam Kala Prakashan.
- Pandey, C.B. 1988 (reprint). *Mauryan Art*. New Delhi: Bhartiya Vidya Prakashan.
- Parimoo Ratan et al (ed) 1991. *The Art of Ajanta: New Perspective (2 vols.)*. New Delhi: Books and Books.
- Quintanilla, Sonya Rhie 2007. *History of Early Stone Sculptures at Mathura CA 150 BCE-100 CE*. Leiden: Brill
- Rama, K. 1995. *Buddhist Art of Nagarjunkonda*. New Delhi :Sundeep Prakashan.
- Ramachandra Rao, P.R. 1981. *Andhra Sculpture*. Hyderabad: Akshara.
- Rao, Dr. Manjushree 1994. *Sanchi Sculptures*. New Delhi: Akay Book Corporation.
- Ray, Amita 1983. *Life and Art of Early Andhradesa*. Delhi: Agam Kala Prakashan.

- Ray, Niharranjan 1965. Maurya and Sunga Art. Calcutta: Indian Studies Past and Present.
- Rosen Field, John 1983. The Dynastic Art of the Kushanas. New Delhi : Munshiram Manoharlal Publishers Pvt. Ltd.
- Roy, Anamika 1994. Amravati (2 vols.). New Delhi: Agam Kala Prakashan .
- Saraswati, S.K. 1957. Survey of Indian Sculpture. Calcutta: Firma K.L.M Publication.
- Sarkar, H. 1966. Studies in Early Buddhist Architecture of India. New Delhi: Munshiram Manoharlal.
- Schlingloff, Dieter 1988. Studies in the Ajanta Paintings: Identifications and Interpretations. Delhi: Ajanta Publications.
- Sharma, R.C. 1984. Buddhist Art of Mathura. New Delhi: Agam Kala Prakashan.
- Sivaramamurti, C .1942. Amaravati Sculptures in the Madras Government Museum. Madras: Government Press.
- Sivaramamurti, C .1962. Indian Bronzes. Bombay: Marg Publications.
- Smith, V.A. 1969. A History of Fine Arts in India and Ceylon. Bombay : D.B.Taraporewala Sons and Co.
- Snodgrass, Adrian 1992. The Symbolism of the Stupa. Delhi: Motilal Banarassidas.
- Spink, Walter. 2005-2007. Ajanta: History and Development (5 vols.) Leiden: Brill.
- Srinivasan, D.M. 1989. Mathura: The Cultural Heritage. New Delhi: American Institute of Indian Studies.
- Stone, Elizabeth Rosen 1994. The Buddhist Art of Nagarjunkonda. Delhi: Motilal Banarassidas Publisher Pvt. Ltd.
- Tripathi, Aruna 2003. Buddhist Art of Kosambi. New Delhi: D.K. Printworld.
- Williams, Joanna 1982. The Art of Gupta Indian-Empire and Province. New Jersey: Princeton University Press.
- Zimmer, H. 1964. The Art of Indian Asia (2 vols.). New York: Bollingen Foundations Inc.

Arc 302: ANCIENT INDIAN ICONOGRAPHY

Course Objectives

The objective of this course is to introduce students to the iconography of the images of the different religious traditions of Hinduism, Buddhism and Jainism. The development of iconographic depictions in each of these traditions is also outlined.

Course outcome

Students learn about the different iconographic traditions in the Indian Subcontinent with concern to the religious ideas and trends.

Unit 1 Introduction to Iconography 5 hrs 60

- a. Significance of iconographic studies, sources
- b. Concept and symbolism of icon and image worship
- c. Origin and Antiquity of image worship in India
- d. Iconometry
- e. Text and image: Brief review of Ancient Indian Shilpa Texts and their role in development of iconography

Unit 2 Hindu Iconography 20 hrs

- a. Emergence and development of Iconography of Vishnu: Sadharan murtis, incarnations, other important representations of Vishnu, Regional traits of Vaishnava iconography
- b. Emergence and development of Iconography of Shiva: Anugraha murtis ,Samhara murtis ,Vishesa murtis, Regional traits of Shaiva iconography
- c. Brahma, Ganesha, Surya, Karttikeya
- d. Development of Iconography of Goddesses: Saptamatrikas, Durga, Lakshmi, Saraswati, Mahishsuramardini, Chamunda, Bhairavi, Regional traits of Shakta iconography
- e. Other Important divinities: Ashtadikpalas , Navagrahas

Unit 3 Buddhist Iconography 7 hrs

- a. Origin and development of Buddhist imagery
- b. Aniconic representation of the Buddha: Concept and meaning
- c. Origin of the Buddha image, various theories of the origin of Buddha image, Different iconographic forms
- d. Manushi and Dhyani Buddhas
- e. Bodhisattvas: Concept and symbolism, emergence and development of Bodhisattva images, Avalokiteshvara, Vajrapani, Maitreya, Manjushri

- f. Female Buddhist deities: Origin and development, Tara, Pradnyaparamita, Chunda, Bhrukuti, Marichi, Vasudhara, Mahamayuri, Hariti
- g. Important Buddhist Deities: Trilokyavijaya, Aparajita, Shambara, Jambhala

Unit 4 Jaina Iconography 5 hrs

- a. Origin and development of Jain images
- b. Ayagapatta
- c. Jaina Tirthankaras: Forms of Tirthankara images ,Sarvatobhadra ,Chaturvinshati
- d. Jaina Yakshas and Yakshinis: Ambika, Chakreshvari, Padmavati, Saraswati, Kubera

Unit 5 Miscellaneous iconographic forms 8 hrs

- a. Role and significance of minor deities in ancient religious setting
- b. Pastoral Deities
- c. Goddesses of Fertility
- d. Yakshas, Nagas
- e. Vidyadharas, Gandharvas, Kinnaras
- f. Surasundaris and Mithun Shilpas
- g. Hero stones and Sati stones
- h. Composite animals
- i. Syncretic and Composite Iconic Forms: Origin ,development and significance

Study tour: Identification of Icons

Recommended Readings

Agrawala, P.K.1994. Studies in Indian Iconography. Jaipur: Publication Scheme.

Agrawala, Urmila. 1995. North Indian Temple Sculpture. New Delhi: Munshiram Manoharlal.

Bakkar, Hans.1997. The Vakatakas an Essay in Hindu Iconology (Gonda Indological Series). Groningen: Egbert Forsten.

1989. Buddhist Iconography. New Delhi: Tibet House.

Banerjee, J.N.1974. Development of Hindu Iconography. New Delhi: Munshiram Manoharlal.

Bhattacharya, A.K.2010. Historical Development of Jaina Iconography (A comprehensive study), Delhi: Bharatiya Kala Prakashan.

Bhattacharya, B. 1958. Indian Buddhist Iconography. Calcutta: K.L.Mukhopadhyaya.

Bhattacharya, D. 1980. Iconology of Composite Images. New Delhi: Munshiram Manoharlal Publications.

- Bruhn, Klaus 1963. Jina Images of Deogarh vol.I. Leiden: Brill.
- Champaklakshmi, R.1981. Vaishnava Iconography in the Tamil Country. Delhi: Orient Longman.
- Chawla, J.1990. The Rigvedic Deities and their Iconic Forms. New Delhi: Munshiram Manoharlal.
- Czuma, Stanislaw.J.1985. Kushana sculpture: Images from early India. Ohio: The Cleveland Museum.
- Dardwate P. P. 1995. "A Cultural Study of Brahmarical Sycretistic Icons" Pune : Ph.D. Thesls Submitted to University, Pune
- Deglurkar, G.B. 2004. Portrayal of the Women in the Art and Literature of the Ancient Deccan. Jaipur: Publications Scheme.
- Deglurkar, G.B. 2007. Vishnumurti Namastubhyam. Sri Dwarkadhish Charities, Karnala, Raigad.
- Daheja, Vidya 1986. Yogini Cult and Temples. New Delhi: National Museum.
- Desai, Devangana 1996. The Religious Imagery of Khajuraho. Mumbai: Project for the Indian Cultural Studies Publication.
- Desai, Kalpana 1973. Iconography of Vishnu. New Delhi: Abhinav Publications.
- Gopinath Rao, T.A. 1985. (2nd ed.) Elements of Hindu Iconography. Varanasi: Motilal Banarasidas.
- Gupte, R.S. 1971. Iconography of Hindus, Buddhists and Jainas. Bombay: D.B. Taraporewala Sons and Co.
- Huntington, Susan 1984. The Pala-Sena School of Sculpture. Leiden: E. J. Brill.
- Joshi N.P. 1966. Mathura Sculptures. Mathura: Archaeological Museum.
- Joshi, N.P.1979. Bhartiya Murtishastra. Nagpur: Maharashtra Grantha Nirmiti Mandal.
- Kamalakar, G.(ed.).1993. Vishnu in Art, Thought and Literature. Hyderabad: Birla Archaeological and Cultural Research.
- Kim, Inchang.1997. The Future Buddha Maitreya: An Iconological Study. New Delhi: D. K. Print World.
- Khandalwala, Karl (ed.) 1991. Golden Age: Gupta Art Empire, Province and Influence. Bombay: Marg Publications.
- Krishnan, Y.1996. The Buddha image: Its origin and Development. New Delhi: Munshiram Manoharlal Pvt. Ltd.
- Lal, Shyam Kishor 1980. Female Divinities in Hindu Mythology and Ritual. Pune: University of Poona
- Liebert, Gosta 1985, Iconographic Dictionary of the Indian Religions: Hinduism, Buddhism and Jainism. Delhi: Sri Satguru Publications.
- Lokesh, Chandra 1987. Buddhist Iconography 2 vols. New Delhi: Aditya Prakashan.

- Mani, V.R.1995. Saptamatrikas in Indian Religion and Art. New Delhi: Mittal Publications.
- Mishra, Rajani 1989. Brahma-Worship, Tradition and Iconography. Delhi: Kanishka Publication House.
- Mishra, Ramnath 1981. Yaksha Cult and Iconography. New Delhi: Munshiram Manoharlal.
- Mukhopadhyay, Santi Priya1985. Amitabha and his Family. Delhi: Agam Kala Prakashan.
- Nagar, Shanti Lal 1988. Mahishasurmardini in Indian Art. New Delhi: Aditya Prakashan.
- Panikkar, Shivaji. K.1997. Saptamatraka Worship and Sculptures, An Iconological Interpretations of Conflicts. New Delhi: D.K.Printworld.
- Parimoo, Ratan 1982. Life of Buddha in Indian Sculpture (Ashta-Maha-Pratiharyan): An Iconological Analysis. New Delhi: Kanak Publications.
- Pushpendra Kumar 1993. Tara: The Supreme Goddess. Delhi Bharatiya Vidya Prakashan.
- Ramachandra Rao 1988-91. Pratima Kosa- Encyclopedia of Indian Iconography 6 vols. Bangalore: Kalpataru Research Academy.
- Reechard, J.Cohen 2003. Essays on Jaina Art. New Delhi: Manohar Publications.
- Sahai, Bhagwant 1975. Iconography of Minor Hindu and Buddhist Deities. New Delhi Sahai, Bhagwant 2006. Recent Researches in Indian Art and Iconography. Missouri: Kaveri Prakashan.
- Sarma, I.K.1982. The Development of Early Shaiva Art and Architecture. (With Special Reference to Andhradesha). Delhi: Abhinava Publications.
- Sinha, Kanchan 1979. Karttikeya in Indian Art and Literature. Delhi: Sundeep Prakashan.
- Shah,U.P. 1987. Jaina Rupmandana. New Delhi: Abhinav Publication.
- Shastri, T. Ganpati. (Ed.) 1966. Samaranganasutradhara of Bhoja. Baroda: Oriental Institute.
- Shaw, Marinda 2008. Buddhist Goddesses of India. New Delhi: Munshiram Manoharlal Pvt. Ltd.
- Sivrammurti, C.1961. Indian Sculpture. New Delhi: Allied Publishers Pvt. Ltd.
- Sivaramamurty, C. 1963. South Indian Bronzes. New Delhi: Lalit Kala Academy.
- Soundara Rajan, K. V.1982. India's Religious Art. New Delhi: Cosmo Publication.
- Sthapati V. Ganapati and Sthapati 2006. Indian Sculpture and Iconography. Ahmadabad: Mapin Publishing.
- Upadhyaya, Vasudev 1970. Prachin Bharatiya Murti Vijnana (Hindi). Varanasi: Chowkhamba Sanskrit Series.
- Vyas, R.T. 1995. Studies in Jaina Art and Iconography and allied Subjects in Honour of U.P.Shah. Vadodara: Oriental Institute.
- Yadava, Nirmala 1997. Ganesha in Indian Art and Literature. Jaipur: Publications Scheme.
- Zimmer, Heinrich 2010. Myths and Symbols in Indian Art and Civilization, New Delhi: Motilal Banarassidas.

Arc 303: ANCIENT INDIAN EPIGRAPHY AND PALEOGRAPHY

Course Objectives

The objective of this course is to learn about the ancient scripts and key epigraphical records from the Indian Subcontinent

Course outcomes

In this course students learn about the development of modern Indian scripts from the ancient scripts. They become familiar with the most important epigraphical records.

Unit 1 Introduction to Epigraphy and Paleography 5 hrs

- a. Epigraphy and Paleography: Terminology, Scope and Importance in Reconstruction of History
- b. Historiography of Epigraphic Studies
- c. Antiquity of Writing in Ancient India
- d. Materials and Techniques of Writing
- e. Theories of Origin of Brahmi and Kharoshti Scripts
- f. Brahmi and Kharoshti Scripts: Orthography and Decipherment of Alphabets and Numerals

Unit 2 Edicts of Ashoka 10 hrs

- a. Nature, Geographic Distribution, Categories and Language
- b. Decipherment of Major Rock Edicts (Girnar Version)
Nos. I, II, IV, VI, IX and XII

Unit 3 Calendrical Systems in Ancient India 8 hrs

- a. Dates and Chronograms
- b. Eras: Vikrama, Shaka and Gupta Eras

Unit 4 Study of Inscriptions of Historical and Cultural Importance 20 hrs

- a. Sohgaura Copperplate Inscription
- b. Besnagar Garuda Pillar Inscription of Heliodorus
- c. Bhattiprolu Relic Casket Inscription
- d. Hathigumpha Inscription of Kharavela
- e. Naneghat Inscription of Naganika
- f. Nasik Cave Inscription of Nahapana
- g. Nasik Cave Inscription of Vasithiputa Pulumavi, 19th Regnal Year

- h. Junagarh Inscription of Rudradamana
- i. Nagarjunikonda Inscription of Virapurisadatta, 6th Regnal Year
- j. Sarnath Buddhist Image Inscription of Kanishka, 3rd Regnal Year
- k. Allahabad Prashasti of Samudragupta
- l. Mathura Inscription During the Reign of Chandragupta II, GE 61
- m. Poona Plates of Prabhavtigupta
- n. Indore Plates of Pravarasena II, 23rd Regnal Year
- o. Aihole Inscription of Pulakesin II

Unit 5 Method of Inscription Decipherment:
Practical Training of Estampage Technique

2 hrs

Recommended Readings

Allchin, F.R. and K.R. Norman 1985. Guide to the Ashokan Inscriptions, South Asian Studies, I: 49-50.

Bhandarkar, D.R. 1935-36. A List of the Inscriptions of Northern India in Brahmi and its Derivative Scripts, from about 200 B.C. Appendix to Epigraphia Indica vols. 19-23.

Bhandarkar, D.R. 1981. Inscriptions of the Early Gupta Kings (Bahadurchand Chhabra and Govind Swamirao Gai eds.). Corpus Inscriptionum Indicarum vol. III. New Delhi: Archaeological Survey of India.

Bühler, George 1892. A New Variety of the Southern Maurya Alphabet, Winer Zeitschrift für die Kunde des Morgen Landes (Vienna Oriental Journal), vol. 6: 148-156.

Bühler, George 1898. On the Origin of Indian Brahma Alphabet. Strassburg: Karl J. Trubner.

Bühler, George 1959. Indian Palaeography. Calcutta: Indian Studies.

Dani, Ahmad Hasan 1963. Indian Palaeography, Oxford: Clarendon Press.

Epigraphia Indica 1892-1940. Vol. 1- XXV, Archaeological Survey of India.

Hultzch, D. 1969 (Reprint). Corpus Inscriptionum Indiacarum. Vol.I. Varanasi: Indological Book House.

Gokhale, S. Purabhilekavidya. Mumbai: Sahitya Sanskruti Mandal.

Goyal, S.R. 2005. Ancient Indian Inscriptions. Jodhpur: Kusumanjali Book World.

Khare, M.D. 1967. Discovery of a Vishnu Temple near the Heiodorus Pillar, Besnagar, District Vidisha (M.P.), Lalit Kala (13): 21-27.

Lüders, H. 1912. A List of Brahmi Inscriptions from the Earliest Times to About A.D. 400 with the Exception of those of Asoka. Appendix to Epigraphia Indica Vol. X.

- Mangalam, S.J. 1990. Kharoshti Script. Delhi: Eastern Book Linkers.
- Mehendale, M.A. 1948. Historical Grammar of Inscriptional Prakrits. Poona: Deccan College Post Graduate and Research Institute.
- Mehendale, M.A. 1948. Asokan Inscriptions in India (Linguistic Study together with Exhaustive Bibliography). Bombay: University of Bombay.
- Mirashi, V.V. 1981. The History and Inscriptions of the Satavahanas and the Western Kshatrapas. Bombay: Maharashtra State Board of Literature and Culture.
- Pandey, R. 1957. Indian Palaeography. Delhi: Motilal Banarasidas.
- Raghunath, K. 1998. Ikshvakus of Vijaya Puri: Study of the Nagarjunakonda Inscriptions. Delhi: Eastern Book Linkers.
- Ramesh, K.V. 1984. Indian Epigraphy. Delhi: Sundeep Prakashan.
- Rea, Alexander 1997 (Reprint). South Indian Buddhist Antiquities. Archaeological Survey of India New Imperial Series Vol. XV. New Delhi: Director General, Archaeological Survey of India.
- Salomon, Richard 1998. Indian Epigraphy. New delhi: Munshiram Manoharlal Publishers Pvt. Ltd.
- Shastri, A.M. 1996-97. Some Observations on the Origin and Early History of the Vikrama Era, Prachya Pratibha, vol. XVIII: 1-51.
- Shastri, A.M. 1966. The Saka Era, Panchal, vol. 9: 109-132.
- Sircar, D.C. 1965. Indian Epigraphy. Delhi: Motilal Banarasidas.
- Sircar, D.C. 1986 (3rd edition). Select Inscriptions. Vol. I. Delhi: Asian Humanities Press.
- Srinivasan, P.R. and S. Sankaranarayanan 1979. Inscriptions of the Ikshvaku Period. Hyderabad: Andhra Pradesh Government.
- Woolner, Alfred C. 1924. Asoka Text and Glossary (parts I and II). Lahore: The University of the Panjab, Lahore.

Arc 304 : ARCHAEOLOGY AND LITERATURE

Course Objectives

The objective of this course is to compare the historical and archaeological sources for the early history of India.

Course outcomes:

Students develop an appreciation for the contrasting methods of history and archaeology and their contribution to a more holistic view of the past.

Unit 1	6 hrs
a. Earliest Literary Sources and Archaeological Records	
b. Early writing in West Asia	
c. Early writing in India and China	
Unit 2	10 hrs
a. Importance of archaeological evidence	
b. Archaeological Evidence in India	
c. Limitations of Archaeological Evidence	
d. Importance of literary sources in India	
e. Limitations of Literary Sources	
Unit 3	10 hrs
a. Early Vedic texts and Aryans: problems of corroboration	
b. Vedic texts and Harappans: theories and problems	
c. Buddhist, Jain and the Later Vedic Texts (1200-600 B.C.)	
d. PGW, Iron Age and Megalithic cultures of the Deccan and South India	
Unit 4	10 hrs
a. The NBP and the Early Historical texts (600-200 B.C.)	
b. Trade and Urbanization	
c. Explorations and Excavations – NBP sites	
d. Bent-bar and the PMC	
e. Inscriptional records- Ashokan inscriptions	
f. Terracotta art and structural evidence: sculptures and stupas	
Unit 5	4 hrs
a. India known from foreign sources	
b. Megasthenes and other ancient travel accounts	

- a. The Great Epics: Mahabharata and Ramayan
- b. The problem of dating the epics
- c. Archaeology of the epic sites – exploration and excavations
- d. Material culture of the epics and archaeological evidence
- e. Problem areas: Rama Setu and Archaeology of Dwaraka

Recommended Readings

Allchin, F. R. 1995. The Archaeology of Early Historic South Asia and Emergence of Cities and States. Cambridge University Press, Cambridge.

Andren, Anders 1998. Between Artifacts and Texts. New York: Plenum press.

Bhattacharyi, Sukumari 1975. Literature in the Vedic Age (2 Vols). K.P. Bagehi and Co., Calcutta

Dymond, D. P. 1974. Archaeology and History: A Plea for Reconciliation. London: Thomas and Hudson

Erodsy, George 1988. Urbanisation in Early Historical India. Oxford: BAR.

Dhavalikar, M.K. 1999. Historical Archaeology of India. New Delhi: Books & Books.

Kosambi, D.D. 1985. An Introduction to the Study of Indian History. (reprint). Mumbai: Popular Prakashan.

Kunhau Raja 196.2 Survey of Sanskrit Literature. Mumbai: Bharatiya Vidya Bhavan.

Lad, Gauri P. 1981. Mahabharata and Archaeological Evidence. Pune: Deccan College.

Sharma, R. S. 1996. The State and Vasna formation in the Mid- Ganga Plains. New Delhi: Manohar Publishers.

Roy, T. N. 1983. The Ganges Civilization : A Critical Study of PGW & NBPW Periods of the Ganga Plains of India. New Delhi: Ramanada Vidya Bhavan.

Thapar, Romila 1990. From Lineage to State. Delhi: Oxford University Press.

Tripathi, Vibha 1976. The Painted Gray ware: An Iron Age Culture of North India. Delhi: Concept Publishing House.

Tripathi, Vibha 2001. Age of Iron in South Asia Legacy & Tradition. New Delhi: Aryan Books International.

ARC 305 : INTRODUCTION TO WORLD PREHISTORY

Course Objectives

The objective of this course is to provide an overview of the major developments in Prehistory in the different parts of the world

Course outcomes

Students gain a global perspective on Prehistoric studies and can better appreciate the role of India in the global context.

Unit 1 Development of World Prehistory	6 hrs
Oldowan: 2.5-1.5 million years, in Africa	
a. Hominins contemporary with the Oldowan	
b. Environments of East and South Africa between 2.5-1.5 million	
c. Oldowan technology	
d. Important Oldowan sites	
Unit 2 Earliest stone tools outside Africa	6 hrs
a. Dmanissi	
b. European Mode 1	
c. Chinese Mode 1	
d. Indian LFA	
e. Indonesian Homo erectus	
f. Implication of Flores hominins	
Unit 3 Africa	6 hrs
a. The Acheulian	
b. The Middle Stone Age	
c. The Later Stone Age	
Unit 4 Europe	6 hrs
a. The Acheulian	
b. Lower Palaeolithic Microlithic Tradition (LPMT)	
c. Middle Palaeolithic	
d. Upper Palaeolithic	
Unit 5 China	4 hrs
a. The Acheulian	
b. The Middle Palaeolithic	
c. Upper Palaeolithic and Microblade assemblages and Earliest Pottery	

Unit 6: Arabian Peninsula	4 hrs
a. The Acheulian	
b. The Middle Palaeolithic	
c. The Late Palaeolithic	
d. Holocene cultures	
Unit 7 Spread of humans to Australia, North and South America	4 hrs
Unit 8 Recent theories and debates on human origins, dispersals and behavior	3 hrs
Unit 9 Origin and Spread of Modern Humans	4 hrs
a. Early evidence in Africa	
b. Early Modern Humans in the Middle East	
c. Archaic humans	
d. Explaining the evidence: a complex story	
e. Final replacement with admixture	
Unit 10 Indian Palaeolithic in the Global context	2 hrs

Recommended Readings

Books

Akazawa T., K. Aoki, and O. Bar Yosef (Eds.) 1998. Neanderthals and Modern Humans in Western Asia. New York: Plenum Press.

Barham, Lawrence and Mitchell, Peter Barham 2008. The First Africans. Cambridge. Cambridge University Press.

Bellwood, P. 2007. Prehistory of the Indo-Malaysian Archipelago, Revised edition. Canberra: ANU Press.

Burdukiewicz, J. M., A. Ronen, and International Union of Prehistoric and Protohistoric Sciences. 2003. Lower Palaeolithic small tools in Europe and the Levant. BAR international series ;. Oxford: Archaeopress.

Chazan, M. 2008. World Prehistory and Archaeology: Pathways through Time: Addison-Wesley

Debénath, A., and H. L. Dibble. 1994. Handbook of Paleolithic typology - Vol. 1 : Lower and middle paleolithic of Europe. Philadelphia: The University Museum.

Delson, Eric, Ian Tattersal, J. A. Van Couvering, and A. Brooks. 2000. Encyclopedia of Human Evolution and Prehistory. New York and London: Garland Publishing

Dennell, R. W. 2009. Palaeolithic Settlement of Asia. Cambridge: Cambridge University Press.

Gamble, C., and C. Gamble. 1999. *The Palaeolithic societies of Europe*. Cambridge world archaeology. Cambridge, U.K. ; New York: Cambridge University Press.

Gamble, Clive 1986 *The palaeolithic settlement of Europe*. Cambridge:Cambridge world archaeology. Cambridge University Press.

Meltzer, D. J. 2009. *First peoples in a new world: colonizing ice age America* Berkely and Los Angles: University of California Press.

Pearsall, Deborah M. 2007. *Encyclopedia of Archaeology*. New York: Academic Press.

Schick K. D. and N. Toth (eds), 2006. *The Oldowan: Case Studies into the earliest Stone Age*. Gosport: Stone Age Institute.

Sharon, G. 2007. *Acheulian Large Flake Industries:Technology, Chronology, and Significance*. BAR international series. Oxford: BAR.

Research Papers

Bar Yosef, O. 1998. *The Chronology of the Middle Palaeolithic of the Levant, in Neanderthals and Modern Humans in Western Asia*. Edited by T. Akazawa, K. Aoki, and O. Bar Yosef, pp. 39-56. New York: Plenum Press.

Bar-Yosef, O. 2002. *The Upper Paleolithic Revolution*. *Annual Review of Anthropology* 31:363-393.

Bar-Yosef, O. and A. Belfer-Cohen 2013. *Following Pleistocene road signs of human dispersals across Eurasia*, *Quaternary International* doi:10.1016/j.quaint.2011.07.043

Bar-Yosef, O., and L. Meignen. 2001. *The chronology of the levantine Midde Palaeolithic period in Retrospect*. *Bulletin et Mémoire de la Societee d'Anthropologie de Paris*, 2, série 13:269-289.

Bar-Yosef, O., and S. L. Kuhn. 1999. *The Big Deal about Blades: Laminar Technologies and Human Evolution*. *American Anthropologist* 101:322-338.

Braun, D. R., J. C. Tactikos, J. V. Ferraro, S. L. Arnow, and J. W. K. Harris. 2008b. *Oldowan reduction sequences: methodological considerations*. *Journal of Archaeological Science* 35:2153-2163.

Braun, D. R., T. W. Plummer, P. W. Ditchfield, J. V. Ferraro, D. N. Maina, L. C. Bishop, and R. Potts. 2008a. *Oldowan behavior and raw material transport: perspectives from the Kanjera Formation*. *Journal of Archaeological Science* 35 2329-2345.

Bridgland, D. R., P. Antoine, N. Limondin-Lozouet, J. I. Santisteban, R. Westaway, and M. J.

White. 2006 *The Palaeolithic occupation of Europe as revealed by evidence from the rivers: data from IGCP 449*. *Journal of Quaternary Science* 21:437-455.

Diez-Martin, F. 2006. *After the African Oldowan: The Earliest Technologies of Europe, in The Oldowan: Case Studies inot the Earliest Stone Age*. Edited by N. Toth and K. Schick, pp. 129-151. Gosport: Stone Age Institute.

- Dixon, J. E. 2001. Human colonization of the Americas: timing, technology and process. *Quaternary Science Reviews* 20:277-299.
- Goren-Inbar, N. and Sharon, G. 2006. Invisible handaxes and visible Acheulian biface technology at Gesher Benot Ya'aqov, Israel, in *Axe Age: Acheulian Tool-making from Quarry to Discard* edited by N. Goren-Inbar and G. Sharon. London: Equinox: 111-135.
- Goren-Inbar, N., Alpers, N., Kislev, M.E., Simchoni, O., Melamed, Y., Ben-Nun, A., Werker and E., 2004. Evidence of hominin control of fire at Gesher Benot Ya'aqov, Israel. *Science*, 304:725-727.
- Goren-Inbar, N., Feibel, C.S., Verosub, K.L., Melamed, Y., Kislev, M.E., Tchernov, E. and Saragusti, I., 2000. Pleistocene milestones on the Out-of-Africa corridor at Gesher Benot Ya'aqov, Israel. *Science* 289:944-974.
- Goren-Inbar, N., Grosman, L. and Sharon, G. 2011. The record, technology and significance of the Acheulian giant cores of Gesher Benot Ya'aqov, Israel. *Journal of Archaeological Science*, 38:1901-1917.
- Goren-Inbar, N., Lister, A., Werker, E. and Chech, M. 1994. A butchered elephant skull and associated artifacts from the Acheulian site of Gesher Benot Ya'aqov, Israel. *Paléorient* 20(1): 99-112.
- Goren-Inbar, N., Werker, E. and Feibel, C.S. 2002. *The Acheulian Site of Gesher Benot Ya'aqov: The Wood Assemblage*. Oxford: Oxbow Books.
- Goren-Inbar, N. 2011. Culture and cognition in the Acheulian industry – a case study from Gesher Benot Ya'aqov. *Philosophical Transactions of the Royal Society of London Series B*, 366:1038-1049.
- Meignen, L. 1995. Levallois Lithic Production Systemes in the Middle Paleolithic of the Near East: the case of the Unidirectional Method, in *The Definition and Interpretation of Levallois Technology*. Edited by H. L. Dibble and O. Bar Yosef, pp. 361-379. Madison: Prehistory Press.
- Mishra, S. 2008. The Lower Palaeolithic: A Review of Recent Findings. *Man and Environment* 33:14-29.
- Mishra, S., C. Gaillard, S. G. Deo, M. Singh, R. Abbas, and N. Agrawal. 2010. Large Flake Acheulian in India: Implications for understanding lower Pleistocene human dispersals. *Quaternary International*.
2010. India and Java: Contrasting Records, Intimate Connections. *Quaternary International*.
- Mishra, S., M. J. White, P. Beaumont, P. Antoine, D. R. Bridgland, N. Limondin-Lozouet, J. I. Santisteban, D. C. Schreve, A. D. Shaw, F. F. Wenban-Smith, R. W. C. Westaway, and T.

- S. White. 2007. Fluvial deposits as an archive of early human activity. *Quaternary Science Reviews* 26:2996-3016.
- Norton, Christopher J. and D. R. Braun. 2010. *Asian Paleanthropology: From Africa to China and Beyond*. Springer
- Sahnouni, M. 2006. The North African Early Stone Age and the sites at Ain Hanech, Algeria, in *The Oldowan: Case Studies into the earliest Stone Age*. Edited by K. D. Schick and N. Toth, pp. 77-112. Gosport: Stone Age Institute.
- Schick, K. D., and N. Toth. 2006. An Overview of the Oldowan Industrial Complex: the sites and the nature of their evidence, in *The Oldowan: Case Studies into the earliest Stone Age*. Edited by N. Toth and K. D. Schick, pp. 4-42: Stone Age Institute.
- Semaw, S. 2006. The oldest stone artifacts from Gona (2.6-2.5 Ma), Afar, Ethiopia: Implications for Understanding the earliest stages of Stone Knapping, in *The Oldowan: Case studies into the Earliest Stone Age*. Edited by K. D. Schick and N. Toth, pp. 43-75. Gosport: Stone Age Institute.
- Semaw, S., M. J. Rogers, and D. Stout. 2009. The Oldowan-Acheulian Transition: Is there a “Developed Oldowan” Artifact Tradition?, in *Sourcebook of Paleolithic Transitions*. Edited by
- Torre, I. d. I. Technological strategies in the Lower Pleistocene at Peninj (West of Lake Natron, Tanzania), in *Approaches to the Earliest Stone Age*. Edited by K. D. Schick and N. Toth. Bloomington, Indiana.
- Torre, I. D. L., and R. Mora. 2005. Technological Strategies in the Lower Pleistocene at Olduvai Beds I and II. Liege: ERAUL 112.
- Torre, I. d. I., R. Mora, and J. Martinez-Moreno. 2008. The early Acheulean in Peninj (Lake Natron, Tanzania). *Journal of Anthropological Archaeology* 27:244-264.
- White, and T. S. White. 2007. The British Pleistocene fluvial archive: East Midlands drainage evolution and human occupation in the context of the British and NW European record. *Quaternary Science Reviews* 26:2724-2737.
- White, M., and N. Ashton. 2003. Lower Palaeolithic Core Technology and the Origins of the Levallois Method in North-Western Europe. *Current Anthropology* 44:598-609.

Arc 306 : ENVIRONMENTAL ARCHAEOLOGY (BIOARCHAEOLOGY)

Course Objectives

The objective of this course is to provide insights in the human interaction with palaeo-environment and also to introduce with the various approaches of understanding plant-animal domestication.

Course Outcome

The student gets acquainted with the theoretical approaches as well as the methodology of carrying out palaeo-ecological studies.

Unit 1	a. Environmental Archaeology: Definition and scope b. Changing nature of the discipline c. Branches related to Environmental Archaeology	4 hrs
Unit 2	a. Ecology: Definition; Environmental System b. Positive and negative feedback c. Intra and inter-species relationships d. Basic principles of population biology e. Plant and animal responses to changing environment	5 hrs
Unit 3	a. Theories of Plant domestication and Origin of Agriculture b. Early agriculture Old and New World c. Impact of agriculture on development of civilization d. Phytolith and coprolite analysis	10 hrs
Unit 4	a. Taxonomy and classification of the animal kingdom, Evolution of life b. Fossils and folklore, Process of fossilisation, Economic Palaeontology c. Palaeontology: its history and development through time. d. Pleistocene vertebrate fauna of India and N/Q boundary e. Taphonomy and Palaeoecology: new evidence and interpretations.	10 hrs
Unit 5	a. Archaeozoology: definition and scope b. Archaeozoological techniques c. Quantification- NISP, MNI, weight, metrical studies d. Ageing and sexing methods e. Animal domestication its theories, origins and aspects f. Holocene faunal record from archaeological sites in India	10 hrs

- Unit 6 a. Dental and Bone Histology, Palaeobiochemistry, 6 hrs
 b. Archaeomalacology and Archaeoichthyology
 c. Molecular Palaeontology and Archaeology

Recommended Readings

Agrawal, D.P. and M. G. Yadav. 1995. Dating the Human Past, Pune: ISPQS Monograph Series1.

Andrews, Peter. 1990. Owls, Caves and Fossils. London: British Museum of Natural History.

Badam, G.L. 1979. Pleistocene Fauna of India, Pune: Deccan College.

Badam, G.L. and Vijay Sathe. 1995. Palaeontological Research in India: Retrospect and Prospect. Memoir 32, Geological Society of India, pp. 473 495.

Behrensmeyer, A.K. and A. Hill (eds.) 1980. Fossils in the Making: Taphonomy and Palaeoecology, Chicago: University of Chicago Press.

Bhattacharyya, A., Lamarche, V.C. and F.W. Telewski. 1988. Dendrochronological Reconnaissance of the Conifers of Northwest India. Tree Ring Bulletin, 48:21 30.

Binford, L.R. 1981. Bones: Ancient Men and Modern Myths. New York: Academic Press.

Birks, H.J.B. and Hilary, H. Birks. 1980. Quaternary Palaeoecology, London: Edward Arnold.

Bokonyi, S. 1974. History of Domestic Animals in Central and Eastern Europe, Budapest: Academiai Kiado.

Brothwell, D. and E. Higgs (eds.) 1969. Science in Archaeology, 2nd Edition. London: Thames and Hudson.

Brothwell, D.R. and A.M. Pollard. 2001. Handbook of Archaeological Science, New York: John Wiley and Sons Ltd.

Bruce Smith 2000. Origins of Agriculture, New York: Plenum publications.

Bryant, V. Jr. and G.W. Dean 1975. The Coprolites of Man, American Antiquity, 32(1): 100 109.

Chattopadhyaya, U.C. 2002. Research in Archaeozoology of the Holocene Period (Including the Harappan Tradition in India and Pakistan), In Indian Archaeology in Retrospect, Vol.III: Archaeology and Interactive Disciplines (S. Settar and Ravi Korisetar Eds.), pp. 365 422. New Delhi: ICHR, Manohar Publishers.

Child, A.M. and A.M. Pollard. 1992. A Review of the Applications of Immunochemistry to Archaeological Bone, Journal of Archaeological Science 19: 39 47

Clason, A.T. 1975. Archaeozoological Studies, Amsterdam: Elsevier.

Classen, C. 1998. Shells, Cambridge University Press: Cambridge

- Clutton Brock, J. 1981. *Domesticated Animals from Early Times*, London: British Museum Natural History.
- Clutton_Brock, J. 1989. *The Walking Larder: Patterns of Domestication, Pastoralism and Predation*. London: Unwin Hyman.
- Cohen, Mark Nathan. 1978. *Food Crisis in Prehistory: Overpopulation and Origins of Agriculture*, New Haven : Yale University Press
- Colbert, E.H. 1969. *Evolution of the Vertebrates*. 2nd Edition. New York: John Wiley & Sons.
- Convering, J.A. van (Ed.) 1997. *The Pleistocene Boundary and the Beginning of the Quaternary*. Cambridge: Cambridge University Press.
- Dennel, et al. 2004. *Early Hominin Landscapes in Northern Pakistan: Investigations in the Pabbi Hills*. British Archaeological Reports International Series 1265, 1-454.
- Dina F. Dinacauze. 2000. *Environmental Archaeology: Principles and Practice*, Cambridge: Cambridge University Press.
- Deotare, B.C., Kajale, M.D., Rajaguru, S.N., Kusumgar, S., Jull, A.J.T. and J.D. Donahue 2004 *Palaeoenvironmental History of Bap-Malar and Kanod playas of Western Rajasthan, Thar Desert*. Proceedings of the Indian Academy of Sciences-Earth and Planetary Sciences, 113 (3):403-425.
- Deotare, B.C. 2006 *Late Holocene climatic change : Archaeological evidence from Purna basin, Maharashtra*. Journal of the Geological Society of India, 68: 517-526.
- Deotare, B.C., M.D. Kajale, S. Mishra, V.D. Gogte and S. N. Rajaguru 2001 DST project (ESS/CA/A3-08/92) completion report on Lacustrine Record, In *Quaternary Stratigraphy and Palaeoenvironmental History of the Thar Desert- Project completion report* (A.K.Singhvi, S.K. Tandon and R.P. Dhir PI) PRL, Ahmedabad, pp. 83-136.
- Deotare, B.C., M.D. Kajale, A.A. Kshirsagar and S.N. Rajaguru. 1998. *Geoarchaeological and Palaeoenvironmental Studies around Bap Malar playa, Disrict Jodhpur, Rajasthan*. Current Science 75 (3):316 320.
- Elizabeth, J. Reitz and E.S. Wing. 1999. *Zooarcheology*, Cambridge: Cambridge University Press
- Fernandez-Jalvo, Y. Begona Sanchez-Chillon and Luis Alcalá (Eds.) 2002. *Proceedings of the 4th International Meeting on Bone Diagenesis*. Archaeometry 44 (3), 315-495.
- Grupe, G. and A.N. Garland (Eds.) 1993. *Histology of Ancient Human Bone: Methods and Diagnosis*. Springer-Verlag.
- Harris, D.R. and Gordon Hillmann. 1989. *Foraging and Farming Evolution of Plant Exploitation*. London: Unwin and Hyman.
- Herrmann, B. and S. Hummel. 1994. *Ancient DNA*. New York: Springer Verlag.
- Hillson, Simon. 1986. *Teeth (Cambridge Mammals in Archaeology)*. London: Cambridge University Press.

- Horowitz, A. 1992. *Palynology of Arid Lands*, Amsterdam: Elsevier.
- Huston, M.A. 1991. *Biological Diversity*. Cambridge: Cambridge University Press.
- Grayson, D.K. 1984. *Quantitative Zooarchaeology*. Orlando: Academic Press.
- Joglekar, P.P. 1991. *A Biometric Approach to Faunal Remains of Western India with Special Reference to Kaothe and Walki*. Ph.D. Thesis. Pune: University of Pune.
- Kajale, M.D. 1991. *Current Status of Indian Palaeoethnobotany: Introduced and Indigenous Food Plants with a Discussion of the Historical Development of Indian Agriculture and Agricultural System in general*, In *New Light on Early Farming* (Jane Renfrew Ed.) Edinburgh: University Press, pp. 155 190.
- Kajale, M.D., Mulholland, S. and G. Rapp Jr. 1995. *Application of Phytolith Analysis: A Potential Tool for Quaternary Environmental and Archaeological Investigations in the Indian Sub continent*. *Memoirs of the Geological Society of India* No. 32, pp 530 544.
- Kermack, D.M. and K.A. Kermack. 1984. *The Evolution of Mammalian Characters*. London: Croom Helm.
- Kshirsagar, A.A. 1993. *The Role of Fluorine in Chronometric Dating of Indian Stone Age Cultures, Man and Environment* 18 (2):23 32.
- Leiggi, Patrick and Peter May 1994. *Vertebrate Palaeontological Techniques, Volume 1*. New York: Cambridge University Press.
- Marks, Jonathan. 1994. *Human Biodiversity: Genes, Race & History*, NewYork: Aldine de Gruyter
- Martin, Ronald E. 1999. *Taphonomy: A Process Approach*. Cambridge: Cambridge University Press.
- Mayor, Adrienne 2000. *The First Fossil Hunters: Palaeontology in Greek and Roman Times*.
- Meadow, R.H. 1981. *Early Animal Domestication in South Asia: a First Report on the Faunal Remains from Mehrgarh, Pakistan*. In *South Asian Archaeology 1979* (H. Hartel Ed.) pp.143 79. Berlin: Dietrich Reimer Verlag.
- Meadow, R.H. and Ajita K. Patel. 1997. *A Comment on 'Horse Remains from Surkotada' by Sandor Bokonyi*, *South Asian Studies* 13:308 15
- Meadow, R.H. and Ajita K. Patel. 2002. *From Mehrgarh to Harappa and Dholavira: Prehistoric Pastoralism in North Western South Asia Through the Harappan period* In *Indian Archaeology in Retrospect, Vo.II, Protohistory, Archaeology of the Harappan Civilization* (S. Settar and Ravi Korisetar Eds.), pp. 391 408. New Delhi: ICHR, Manohar Publishers.
- Meighan, C. 1969. *Molluscs as Food Remains in Archaeological Sites*, In *Science in Archaeology* (Brothwell, D. and Higgs E. Eds.), London: Thames and Hudson. Pp.415 422

- Metcalf, C.R. and L. Chalk. 1979. *Anatomy of the Dicotyledons*, Oxford: Clarendon Press.
- Misra, V.N. and Peter Bellwood (eds.) 1985. *Recent Advances in Indo Pacific Prehistory*. New Delhi: Oxford IBH.
- Moore P.D., J.A. Webb and M.E. Collinson. 1991. *Pollen Analysis*. Oxford: Blackwell Scientific Publications.
- Nanda, A.C. 2002. Upper Siwalik Mammalian Fauna of India and Associated Events. *Journal of Asian Earth Sciences* 21, 47-58.
- Naik, Satish S. and B. C. Deotare 2008-09. (2010) Value of Non-pollen Palynomorphs as Palaeo-environmental indicators from Archaeological site of Chaul, Maharashtra. *Bulletin of Deccan College Post-Graduate and Research Institute*, 68-69:125-136.
- Odum, E.P. 1997. *Ecology*. Sunderland: Sinauer.
- Pearsall, D. and D. Piperno 1993. *Current Research in Phytolith Analysis Applications in Archaeology and Palaeoecology*. Philadelphia MASCA: University of Pennsylvania.
- Reed, C. 1977. *Origins of Agriculture*. Hague: Mouton Publishers.
- Prothero, Donald R. and Scott E. Foss (Eds.) 2007. *The Evolution of Artiodactyls*. John Hopkins University Press.
- Renfrew, J. (ed.) 1991. *New Light on Early Farming: Recent Developments in Palaeoethnobotany*. Edinburgh: Edinburgh University Press.
- Rogers, Raymond; David A. Eberth and R. Anthony 2007. *Bonebeds: Genesis, analysis and palaeobiological significance*.
- Romer, A.S. 1966. *Vertebrate Palaeontology*. 3rd Edition. Chicago: University of Chicago Press.
- Romer, H., PH. Dear, J. Krause, M.Meyer, N. Rohland, T. Schoneberg, H. Spriggs, M. Stiller and M. Hofreiter 2007. Multiplex amplification of ancient DNA. *Nature Protocols* 1 (2), 720-728.
- Rose, Kenneth David 2006. *The Beginning of the Age of Mammals*.
- Sathe, Vijay 2000 *Tooth Enamel Ultrastructure of cattle from Quaternary period of India*. *Environmental Archaeology* 5, 133-141.
- Sathe, Vijay 2005. Functional interpretations of tooth enamel ultrastructure in large herbivores. *Archives of the Comparative Biology of Tooth Enamel* 9, 45-53.
- Sathe, Vijay 2007 *Environmental Archives: Rock Art and the Pleistocene Fauna*, in Sharma, R.K. (ed.) *History, Archaeology & Culture of Narmada valley*. New Delhi: Sharada Publishing House. pp. 19-29.
- Sathe, Vijay 2009. Presidential Address (Ancient Science and Technology Session) in the Proceedings of the 8th Conference of Brihanmaharashtra Prachya Vidya Parishad, Gogte Joglekar College, Ratnagiri, 27-29 December 2009, pp. 74-86 (in Marathi)

Shipman, Pat 1981. *Life History of a Fossil: An Introduction to Taphonomy and Palaeoecology*. Harvard: Harvard University Press.

Simpson, G.G. 1945. *The Principles of Classification and A Classification of Mammals*, *Ecology* 36: 327-337.

Steward, Julian H. 1972 *Theory of Culture Change: The Methodology of Multilinear Evolution*, Illinois: University of Illinois Press

Teaford, Mark F., Moya Meredith Smith, Mark W.J. Ferguson (Eds.) 2007. *Development, Function and Evolution of Teeth*. Cambridge: Cambridge University Press.

Thomas, P.K. 1977. *Archaeozoological Aspects of the Prehistoric Culture of Western India*. Ph. D. Thesis. Pune: University of Pune.

Thomas, P.K. 1989. Utilization of Domestic Animals in Pre and Protohistoric India, in *The Walking Larder: Patterns of Domestication, Pastoralism and Predation* (J. Clutton Brock Ed.), pp. 108-112. London: Unwin Hyman.

Thomas, P.K. and P.P. Joglekar. 1994. *Holocene Faunal Studies in India, Man and Environment* Vol. 19 (1&2):179-204.

Thomas, P.K. and P.P. Joglekar. 1995. *Faunal Studies in Archaeology*, in *Quaternary Environments and Geoarchaeology of India* (Statira Wadia, Ravi Korisettar and Vishwas S. Kale Eds.), *Memoir* 32:496-514. Bangalore: Geological Society of India.

Thomas, P.K. 2000. *Animal Subsistence in the Chalcolithic Culture of Western India* (with special reference to Balathal) *Indo Pacific Prehistory Association Bulletin* 19 Vol.3: 147-151 (Melaka Papers), Australian National University.

Thomas, P.K. 2002. *Investigations into the Archaeofauna of Harappan sites in Western India*, In *Indian Archaeology in Retrospect, Vo.II, Protohistory, Archaeology of the Harappan Civilization* (S. Settar and Ravi Korisettar Eds.), pp. 409-420. New Delhi: ICHR, Manohar Publishers.

Thomas, K.D. 1993. *Molecular Biology and Archaeology: a Prospectus for Inter disciplinary Research*, *World Archaeology* 25(1): 1-17.

Wasselkov, G. 1987. *Shellfish Gathering and Shell Midden Archaeology*, In *Advances in Archaeological Method and Theory* Vol. XI (M.B. Schiffer, Ed.), San Diego: Academic Press pp. 93-210.

Wesley Cowan C. and Patty Jo Watson. 1992. *The Origins of Agriculture: An International Perspective*, Washington: Smithsonian Institutional press.

Zeuner, F.E. 1963. *A History of Domesticated Animals*. London: Hutchinson.

Zittel, von K.A. 1925. *Text Book of Palaeontology*, 3 vols. London: Macmillan & Co.

Arc 307: BIOLOGICAL ANTHROPOLOGY

Course Objectives

The students are introduced to the concepts of evolution. The fossil record of human evolution is explained and some basic methods used for description of human skeletal remains are introduced.

Course outcomes

The major findings related to human evolution are learned by students in this course

Unit 1 Evolution: Historical perspectives and mechanism of evolution 7 hrs

- a. Summary of evolutionary ideas and postulates from the Greek times to Middle Ages. Theory of eternity of present condition, special creation, catastrophism and organic evolution. Contributions of Cuvier, Empedocles and Aristotle.
- b. The development of evolutionary ideas in the Middle Ages. Contributions of Linnaeus, Buffon, E.Darwin, Lamark, De Vries and C.Darwin.
- c. Variation, natural selection, artificial selection and sexual selection. Theories of speciation. Cladogenesis and anagenesis.
- d. Mendelian theory of inheritance. Mendelian inheritance in man. Genetic basis for human evolution.
- e. Punctuated equilibrium. Synthetic theory
- f. Concept of adaptation, evolution

Unit 2 Order Primates 8 hrs

- a. Place of order Primates in Animal Kingdom.
- b. Characteristic features of order Primate.
- c. Classification of living Primates (briefly).
- d. Prosimian pattern.
- e. New and Old World Anthropoids.
- f. Hylobatid and Pongid pattern.
- g. Gibbon, Orang-utan, Chimpanzee and Gorilla. Comparison of anatomical features of man and anthropoid apes.

Unit 3 Human Evolution through fossil record 10 hrs

- a. Background of human evolution: inter relationship between biological and cultural factors.
- b. Early ideas of human evolution. Piltdown man.
- c. Skeletal adaptations leading to erect posture. Dietary adaptations.

- d. Early monkeys and apes. Dryopithecus group.
- e. Australopithecines, Homo erectus, Homo sapiens neanderthalis, Homo sapiens sapiens.
- f. Genus Homo in the light of recent discoveries.
- g. Genetic basis for human evolution. Origin of modern Homo. Mitochondrial Eve.
- h. Spread of Anatomically Modern Homo sapiens (AMHS)

Unit 4 Archaeological Human remains and present diversities 10 hrs

- a. Human antiquity in the Indian sub-continent from the Mesolithic to the Medieval period.
- b. Processual model for biological adaptations in early agricultural populations.
- c. Palaeopathology and palaeodemography. Model for interpretation of physiological disruptions and stress indicators in palaeoepidemiological research.
- d. Concept of 'race'. 'Pure race' and racism. Theories regarding the formation of 'races'.
- e. Criteria for 'racial' classification and limitations of 'racial' discrimination in archaeological populations.
- f. Contemporary population diversities in South Asia

Unit 5 Practical 10 hrs

- a. Introduction to human skeleton. Identifying fragmentary bones. Side identification in bones.
- b. Age estimation and sex determination in skeletons.
- c. Measurements and morphological studies on human bones. Non-metric discrete traits.
- d. Dentition. Identification of dental elements. Morphometric studies on dentition. Dental pathology.
- e. Methods of cleaning and restoration in archaeological human skeletal collection. Reporting style.
- f. Treatment of human material in the field.

Recommended Books:

Bass W. M. 1971. Human Skeleton: A Laboratory and Field Manual of the Human skeleton. 2nd Ed. Columbia, Missouri: Missouri Archaeological Society.

Brothwell D.R. 1972. Digging up Bones. 2nd Edition. London: British Museum.

Buikstra J. E. and D.H. Ubelakar. 1994. Standards For Data Collection From Human Skeletal Remains. Arkansas: Arkansas Archaeological Survey Research Series, No.44.

- Clochon R.L. and J.G. Fleagle (Ed.). 2006. *The Human Evolution Source Book*. New Jersey: Pearson-Prentice hall.
- Cohen M. N. and G. J. Armelagos (Eds.). 1984. *Palaeopathology at the Origins of Agriculture*. Orlando: Academic Press.
- Eimerl S. and I. DeVore. 1974. *The Primates*. New York: Time-Life Books.
- Foley R. 1987. *Another Unique Species*. Essex: Longman Scientific and Technical.
- Hooton E.A. 1963. *Up From the Ape*. New York: MacMillan.
- Howells W. 1998. *Getting Here*. Chicago: Chicago University Press.
- Jones S. 1993. *Cambridge Encyclopaedia of Human Evolution*. Cambridge : Cambridge University Press.
- Jurmain R., H. Nelson and W. A. Turnbaugh. 1984. *Understanding Physical Anthropology and Archaeology*. 2nd Ed. St Paul, MN: West Publishing Co.
- Katzenberg M.A. and S.R. Sounders (Ed.). 2008. *Biological Anthropology of the Human Skeleton*. 2nd Edition. Hoboken, New Jersey: Wiley-Liss.
- Kennedy G.E. 1980. *Paleoanthropology*. New York: Thomas.
- Kennedy K.A.R. 2000. *God-Apes and Fossil Men- Paleoanthropology of South Asia*. Ann Arbor: University of Michigan Press.
- Klein R. G. 1999. *The Human Career: Human Biological and Cultural Origins*. 2nd Ed. Chicago: Chicago University Press.
- Iscan M. Y. and K. A. R. Kennedy (Eds.). 1989. *Reconstruction of Life From Skeleton*. New York: Alan R. Liss.
- Larsen C.S. 1997. *Bioarchaeology: Interpreting Behaviour from Human Skeleton*. United Kingdom: Cambridge University press.
- Lewin R. 1988. *In the Age of Mankind*. Washington D.C.: Smithsonian.
- Louise Scheuer and Sue Black OBE. 2004. *The Juvenile Skeleton*. Elsevier Academic Press: London
- Martin D. L. and M. P. Bumsted 1981. *Bio-cultural Adaptations: Comprehensive Approach to Skeletal Analysis*. Massachusetts: University of Massachusetts.
- Mays S. 1998. *The Archaeology of Human Bone*. New York: Routledge.
- Nelson H. and R. Jurmain. 1985. *Introduction to Physical Anthropology*. 3rd Ed. St Paul, MN: West Publishing Co.
- Ortner D. J. 1982. *How Humans Adapt: A Biological Odyssey*. Washington D.C.: Smithsonian.
- Petraglia, M. D. And B. Allchin (Eds.). (2007). *The Evolution and History of Human Populations in South Asia: Inter-disciplinary Studies in Archaeology, Biological Anthropology, Linguistics and Genetics*. Netherlands.: Springer

- Roberts C. and K. Manchester 1995. *The Archaeology Of Disease*. 2nd Edition. Ithaca, NY: Cornell University Press.
- Saunders S. R. and M. A. Katzenberg. 1992. *Skeletal Biology of Past peoples*. Research Methods. New York: Wiley-Liss.
- Scheuer L. and S. Black OBE. 2004. *The Juvenile Skeleton*. Elsevier Academic Press: London
- Seth P. K. and S. Seth. 1986. *The Primates*. New Delhi: Northern Book Centre.
- Singh I. P. and M. K. Bhasin. 1989. *Anthropometry: A Laboratory Manual on Biological Anthropology*. Delhi: Kamala-raj Enterprises.
- Stringer, C. And P. Andrews. 2012. *The Complete World of Human Evolution*. Thames and Hudson: New York.
- Ubelaker D. H. 1989. *Human Skeletal Remains: Excavation, Analysis and Interpretation*. 2nd Edition. Washington D.C.: Smithsonian.
- Walimbe, S.R. and A. Tavares. 1995. Evolving trends in skeletal biology in the Indian Sub-continent: a case study on the incipient agricultural populations of the Deccan Plateau, in *Quaternary Environments and Geoarchaeology of India: Essays in honour of Prof. S.N. Rajguru* (S. Wadia, R. Korisettar and V.S. Kale, Eds.), pp. 515-529. Bangalore: Geological Society of India, Bangalore.
- White T. 1991. *Human Osteology*. San Diego, Cal: Academic Press.
- Wolpoff M.H. 1980. *Paleoanthropology*. New York: A.A.Knopf.

Arc 308: ADVANCED ARCHAEOLOGICAL THEORY AND RESEARCH METHODOLOGY

Course objectives

The objective of this course is to introduce the major theories used in archaeology. Research methodology and report writing are also covered in this course.

Course outcomes

Students gain grounding in theoretical issues related to archaeology and research methodology.

Unit 1	a. Introduction to new trends in archaeological theory b. History of changes in archaeological theory c. New archaeology and beyond d. Meta-theory and archaeology today	3 hrs
Unit 2	a. Positivism and empiricism b. Schools of philosophy of science c. Theory of knowledge d. Relativism	6 hrs
Unit 3	a. Post-processual schools of theory b. Marxist archaeology c. Structuralism and hermeneutics d. Feminist archaeology e. Post-modernism	8 hrs
Unit 4	a. Archaeological theory and practice b. New archaeology in Indian context	8 hrs
Unit 5	a. Fundamentals of Logic b. Induction and Deduction c. Explanation and Analogical reasoning d. Hypothetico Deductive Method e. Fallacies	6 hrs
Unit 6	a. What is research? b. Seven Stages of research process c. Types of research design d. Virtues of a researcher	8 hrs
Unit 7	a. Structure of the report b. Style of writing what to do and what not to do c. Abstract and Summary d. Preparing Bibliography	6 hrs

- e. Visual Aids in presentations
- f. Clues for effective Presentation

Recommended Reading

- Binford, L.R. 1989. *Debating Archaeology*. New York Academic Press.
- Binford, L.R. 1983. *Working at Archaeology*. New York Academic Press.
- Cohen, M.R. and E. Nagel 1976. *An Introduction to Logic and Scientific Method*. Bombay Allied Publishers.
- Gellner, E. 1985. *Relativism and Social Sciences*. Cambridge Cambridge University Press.
- Goode, W.J. and P.K. Hatt 1952. *Methods in Social Research*. Tokyo McGraw Hill.
- Gupta, Anil 2006. *Empiricism and Experience*. Oxford Oxford University Press.
- Hodder, I. 1992. *Theory and Practice in Archaeology*. London Routledge.
- Hodder, I. 1995. *Interpreting Archaeology Finding Meaning in the Past*. New York Routledge.
- Johnson, M. 1999. *Archaeological Theory An Introduction*. Malden (Ma) Blackwell Publishers.
- Joglekar, P.P. 2014. *Research methodly for Archology Student Pune - Gayatri Sahmilya*.
- Jones, Andrew 2004. *Archaeological Theory and Scientific Practice*. Cambridge Cambridge Press.
- Kelley, J.H. and M.P. Hanen 1990. *Archaeology and the Methodology of Science*. Albuquerque University of New Mexico Press.
- Marczyk, Geoffrey, David DeMatteo and David Festinger 2005. *Essentials of Research Design and Methodology*. Hoboken, New Jersey John Wiley & Sons, Inc.,
- Paddayya, K. 1990. *New Archaeology and Aftermath View from Outside the Anglo American World*. Pune Ravish Publishers
- Paddayya, K. 1990. *Theoretical Perspectives in Indian Archaeology An Historical Review*, in P.J. Ucko (ed.) *Theory in Archaeology A World Perspective*, pp.110 149. London Routledge.
- Paddayya, K. 2002. *A Review of Theoretical Perspectives in Indian Archaeology*, in S. Settar and R. Korisettar (ed.) *Indian Archaeology in Retrospect, Vol. IV*, pp.117 157. New Delhi ICHR and Manohar.
- Preucel, R. (ed). 1991. *Processual and Postprocessual Archaeologies Multiple Ways of Knowing the Past*. Carbondale (Illinois) Southern Illinois University Press.
- Rosenau, P.M. 1992. *Post modernism and the Social Sciences*. Princeton Princeton University Press.
- Salmon, W.C. 1984. *Scientific Explanation and Causal Structures of the World*. Princeton Princeton University Press.
- Schiffer, M.B. 1987. *Formation Processes of the Archaeological Record*. Albuquerque University of New Mexico Press.
- Schiffer, M.B. 1995. *Behavioral Archaeology First Principles*. Salt Lake City University of Utah Press.
- Shanks, M. and C. Tilley. 1987. *Social Theory as Archaeology*. Cambridge Polity Press.

Arc 309: HISTORY OF INDIAN ARCHAEOLOGY

Course Objectives

The objectives of this course are to explore the development of Archaeology in India and the changing attitudes towards the past.

Course outcomes

Students gain an insight into the development of the discipline of archaeology in India and the factors which have influenced its growth.

Unit 1 15 hrs

- a. New historiography of science and its relevance to the history of Indian archaeology.
- b. Indigenous (Indian) perceptions of the study of the past.
- c. Early (pre 1784) European perceptions of India's past.
- d. Formative phase in the development of Indian archaeology (the Asiatic Society and the first half century): motives, perceptions and results.

Unit 2 15 hrs

- a. Major perspectives in the development of prehistoric archaeology.
- b. Major shifts in the development of protohistoric archaeology.
- c. Major developments in the growth of historical archaeology.
- d. Major shifts in the study of Ancient Indian art and architecture.
- e. Major trends in the use of numismatic and epigraphical sources for historical reconstruction.

Unit 3 5 hrs

Present structure of archaeology in India (Central and State Governments, universities and museums, foreign agencies.)

Unit 4 5 hrs

Post Orientalism.

Unit 5 5 hrs

Cultural Heritage Management.

Recommended Readings

Bhandarkar, D.R. 1921 Ancient Indian Numismatics. Carmichael Lectures. Calcutta: Calcutta University Press.

- Chakrabarti, D.K. 1988. *A History of Indian Archaeology: From the Beginning to 1947*. New Delhi: Munshiram Manoharlal.
- Chakrabarti, D.K. 1989. *Theoretical Perspectives in Indian Archaeology*. New Delhi: Munshiram Manoharlal.
- Chakrabarti, D.K. 1999. *India: An Archaeological History*. New Delhi: Oxford University Press.
- Chandra, P. 1983. *On the Study of Indian Art*. Cambridge (Mass): Harvard University Press.
- Cumming, J. (ed) 1939. *Revealing India's Past* London: The India Society.
- Cunningham, A. 1871. Introduction. in *Annual Reports of the Archaeological Survey of India*. No 1.
- Ghosh, A. 1953. Fifty Years of the Archaeological Survey of India. *Ancient India*: 9:29 52.
- Gupta, P.L. 1979. *Coins*. New Delhi: National Book Trust
- Inden, R. 1986. Orientalist Constructions of India. *Modern Asian Studies* 20 (3):401 446.
- Kejariwal, O.P. 1988. *The Asiatic Society of Bengal and the Discovery of India's Past 1884 1838*. New Delhi: Oxford University Press.
- Lahiri, N. 1997. John Marshall's appointment as Director General of the Archaeological Survey of India: A Survey of the papers pertaining to his appointment. *South Asian Studies* 13: 127 139.
- Lahiri, N. 1998. Coming to grips with the Indian past: John Marshall's early years as Lord Curzon's Director General of the Archaeological Survey of India Part I. *South Asian Studies* 14: 1 23.
- Lahiri, N. 2000. Coming to grips with India's past and her 'Living Present': John Marshall's early years (1902 6) Part II. *South Asian Studies* 16: 89 107.
- Linstrum, D. 1995. *The Scared Past: Lord Curzon and the Indian Monuments*. *South Asian Studies* 11: 1 17.
- Marshall, J. 1904. Introduction. *Archaeological Survey of India Reports*, nos. 1 3.
- Mitter, Partha. 1977. *Much Maligned Monsters: History of European Reactions to Indian Art*. Oxford: Clarendon Press.
- Paddayya, K. 1990. *The New Archaeology and its Aftermath: A View from Outside the Anglo American World*. Pune: Ravish Publishers.
- Paddayya, K. 1995. Theoretical Perspectives in Indian archaeology: an historical review, in P.J. Ucko (ed.) *Theory in Archeology A World Perspective*, pp.110 149. London: Routledge.

Paddayya, K. 2002. A review of theoretical perspective in Indian archaeology, in S. Settar and R. Korisettar (ed.) Indian Archaeology in Retrospect, Vol. IV, pp.117-157. New Delhi: ICHR and Manohar

Philipp, C.H. (ed.) 1961. Historians of India, Pakistan and Ceylon. London: Oxford University Press.

Ramesh, K.V. 1984. Indian Epigraphy. New Delhi: Sundeep Prakashan.

Roy, S. 1961. The Story of Indian Archaeology: 1884 to 1947. New Delhi: Archaeological Survey of India.

Roy, S. 1953. Indian Archaeology from Jones to Marshall. *Ancient India* 9:4 28.

Sankalia, H.D. 1962. Indian Archaeology Today. Heras Memorial Lectures. Bombay: Asia Publishing House.

Sankalia, H.D. 1975. New Archaeology and Its Application to India. D.N. Majumdar Memorial Lectures. Lucknow: Ethnological and Folk Culture Society.

Sharma, Y.D. 1953. Exploration of Historical Sites. *Ancient India* 9: 116-169.

Thapar, B.K. 1984. India. in Henry Cleere (ed.) Approaches to the Archaeological Heritage, pp. 63-72. Cambridge: Cambridge University Press.

Thapar, Romila. 1992. Interpreting Early India. New Delhi: Oxford University Press.

Arc 310: HARAPPAN CIVILIZATION

Course objectives

The objective of this course is to look at the detailed archaeological record of the Harappan civilization, the earliest in the Indian subcontinent

Course outcome

Students gain familiarity with the rise and decline of the Harappan Civilization, its regional extent and variation and the nature of its cities and material remains.

Unit 1 Civilization 10 hrs

- a. Definition and various characteristic features,
- a. Harappan culture in relation to other Civilizations of the world,
- b. Contribution of the Harappan Culture to the Regional and World History
- c. Research on the Harappan Culture- Pre Independence and Post independence era
- d. Background to the development of the Harappan culture in the Indian Subcontinent
- e. Various phases of the Harappan culture

Unit 2 Pre/Early Harappan cultures of 10 hrs

- a. Afghanistan and North and South Baluchistan
- a. Northwest India (Indus Basin, Ghaggar and Hakra),
- b. Gujarat (Kutch, Saurashtra and North Gujarat)
- c. Rajasthan (Hakra-Sothi)

Unit 3 Mature Harappan 10 hrs

- a. Origin and development of the Harappan Civilization Various theories.
- a. Contributions of the Pre/Early Harappan cultures to the Origin and development of the Harappan Civilization
- b. Geographical Distribution and Settlement Pattern
- c. Various Harappan Domains Sindhi, Sorath, Ghaggar, Anarta, etc
- d. Town planning and public and private architecture with special reference to Harappa, Mohenjo daro, Dholavira, Kalibangan, Farmana, Kuntasi, etc.
- e. Trade Hinterland and overseas, Role of the Gulf region, objects and material of trade, trade mechanism, transport facility, etc.
- f. Harappan script various theories about the decipherment, and the present status.
- g. Arts and crafts stone and metal sculptures, terracotta figurines, toys, seals and sealings, metal objects, pottery, lithic tools, lapidary, evidence of manufacture of crafts, material equipment, etc.

Unit 4 Socio Political Organization

5 hrs

- a. Evidence related to their social, political and religious life,
- b. Socio political, religious and economic organization of the Harappans.
- c. Craft specialization and various social groups within the society.
- d. Religion of the Harappans including Burial custom, interpretation of symbols and human, animal and tree figures, etc.
- e. Subsistence of the Harappans plant and animal diet, trade, agriculture and agriculture system, water management, exploitation of natural resources, etc.

Unit 5 Decline and the Late Harappan

5 hrs

- a. Various factors and theories about the Harappan Decline and consequences
- b. Late Harappan phase in Sindh, Cholistan, Haryana, Punjab, Gujarat and Western U.P.
- c. Late Harappan and OCP, PGW, Lustrous Red Ware and Cemetery 'H' culture

Unit 6 Harappan Culture and their contemporaries on its Periphery

5 hrs

- a. Chalcolithic cultures of Saurashtra (Prabhas Patan), North Gujarat, Mewar, Central India, Deccan.
- b. Interaction and influence on each other.
- c. Survival of Harappan legacy

Recommended Readings

Asthana, Shashi 1985. Pre Harappan Cultures of India and Borderlands. New Delhi: Books and Books

Chakrabarti, D.K. 1990. The External Trade of the Indus Civilization. New Delhi: Munshiram Manoharlal.

Dales, G.F. and J.M. Kenoyer. 1986. Excavations at Mohenjo Daro: The Pottery. Philadelphia: The University of Pennsylvania.

Fairservis, Walter, A. 1967. The Origin, Character and Decline of an Early Civilization. American Museum Novitates 2: 302:1 48.

Fairservis, Walter, A. 1992. The Harappan Civilization and its Writing. New Delhi: Oxford and IBH Publishing Co.

Jarrige, J.F. and R.H. Meadow 1980. The Antecedents of Civilizations in the Indus Valley. Scientific American 243(2): 122 133.

Kenoyer, J.M. 1991. The Indus Valley Traditions of Pakistan and Western India. Journal of World Prehistory 5(4):331 385.

- Kenoyer, J.M. 1992. Harappan Craft Specialization and the Question of Urban Segregation and Stratification. In V.N. Misra (ed.) *The Eastern Anthropologist*. 45 (1 2):39 54. (The Indus Civilization Special Number).
- Kenoyer, J.M. 1998. *Ancient Cities of the Indus Valley Civilization*, Karachi: Oxford University Press.
- Lal, B.B. and S.P. Gupta (eds.) 1984. *Frontiers of the Indus Civilization*. New Delhi: Books and Books.
- Lal, B.B. 1999. *The Saraswati flows on*. Aryan Books: New Delhi.
- Mughal, M.R. 1990. Further Evidence of the Early Harappan Culture in the Greater Indus Valley. *South Asian Studies* 6:175 200.
- Possehl, G.L. (ed.) 1979. *Ancient Cities of the Indus*. New Delhi: Vikas Publishing House.
- Possehl, G.L. 1980 *Indus Civilization in Saurashtra*. Delhi: B.R. Publishing House.
- Possehl, G.L. (ed.) 1993 *Harappan Civilization A Recent Perspective*. New Delhi: Oxford and IBH Publishing Co.
- Possehl, G.L. 1999. *Indus Age The Beginnings*, New Delhi: Oxford and IBH.
- Rao, S.R. 1963. Excavations at Rangpur and Other Explorations in Gujarat. *Ancient India* 18 19:5 207.
- Rao, S.R. 1973. *Lothal and the Indus Civilization*. Bombay: Asia Publishing House.
- Ratnagar, S. 1981. *Encounters. The Westerly Trade of the Harappan Civilization*. Delhi: Oxford University Press.
- Ratnagar, S. 1991. *Enquiries into the Political Organization of Harappan Society*. Pune: Ravish Publishers.
- Wheeler, R.E.M. 1968. *The Indus Civilization*. Third Edition. Cambridge: Cambridge University Press.

Arc. 311 : INTRODUCTION TO MUSEOLOGY

Course objectives

The objective of this course is to introduce students to the purpose and functioning of museums. The importance of museums in linking archaeology with public education is stressed.

Course outcomes

Students learn the basic functions of museums and their activities. Conservation, education, exhibition collection, documentation and research and legislation relating to museum are the major topics students learn about.

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|---------------|---|--------------|
| Unit 1 | Definition and functions of Museum | 4 hrs |
| | a. Definition of Museum, | |
| | b. Aims and functions of Museum. | |
| | c. Museums in the age globalization | |
| | d. Types of Museums and their classification | |
| Unit 2 | Collection, Documentation and Research | 6 hrs |
| | a. Aims, methods and ethics of collection. | |
| | b. Documentation; identification, classification, accessing, cataloguing, indexing, data processing, information retrieval, computerization, insurance of museum objects, accessing photographic record of museum collection. | |
| | c. Principles of classification and methods of identification of museum materials, terminology for describing museum objects. | |
| | d. Research in museum, examples of museum contribution to research, research facilities. | |
| Unit 3 | Museums in India; their history, collection and other activities | 5 hrs |
| | a. National Museum, New Delhi. | |
| | b. Indian Museum, Kolkata. | |
| | c. Chhatrapati Shivaji Maharaj Vastu Sangrahalaya, formerly Prince of Wales Museum, Mumbai. | |
| | d. Salar Jung Museum, Hyderabad. | |
| | e. Indira Gandhi Rashtriya Manav Sangrahalaya, Bhopal. | |
| Unit 4 | Museum Architecture and Exhibition; | 6 hrs |
| | a. Planning and maintenance of museum building, public and service area. | |
| | b. Lighting in relation to museum architecture and exhibition. | |

- c. Storage of reserve collection and problems of security.
 - d. Kinds of exhibition, planning and programming of exhibition – special, temporary, circulating and permanent, methods of grouping and installation, various stages of planning, role of designer.
 - e. Display techniques.
- Unit 5 Museum Education** 6 hrs
- a. General theories and principles of museum communication.
 - b. Museum and the public, public facility, educational, scientific, and cultural responsibility of museum knowledge of the community and museum audience.
 - c. Extension programme, mobile museum, workshops, fieldtrips, radio and television.
- Unit 6 Conservation and Preservation** 6 hrs
- a. Types of museum material.
 - b. Climatology, Deterioration factors – their recognition and control, climate and environment; light, insects, microorganisms, atmospheric pollution, curatorial responsibilities in preservation and conservation.
 - c. Conservation of organic material such as manuscripts, wood, paper, ivory and bone objects.
 - d. Conservation of inorganic material such as stone, terracotta, glass and metal.
 - e. Conservation of biological material, plants and animals.
- Unit 7 Professional Organizations related to Museums** 3 hrs
- a. International Council of Museums (ICOM)
 - b. Museums Association of India (MAI)
 - c. Special bodies related with Museum.
 - d. Information about various Museology courses in India.
- Unit 8 Museum Administration** 6 hrs
- a. Museum staff and their duties.
 - b. Museum finance and general maintenance
 - c. Museum and Public Relations, visitors facilities
 - d. Supervision and security.
- Unit 9 Legislation concerning Museums** 3 hrs
- a. The Indian Treasure-Trove Act 1878.
 - b. The Ancient Monuments and Archaeological Sites and Remains Act 1958.
 - c. Antiquity and Art Treasure Act 1972.

Recommended Readings :

Agrawal O.P. 1977. Care and Preservation of Museum Objects, New Delhi: National Research Laboratory for Conservation of Cultural Property.

Aiyappan A. & S.T.Satyamurti 1960. Handbook of Museum Technique, Madras: Sup. Govt. Press.

Basu M.N. 1943. Museum Method & Process of Cleaning & Preservation, Calcutta: University of Calcutta.

Baxi Smita J. and V. Dwivedi 1973. Modern Museum Organization and Practice in India, New Delhi: Abhinav Publication.

Bedekar V.H. (Ed.) 1988. New Museology and Indian Museum: Report based on proceedings of All India Seminar held at Gauhati, Assam.

Bhatnagar A. 1999. Museum, Museology and New Museology, New Delhi: Sandeep Prakashan.

Biswas T.K. 1996. Museum and Education, New Delhi: New Age International.

Chaudhari A.R. 1963. Art museum documentation & Practical handling, Hyderabad: Chaudhary & Chaudhary.

Edson G. & Dean David 1994. Handbook for Museums, London: Routledge.

Hooper Greenhill E. (Ed.) 1994. Educational Role of the Museum, London: Routledge.

Light R.B. et al. 1986. Museum Documentation System: Developments and Application, London: Butterworths.

Moore Kevin (Ed.) 1994. Museum Management, London: Routledge.

Pearce S.M. (Ed.) 1994. Interpreting Objects and Collections, London: Routledge.

Pearce S.M. 1990. Archaeological Curatorship, London: Leicester University Press.

Plenderleith H.J. 1971. Conservation of Antiquities and Works of Arts in India, Delhi: Sandeep Prakashan.

Taylor S. (Ed.) 1991. Try it! Improving exhibits through formative evaluation, Washington: Asso.of sc. tech. centre.

UNESCO Publication 1960. The Organization of Museum: Practical Advice, Paris: UNESCO.

Arc 312: CULTURAL HERITAGE MANAGEMENT

Course objectives

The objective of this course is to introduce students to the key concepts of Heritage management, including the definition and scope of the subject and its implementation in the Indian context.

Course outcomes

Students are prepared in this course with the issues related to Heritage management.

Unit 1	a. Heritage: Definition b. Need for preservation of heritage c. Scope of cultural heritage management	5 hrs
Unit 2	a. World Heritage Movement b. Role of International Organizations, e.g. UNESCO c. World Heritage Monuments d. World Heritage Monuments in India	10 hrs
Unit 3	a. History of Cultural Heritage in India b. Role of Government bodies c. Indian Legislation about Cultural Heritage d. Role of Non-Government Organizations and Universities	10 hrs
Unit 4	a. Heritage Management: Policy and Practice b. Developmental issues and their impacts c. Impact of natural factors, e.g. natural calamities d. Illegal trade of art objects and smuggling	10 hrs
Unit 5	a. Public participation in preservation of cultural heritage b. Enhancing public awareness: formal and non-formal education c. Tourism and cultural heritage	10 hrs

Recommended Reading

Batra, M. L. 1996. Conservation: Preservation and Restoration of Monuments. New Delhi: Aryan Books International.

- Basham, A.L. 2007. The Illustrated Cultural History of India. Oxford University Press.
- Bhandari, N.K. 2007. Cultural Heritage of India. Delhi: Eastern Book Corporation.
- Bhowmik, S. K. 2004 Heritage Management: Care, Understanding and Appreciation of Cultural Heritage. Jaipur: Publication Scheme.
- Biswas, Sachindra Sekhara. 1999. Protecting the Cultural Heritage (National Legislation and International Conservation). New Delhi: Aryan Books International.
- Deshpande, M. N. 1994. Care of Cultural Heritage. New Delhi : National Museum Institute.
- Dhawan, Shashi. 1996. Recent Trends in Conservation of Art Heritage. Delhi: Agam Kala Prakashan.
- Ghoshmaulik, S. K. and K.K. Bass 2001. Understanding Heritage: Role of Museum. Bhubaneswar: Academic Staff College.
- Howard, Peter. 2003. Heritage: Management, Interpretation, Identity. London: Continuum.
- Paddayya, K. 2004. Heritage management with special reference to modern impacts on rchaeology sites of lower Deccan. Deccan Studies 1 (2): 7-24.
- Rao, P.R. 1988. Cultural Heritage of India. Delhi: Sterling.
- Renfrew, C. 2000. Loot, Legitimacy and Ownership. London: Duckworth.
- Singh, L.K. 2008. Indian Cultural Heritage from Tourism Perspective. Delhi: ISHA Books.
- Thapar, B.K. 1989 Conservation of the Indian Heritage. New Delhi: Cosmo Publication.

ARC 401 : ART AND ARCHITECTURE OF INDIA (600 C.E. TO 1200 C.E.)

Course objectives

The objectives of this course are to introduce the major developments in art and architecture in India during the Medieval Period.

Course outcomes

Students become familiar with the monuments and sculptures of India during the period covered in the course.

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|--------|---|--------|
| Unit 1 | Theoretical Aspects and Development of Regional Schools | 3 hrs |
| | a. Brief review of the ancient Shilpa texts | |
| | b. Concept of Forms, Styles and Modes of Temple Architecture | |
| | c. Rise and Development of Regional Schools. | |
| Unit 2 | Early Structural Temples in North, Central, and Western India | 8 hrs |
| | a. General Review of Post-Gupta Monuments and Sculptures in Northern India | |
| | b. Osian group of temples in Rajasthan | |
| | c. Pratiharas: Deogarh, Gwalior, Gyarapur, | |
| | d. Kalchuris : Candrehe, Bheraghat, Maihar | |
| | e. Maitrakas and Saindhavas: Gop. Khimeshvara, Ghumali, Miyani | |
| Unit 3 | Late Structural Temples in North, Central, and Western India | 8 hrs |
| | a. Paramaras : Udaypur, Jamali, Nemawar | |
| | b. Solanki: Sunak , Modhera , Sejakpur, Dilwara | |
| | c. Chandellas: Khajuraho group of temples | |
| Unit 4 | Structural Temples and monuments: Eastern India | 4 hrs |
| | a. Development and Characteristics of
Kalinga style of Temple Art and Architecture | |
| Unit 5 | Rock-cut Monuments, Structural Temples and Sculptures: Deccan | 12 hrs |
| | a. Chalukyas of Badami: Aihole, Badami, Pattadakal, Mahakuta and Alampur | |
| | b. Rock-cut caves at Elephanta | |
| | c. Rashtrakutas : Ellora | |
| | d. Chalukyas of Kalyana: Gadag, Ittagi, Harihar and Laksmeshvara. | |
| | e. Yadavas: Sinnar, Balasane and Jhodge | |
| | f. Shilaharas: Ambarnath and Khidrapur | |
| | g. Study of temple Architecture-Practical Training of Plan drawing | |
| Unit 6 | Rock-cut Monuments, Structural Temples and Sculptures: South India | 8 hrs |
| | a. Pallavas: Mahabalipuram and Kanchipuram | |
| | b. Pandyas: Kalugumalai and Tirupattur | |

- c. Cholas : Kumbhakonam, Tanjavur, Gangaikondacholapuram and Darasuram,
- d. Hoyasalas: Belur, Halebid and Somanathpur

Unit 7 Bronzes of India

2 hrs

- a. The Pallavas and The Cholas of South India
- b. The Palas of the Senas of Eastern India

Recommended Readings:

Acharya, P.K.1927. Indian Architecture According to Manasara–Shilpashatra. London: Oxford University Press.

Ali, Rahman 2002. Temples of Madhya Pradesh- The Paramara Art. New Delhi: Sundeep Prakashan.

Bandyopadhyay, Bimal.1981. Metal Sculptures of Eastern India. Delhi: Sundeep Prakashan.

Deglurkar, G.B. 1994. Temple Architecture and Sculpture of Maharashtra. Nagpur: Nagpur University.

Berkson, Carmel 1992. Ellora: Concept and Style. New Delhi: IGNC and Abhinav Publications.

Brown, Percy 1940. Indian Architecture (Buddhist and Hindu Periods). Bombay: D.B. Taraporevala Sons and Co.

Chandra, Pramod (ed) 1975. Studies in Indian Temple Architecture. New Delhi : American Institute of Indian Studies .

Collyer, Kelleon 1990. The Hoyasala Artists Their Identity and Style. Mysore: Directorate of Archaeology and Museums.

Deglurkar, G.B. 2004. Portrayal of the Women in the Art and Literature of the Ancient Deccan. Jaipur: Publications Scheme.

Deglurkar, G.B. 2005. Sursundari. Pune: Bhartiya Vidhya Bhavan (in Marathi).

Dehejia, Vidya 1986. Yogini Cult and Temples A Tantric Tradition. New Delhi: National Museum.

Dehejia, Vidya 1990. The Art of Imperial Cholas. Columbia: Columbia University Press.

Dehejia, Vidya 1979. Early Stone Temples of Orissa. Delhi: Vikas Publishing House.

de Lippe, Aschwin 1978. Indian Medieval Sculpture. Amsterdam: North Holland Publishing Co.

Desai, Vishakh and Darielle Mason (eds) 1993. Gods, Guardians and Lovers. New York and Ahmedabad: Asia Society Galleries and Mapin Publishing.

Deva, Krishna 1990. Temples of Khajuraho (2 vols.). New Delhi: Archaeological Survey of India.

Deva, Krishna 1995. Temples of India (2 vols.) New Delhi: Aryan Books International.

Dhaky, M.A. 1961. The Chronology of Solanki Temples of Gujarat, Journal of Madhya Pradesh Itihas Parishad 3:1-83.

- Dhaky, M. A. 1965. *The Vyala Figures on the Medieval Temples of India*. Varanasi : Prithvi Prakashan
- Dhaky, M. A. 1977. *The Indian Temple Forms in Karnata Inscriptions and Architecture*. Delhi: Abhinav Publications.
- Dhaky, M. A. (ed.) 1996. *Encyclopedia of Indian Temple Architecture*. Vol. I, Part 3, South India: Upper Dravidadesa Later Phase AD 973-1326. Delhi: American Institute of Indian Studies and Oxford University Press.
- Dhaky, M .A. (ed.) 1998. *Encyclopedia of Indian Temple Architecture*. Vol. II, Part 3, North India: Beginnings of Medieval Idiom C AD 900-1000. Delhi: American Institute of Indian Studies and IGNCA.
- Dhaky, M.A.2005. *The Indian Temple Traceries*. New Delhi: D.K. Printworld (P) Ltd.
- Dhavalikar, M.K.1983. *Masterpieces of Rashtrakuta Art: The Kailas*. Bombay: D.B.Taraporewala and Sons Pvt. Ltd.
- Donaldson,Thomas E.1985. *Hindu Temple Art of Orissa*. (3 vols.). Leiden: E.J.Brill.
- Fergusson, James 1876. *A History of Indian and Eastern Architecture*. London: John Murray.
- Foekema, G. 1994. *Hoyasala Architecture*. New Delhi: Books and Books.
- Foekema, G. 2003. *Chalukya Architecture* (3 vols.) New Delhi: Munshiram Manoharlal Publishers Pvt. Ltd.
- Ganguly, O.C. 1957. *Art of Chandela*. Calcutta: Rupa and Company.
- Handa, Devendra 1984. *Osian: History, Archaeology, Art and Architecture*. Delhi: Sundeep Prakashan
- Hardy, Adam 1995. *Indian Temple Architecture: Form and Transformation*. New Delhi: Abhinav Publications.
- Hardy, Adam 2007. *The Temple Architecture of India*. Chichester: Wiley.
- Harle, James 1986. *The Art and Architecture of the Indian Subcontinent*. Harmondsworth: Penguin.
- Huntington, Susana .L. with John Huntington. 1985. *The Art and Architecture of India*. New York: Weatherhill.
- Kramrisch, Stella 2002 (Reprint) *The Hindu Temples* (2 vols.) New Delhi: Motilal Banarasidas.
- Lockwood , Michael et al. 2001.*Pallava Art*. Madras: Tambaram Research Associates.
- Mathur,Asha Rani. 1988. *The Great Traditions: Indian Bronze Masterpieces*. New Delhi: Festivals of India.
- Meister, Michael W. and M.A. Dhaky (ed.) 1991. *Encyclopedia of Indian Temple Architecture*. Vol. II , Part 2, North India: Period of Early Maturity C AD 700- 900. Delhi: American Institute of Indian Studies and Oxford University Press.
- Meister, Michael W. and M.A. Dhaky (ed.) 1999. *Encyclopedia of Indian Temple Architecture*. Vol. II , Part 1, North India: Foundations of North Indian Style C 250 BC- AD 1100. Delhi: American Institute of Indian Studies and Oxford University Press.
- Meister, Michael W. (ed.) 1999. *Encyclopedia of Indian Temple Architecture*. Vol. I ,Part 1, South India: Lower Dravidadesa 200 BC-AD 1324. Delhi: American Institute of Indian Studies and Manohar Publishers.

- Meister, Michael W. and M.A. Dhaky (ed.) 1999. Encyclopedia of Indian Temple Architecture. Vol. I ,Part 2, South India: Upper Dravidadesa AD 550-1075. Delhi: American Institute of Indian Studies and Oxford University Press.
- Michell, George. 1977. The Hindu Temple: An Introduction to its Meaning and Form. Chicago: University of Chicago Press.
- Michell, George. (ed.) 1996. Encyclopedia of Indian Temple Architecture. Vol. I ,Part 3, South India: Upper Dravidadesa Later Phase . Delhi: American Institute of Indian Studies.
- Misra,R.N. 1987. Sculptures of Dahala and Dakshina Kosala and Their Background. Delhi: Agam Kala Prakashan.
- Nanavati, J.M.and M.A.Dhaky.1969. The Maitraka and the Saindhava Temples of Gujarat. Ascona: Artibus Asiae.
- Nanavati, J.M and M.A.Dhaky. 1963. The Ceilings in the temples of Gujarat , Bulletin of the Baroda Museum and Picture Gallery, Vols. XVI-XVII.
- Parimoo, Ratan et al 1988. Ellora Caves : Sculptures and Architecture. New Delhi: Books and Books.
- Pichard, Pierre 1995. Thanjavur Brhadisvara, An Architectural Study. Delhi: IGNCa and Ecole Francaise de l' Extreme Orient.
- Settar,S, 1992. Hoyasala Temples. Dharwad : Karnataka University.
- Shah, U.P. and M.A.Dhaky. 1976. Aspects of Jain Art and Architecture. Ahmedabad: L.D. Institute.
- Sivaramamurty, C. 1961. Indian Sculpture. New Delhi: Allied Publishers Pvt Ltd.
- Sivaramamurty, C. 1963. South Indian Bronzes. New Delhi: Lalit Kala Academy.
- Soundara Rajan, K.V. 1972. Indian Temple Styles:The Personality of Hindu Architecture . New Delhi: Munshiram Manoharlal.
- Soundara Rajan, K.V. 1980. Art of South India-Deccan. New Delhi: Sundeep Prakashan.
- Soundara Rajan, K.V. 1980. Art of South India: Tamil Nadu and Kerala. New Delhi : Sundeep Prakashan
- Soundara Rajan, K.V. 1981. Cave Temples of the Deccan. New Delhi: Archaeological Survey of India.
- Srinivasan, K.R. 1972. Temples of South India. New Delhi: National Book Trust.
- Srinivasan, K.R. 1964. Cave Temples of the Pallavas. New Delhi: Archaeological Survey of India.
- Tadgell, Christopher 1995. The History of Architecture in India. London: Phaidon Press Ltd.
- Tartakov, Gary Michael.1997. The Durga temple at Aihole: Historiographical Study. New Delhi: Oxford University Press.
- Trivedy, R.D.1990. The Temples of Pratihara Period in Central India. New Delhi: Archaeological Survey of India.

Arc 402: ANCIENT INDIAN NUMISMATICS

Course Objectives

The objective of this course is to learn about the method of study of coins and the development of coinage in the Indian Subcontinent.

Course outcomes

Students are able to identify coins of different period and some of the methods employed in studying coins.

Unit 1 Introduction to Numismatics 8 hrs

- a. Numismatography: History of Numismatic Studies in India
- b. Numismatic Studies: Terminology, Scope and Importance in the Reconstruction of Socio-cultural and economic History
- c. Provenance of Coin: Findings from Archaeological excavations and Stratigraphic relevance, Stray findings, Hoards, Private and Public Collections

Unit 2 Study of Ancient Indian Coinage: polity-economic dimensions 20 hrs

- a. Punch-Marked Coins: Archaic and Universal; Early Uninscribed Cast Copper Coins (EUCC)
- b. Coins of Indo-Greek, Indo-Scythian and Indo-Parthian dynasties
- c. Tribal Coins, Local Coins, Coins of City States
- d. Coinage of the Kushanas: Coins of Kanishka I in Particular
- e. Coins of the Satavahanas and Contemporary Rulers
- f. Coins of the Western Kshatrapas: Kshaharata and Kardamaka Rulers
- g. Coins of the Sangama Period: Chera, Chola and Pandya
- h. Distribution of Roman Coins in India
- i. Coins of the Guptas

Unit 3 Chemical and Statistical Analyses of Coins 10 hrs

- a. Recent advancement in numismatic studies.
- b. Coin in Archaeological contest and chronological significance
- c. Metallurgy of Coins
- d. Minting Techniques
- e. Destructive and Non-destructive methods of Analysis
- f. Statistical Analysis: Frequency Tables and Histograms

Unit 4 Practical Training

7 hrs

- a. Coin Cleaning: Treatment and Preservation
- b. Preparation of Coin Catalogue
- c. Identification of coins and report writing

Recommended Readings:

Allan, J. 1935. Catalogue of Coins of Ancient India. London: British Museum

Altekar, A.S., 1937. Catalogue of Coins of the Gupta Empire. Varanasi: Numismatic Society of India.

Bhandarkar, D.R., 1921. Carmichael Lectures on Ancient Indian Numismatics. Calcutta: Calcutta University.

Bharadwaj, H.C. 1979. Aspects' of Ancient Indian Technology. Delhi: Motilal Banarasidas.

Chattopadhyaya, Bhaskar 1967. The Age of the Kushanas – A Numismatic Study. Calcutta: Punthi Pustak.

Chattopadhyaya, Brajdulal 1977. Coins and Currency System in South India. Delhi: Munshiram Manoharlal.

Dasgupta, K.K. 1974. A Tribal History of Ancient India – A Numismatic Approach. Calcutta: Nababharat Publications.

Datta, Mala 1990. A Study of the Satavahana coinage. Delhi: Harman Publishing House.

Dhavalikar, M.K. 1975. Pracheena Bharatiya Nanakshastra. Pune: Maharashtra Vidyapeeth Granthanirmiti Mahamandal.

Handa, Devendra 2007. Tribles Coins of Ancient India. New Delhi: Aryan Books International.

Elliot, W. 1970. (Reprint) Coins of South India. Varanasi: Indological Book House.

Gardener, P. 1886. The Coinage of the Greek and Scythic Kings of Bactria and India in British Museum. London: British Museum.

Gokhale, Shobhana 1981. New Discoveries in the Satavahana Coinage, JNSI vol. XLIII: 54-59.

Goyal, S.R. 1995. Dynastic Coins of Ancient India. Jodhpur: Kusumanjali Book World.

Gupta, P.L. 1979. (2nd Revised Edition) Coins. New Delhi: National Book Trust.

Gupta, P.L. 1981. Coins : Source of Indian History. Ahmedabad: B.J. Institute of Learning and Research.

Gupta, P.L. and Sarojini Kulashreshtha 1993. Kushana Coins and History. New delhi: D.K. Publishers.

Gupta, P.L. and T.R. Hardaker 1985. Ancient Indian Silver Punch-Marked Coins of the Magadha – Maurya Karshapana Series. Nasik: Indian Institute of Research in Numismatic Studies.

Jha, A.K. 1998. Observations on the Principles of Typology: A Study of Ancient Indian Coinage, in Ex Moneta: Essays on Numismatics in Honour of Dr. David W. Macdowall

(A.K. Jha and Sanjay Garg eds.) Volume I, pp. 33-42. New Delhi: Harman Publishing House.

Jha, Amiteshwar and Dilip Rajgor 1994. *Studies in the Coinage of Western Kshatrapas*. Anjaneri: Indian Institute of Research in Numismatic Studies.

Journal of the Numismatic Society of India, Varanasi.

Krishnamurti, R. 1997. *Sangam Age Tamil Coins*. Madras: Garnet Publishers.

Lahiri, A.N. 1965. *Corpus of Indo-Greek Coins*. Calcutta:

Mangalam, S.J. 2001. *Shankar Tiwari Collection of Early Coins from Narmada Valley*. Bhopal: Directorate of Archaeology and Museums, Government of Madhya Pradesh.

Numismatic Digest A Journal Published by Indian Institute of Research in Numismatic Studies, Anjaneri (Nasik).

Rajgor, Dilip 2001. *Punch-Marked Coins of Early Historic India*. California: Reesha Books International.

Rapson, E.J. 1908. *Catalogue of Coins of Andhra Dynasty, Western Kshatrapas etc*. London: British Museum.

Ray, S.C. 1977. *The Stratigraphic Evidence of Coins in Indian Excavations and Some Allied Issues*. Varanasi: Numismatic Society of India.

Sahni, Birbal 1973. *The Technique of Casting Coins in Ancient India*. Varanasi: Bharatiya Publishing House.

Sarma, I.K. 1980. *Coinage of the Satavahana Empire*. Delhi: Agam Kala Prakashan.

Shastri, A.M. (Ed.) 1972. *Coinage of Satavahanas and Coins from Excavations*, Nagpur: Nagpur University.

Shastri, A.M. (Ed.) 1999. *Age of the Satavahanas (two volumes)*: New delhi: Aryan Prakashan.

Srivastava, A.K. 1969. *Catalogue of Indo-Greek Coins in the State Museum*, Lucknow. Lucknow: State Museum.

Srivastava, A.K. 1972. *Catalogue of Saka-Pahlava Coins of Northern India in the State Museum*, Lucknow. Lucknow: State Museum.

Studies in South Indian Coins: A Journal Published by South Indian Numismatic Society, Madras.

Whitehead, R.B. 1910. *Catalogue of Coins in the Punjab Museum, Lahore, Vol.I: Indo-Greek Coins*. Oxford: Clarendon Press.

Arc 403: ETHNOARCHAEOLOGY

Course objective

The objective of this course is to become familiar with the ethnologies of different communities in India and their relevance for understanding archaeological data.

Course Outcome:

Students are familiarized with the importance of ethnographic data as a source to understand archaeological data.

Unit 1 Concepts in Ethnoarchaeology 10 hrs

- a. Nature and interrelationship of archaeological and ethnographic records: Role of Analogy.
- b. Definition, scope and methods of ethnoarchaeology;
- c. Brief review of the Ethnoarchaeological researches in India.
- d. Ethnoarchaeology and reconstruction of past material culture; e.g. Settlement pattern, technology, ceramics, food processing, etc.

Unit 2: Tribe and caste 5 hrs

- a. The composition of Indian society
- b. Castes and tribes. Origin and evolution of the caste system in India and its archaeological significance.

Unit 3: Ethnoarchaeological studies in Indian settings 16 hrs

- a. Forager/collector model to Palaeolithic and Mesolithic societies: e.g. Andaman Islanders
- b. Ethnoarchaeological researches on the living hunter-gatherers in central, western and southern regions of India. Pardhis, Van Vagris, Korkus, Gonds, Bastar, Birhors, Yanadis, Chenchus, and Musahars. Veddas of Sri Lanka
- c. Present day shifting cultivation practices and their relevance to the study of Mesolithic, Neolithic and Chalcolithic cultures of India.
- d. Ethnoarchaeology of the South Indian Neolithic culture
- e. Ethnoarchaeological research for reconstructing the early agro-pastoral Chalcolithic communities of central and western India; Mahadeo Kolis, Bhils and Dhangars.
- f. Living Megalithic tradition in India.
- g. Ethnoarchaeology of fishing (inland and coastal) economies
- h. Ethnoarchaeology of marginal resource utilization (shell fishing)

Unit 4 Ethnoarchaeological studies outside India: 8 hrs

- a. Important Ethnoarchaeological studies of living hunter-gatherer societies outside India: Eskimos of Alaska, Bushmen of the Kalahari Desert and Australian Aborigines

Unit 5 Ethnoarchaeological applications for Sciences in archaeology 6 hrs

- a. Role of analogy in problems pertaining to the application of sciences in archaeology; biological anthropology, ethnobotany and archaeo-zoology.

Recommended Readings:

Ajay Pratap 1987. Shifting Cultivation in the Rajmahal Hills of India, in *Archaeology as Long-term History*, (Ed) Ian Hodder, pp. 68-83. Cambridge: Cambridge University Press.

Ajay Pratap 2000. *The Hoe and the Axe: Ethnohistory of Shifting Cultivation in Eastern India*. New Delhi: Oxford University Press.

Allchin, B. 1985. Ethnoarchaeology in South Asia, in *South Asian Archaeology 1983*, (J. Schotsmans and M. Taddei Eds.), pp 21-33 Napels: Instituto Universitario Orientale.

Allchin, B. 1994. *Living Traditions: South Asian Ethnoarchaeology*. New Delhi: Oxford & IBH Co Pvt Ltd.

Allchin, F. R. 1959. Poor Men's Thalys : A Deccan Potter's Technique, *Bulletin of the School of Oriental and African Studies*, 22(2): 250-7.

Ansari, S. 2000. Small game hunting Musahars: An Ethnoarchaeological Approach, *Puratattva*, 30: 141-150.

Ansari, S. 2001. Fishing Practices Among the Mallahs of Allahabad District, Uttar Pradesh, *Man and Environment*, 26 (1): 39-55.

Ansari, S. 2005. Ethnoarchaeology of Prehistoric Settlement Pattern of South-Central Ganga Valley, *Indian Society for Prehistoric and Quaternary Studies Monograph Series No. 4*, Pune: Indian Society for Prehistoric and Quaternary Studies.

Ansari, S. 2005. Prehistoric Settlement Pattern of South-Central Ganga Valley: An Ethnoarchaeological Perspective in *Gurudakshina: Facets of Indian Archaeology*, (Ed.) Alok Kumar Kanungo, pp. 287-328, Oxford: BAR International Series 1433.

Ansari, S. 2011. *Ethnoarchaeological Perspectives of Prehistoric settlement Patterns of South-Central Ganga Valley* Oxford : BAR International Series.

Arati Deshpande-Mukherjee 2000. An Ethnographic Account of Contemporary Shellfish Gathering on the Konkan Coast, Maharashtra, *Man and Environment* 25 (2): 79-92.

Arati Deshpande-Mukherjee 2006. Reconstructing the Past: Ethnographic Observation on Shell working at Bishnupur, in *Past and Present Ethnoarchaeology in India*, (Gautam Sengupta,

- Suchira Roychoudhury and Sujit Som Eds.), pp.383-409. Pragati Publications (New Delhi) in collaboration with Centre for Archaeological Studies and Training Eastern India (Kolkata).
- Axel Steensberg. 1980. *New Guinea Gardens: Study of Husbandry with Parellel in Prehistoric Europe*, Cambridge University Press, Cambridge.
- Axel Steensberg. 1986. *Man the Manipulator. An Ethnoarchaeological Basis for Reconstructing the Past*, National Museum, Kopenhagen.
- Axel Steensberg. 1993. *Fire Clearance Husbandry: Traditional Techniques Throughout the World*, Poul Kristensen, Hernig.
- Bettinger, R.L. 1987. *Archaeological Approaches to Hunter-Gatherer*, *Annual Review of Anthropology* 16: 121-142.
- Bhan Kuldeep K. 2007 *Review of Ethnoarchaeological Research in Western India and Future Directions*, in *Anthropology for Archaeology Proceedings of the Prof. Irawati Karve Birth Centenary Seminar* (Walimbe, S.R. P.P. Joglekar and K.K. Basa Eds.), pp. 63-76. Pune: Deccan College.
- Bichieri, M.G. 1972. *Hunters and Gatherers Today*. New York: Holt, Rinehart and Winston.
- Binford, L. R. 1988. *In Pursuit of the Past*. New York: Thames and Hudson.
- Binford, L.R. 1978. *Nunamiut Ethnoarchaeology*. New York: Academic Press.
- Coles, J. 1973. *Archaeology by Experiment*. London: Hutchinson.
- Cooper, Z. 1992. *The Relevance of the Forger/Collector Model to Island Communities in the Bay of Bengal*, *Man and Environment* 17(2): 111-122.
- Cooper, Z. 1997. *Prehistory of the Chitrakot Falls Central India*. Pune: Ravish Publishers.
- Cooper, Z. 2002. *Archaeology and History: Early Settlement in the Andaman Islands*. New Delhi: Oxford University Press.
- Dhavalikar, M.K. 1983. *Ethnoarchaeology in India*, *Bulletin of the Deccan College Research Institute* 42: 49-68.
- Dhavalikar, M.K. 1994. *Chalcolithic Architecture at Inamgaon and Walki: An Ethnoarchaeological Study*, in *Living Traditions* (Ed.) B. Allchin, pp 35-52. New Delhi: Oxford-IBH.
- David N. and C. Kramer 2001. *Ethnoarchaeology in Action*. Cambridge: Cambridge University Press.
- Gould, R.A. 1978. *Beyond Analogy in Ethnoarchaeology, Explorations in Ethnological Reasoning*, *Journal of Anthropological Archaeology* 1 (4): 355-81.
- Gould, R.A.1980. *Living Archaeology*. Cambridge: Cambridge University Press.

- Griffin, P.B. and W.G. Solheim II. 1990. Ethnoarchaeological Research in Asia, *Asian Perspectives* 28 (2): 145-161.
- Grigg, D.B. 1980. *The Agricultural Systems of the World*. Cambridge: Cambridge University Press.
- Jain, S.K. 1991. *Contributions to Indian Ethnobotany*. Jodhpur: Scientific Publishers.
- Jayaswal, V and K. Krishna 1986. *An Ethnoarchaeological View of India Terracotta*. New Delhi: Agam Kala.
- Jochim, M.A. 1976. *Hunter Gatherer Subsistence and Settlement: A Predictive Model*. New York: Academic Press.
- Kanungo, A.K. 2004. Glass Beads in Ancient India and afurnace-Wound Beads at Purdalpur : An Ethnoarchaeological Approach, *Asian Perspective*, Vol 43(1) : 123 -150.
- Kanungo, A.K. 2004. *Glass Beads in Indian Archaeology: An Ethnoarchaeological Approach*. Oxford: BAR International Series 1242.
- Kenoyer, J.M. 1983. *Shell working Industries of the Indus Civilization: An Archaeological and Ethnographic Perspective*. Ph.D Dissertation. Berkeley: University of California.
- Kenoyer, J.M., M. Vidale and K.K. Bhan 1991. Contemporary Stone bead –Making in Khambhat, India: Patterns of Craft Specialization in the Archaeological Record, *World Archaeology* 23 (1): 44-63.
- Kramer David N. 2001 . *Ethnoarchaeology in Action* . Cambridge: Cambridge University Press.
- Kramer, C. 1980. *Ethnoarchaeology*. Guildford Survey: Columbia Survey: Columbia University Press.
- Kramer, C. 1994. A Tale of Two Cities: Ceramic Ethnoarchaeology in Rajasthan, in *Living Traditions* (B. Allchin Ed.), pp 307-22. New Delhi: Oxford-IBH.
- Lee, R.B. and I. Devore 1975. *Man the Hunter*. Chicago: Aldine Publishing Co.
- Leshnik, L.S. and G. Sontheimer. 1975. *Pastoralists and Nomads*. Wiesbaden: Otto Harrassowitz.
- Maheshwari, J.K. 1996. *Ethnobotany in South Asia*. Jodhpur: Scientific Publishers.
- Maheshwari, J.K. and R. Jones 1988. *Archaeology with Ethnography: An Australian Perspective*. Canberra: Department of Prehistory, Research School of Pacific Studies, Australian National University.
- Meehan, B. and R. Jones 1988. *Archaeology with Ethnography: An Australian Perspective*. Canberra: Department of Prehistory, Research School of Pacific Studies, Australian National University.

- Michael, J. Balick and Paul Alan Cox 1996. *Plant, People and the Science of Ethnobotany*, Museum of Anthropology, University of Michigan, Ann Arbor.
- Miller, D. 1985. *Artefacts as Categories: A Study of Ceramic Variability in Central India*. Cambridge: Cambridge University Press.
- Misra, V.N. 1974. Archaeological and Ethnographic Evidence for the Hafting and Use of Microliths and Related Tools, *Puratattva* 7: 3-12.
- Misra, V.N. 1984. The Van Vagris- Lost Hunters of Thar Desert , Rajasthan, *Man and Environment* 15 (2) 89-108.
- Mohanty, P. and J. Mishra 2002. Fifty Years of Ethnoarchaeological research in India: A Review, in *Archaeology and Interactive disciplines* (S. Settar and R. Korisetar Eds.), pp 169-207. Delhi: Indian Council of Historical Research
- Morris, B. 1982. *Forest Traders: A Socio-Economic Study of the Hill Pandaram*. London School of Economics Monograph, Social Anthropology 55. London: Athlone Press.
- Morrison Kathleen D. and Laura L. Junker. 2002. *Forager-Traders in South and Southeast Asia: Long Term Histories*. Cambridge: Cambridge University Press.
- Murty, M.L.K. 1981. Hunter-Gatherer Ecosystems and Archaeological Patterns of Subsistence Behaviour on the South-East Coast of India: An Ethnographic Model, *World Archaeology* 13: 47-58.
- Murty, M.L.K. 1985. Ethnoarchaeology of Kurnool Cave Area, *World Archaeology* 17 (2): 192-205.
- Murthy M.L.K. 2007. Social Ecology of Village Goddesses and Agro-pastoral Communities in Eastern Ghats (Andhra Pradesh), in *Anthropology for Archaeology Proceedings of the Prof. Irawati Karve Birth Centenary Seminar* (Walimbe, S.R. P.P. Joglekar and K.K. Basa Eds.), pp. 95-103. Pune: Deccan College.
- Murty, M.L.K. and G.D. Sontheimer 1980. Prehistoric Background to Pastoralism in the Southern Deccan in the Light of Oral Traditions and Cults of Some Pastoral Communities, *Anthropos* 75: 163-84.
- Nagar, M. 1975. Role of Ethnographic Evidence in the Reconstruction of Archaeological Data, *Eastern Anthropologist* 28 (1): 13-22.
- Nagar, M. 2008 *Hunter-Gatherers in North and Central India: An*
- Nagar, M. and V.N. Misra. 1993 *The Pardhis: A Hunting gathering Community of Central and Western India*. *Man and Environment* XVIII (1): 113 144.
- Nagaraja Rao, M.S. 1965. Survival of Certain Neolithic Elements Among the Boyas of Tekkalkota, *Athropos* 60: 180-6.

- Paddayya, K. 1998. Evidence of Neolithic Cattle Penning at Budhihal, Gulburga District, Karnataka, *South Asian Studies* 13: 141-54.
- Pakem, B, J.B., Bhattacharya, B.B. Dutta, and B. Datta Ray. 1980. *Shifting Cultivation in North-East India*, Shillong: North East India Council for Social Science Research.
- Pal J. N. 2007. Review of the Ethnoarchaeological Research in the Gangetic Basin, and Future Directions, in *Anthropology for Archaeology Proceedings of the Prof. Irawati Karve Birth Centenary Seminar* (Walimbe, S.R. P.P. Joglekar and K.K. Basa Eds.), pp. 77-94. Pune: Deccan College.
- Panja, S. 1996. Mobility Strategies, Site Structure and Subsistence- Settlement Organizations: An Actualistic Perspective, *Man and Environment* 21 (1): 58-73.
- Raju, D.R. 1988. *Stone Age Hunter-Gatherers: An Ethno- Archaeology of Cuddapah Region, South-East India*. Pune: Ravish Publishers.
- Ray, H.P. 1996. Maritime Archaeology: The Ethnographic Evidence, *Man and Environment* 21 (1): 74-85.
- Richard B. Lee and Richard Daly 1999. *Hunters and Gatherers*. Cambridge: Cambridge University Press.
- Rivers, W. H. R. 1967. *The Todas*. London.
- Roy, S.K. 1981. Aspects of Neolithic Agriculture and Shifting Cultivation, Garo Hills, Meghalaya, *Asian Perspective* 24: 193-221.
- Satapathy, K.K. and B.K. Sarma 2002. Shifting Cultivation in India: An Overview, *Asian Agri-History*, 6 (2): 121-139.
- Schiffer, M. 1978. Methodological Issues in Ethnoarchaeology, in *Exploration in Ethnoarchaeology* (R. Gould Ed.), pp 229-47. Albuquerque: University of New Mexico Press.
- Sengupta, G. Suchira Roychoudhury and Sujit Som 2006. *Past and Present Ethnoarchaeology in India*. New Delhi : Pragati Publications and Centre for Archaeological Studies and Training Eastern India (Kolkata).
- Sinopali, C.M. 1991. Seeking the Past through the Present: Recent Ethnoarchaeological Research in South Asia, *Asian Perspectives* 28 (2): 145-161.
- Smiley, F.E. et al. 1980. *The Archaeological Correlates of the Hunter-Gatherer Societies: Studies from the Ethnographic Record*. Ann Arbor: Michigan University Pree.
- Stiles, D. 1977. Ethnoarchaeology: A Discussion of Method and Application, *Man* 12: 87-103.
- Tripathi, V. and Arun K. Mishra 1997. Understanding Iron Technology: An Ethnographic Model, *Man and Environment* 22 (1): 59-68.

Arc 404: EARLY IRON AGE OF INDIA

Course objective

The Early Iron Age is a formative period in Indian Civilization and so its archaeology is of great interest. In this course the data from different parts of India is reviewed.

Course Outcomes

Students are introduced to the archaeological record of the Iron Age in India and some of the theoretical issues related to state formation and the development of complex societies

Unit 1 8 hrs

- a. Antiquity of Use of Iron
- b. Iron, Nature of Iron ore and major Iron ore locations/deposits in India.
- c. Beginning of Iron Age in India: Archalogical and Literary evidence
- d. Various theories regarding the introduction of iron in India.
- e. Concept of polycentric origin.

Unit 2 Early Iron Age Culture of India 8 hrs

- a. Historiography of Early Iron Age Research in India.
- b. Emergence of various ideas of development and craf socialisation.
- c. Introduction of Iron: Emergence of Complex Societies
- d. Painted Grey Ware Culture: chronology, material Culture, distribution and
- e. Characteristic features.
- f. Iron in Gandhar Grave Culture of Swat Valley

Unit 3 Early Iron Age and Megalithic Traditions: 11 hrs

(Distribution, typology, material culture, Art and craft specialisation, subsistence, trade and commeres, and Chronology.)

- a. Evidence and nature of distribution of Megalithic culture in India.
- b. Settlement pattern of of Early Iron age and Megalithic people
- c. Megalithic traditions/culture in Northern India
- d. Megalithic traditions/culture in Central India
- e. Megalithic traditions/ culture South India
- f. Megalithic traditions/cultures in North-Eastern India

Unit 4 Socio-Cultural- Economic Life of Early Iron Age People 8 hrs

- a. Role of Iron in emergence of Second Urbanisation: Various causes, processes and consequences.
- b. Society and Social life during Erly Iron Age
- c. Living Megalithic traditions in India: An Ethno-archaeological Perspective
- d. Iron Smelting Processes and Mettalurgy: Past and Present
- e. Herostones/Viragal

Unit 5 Important Excavated Sites:

10 hrs

Ataranjikhera, Ahirachhatra, Burzhom, Megalithic Cultures of the Adwa Valley (Central Vindhya), Joythma (Nagaland), Mahurzhari, Naikund, Bhagimohiri, Takalghat-Khapa, Ramapuram, Hirebenekal, Brahmagiri, Chandravali, Adichennalur, Kodumanal, Ummichiipoyh

Recommended Readings:

Agrawal, D.P. and D.K. Chakrabarty (ed.) 1979. *Essays in Indian Protohistory*. New Delhi: D.K Publishers.

Antonini, Silva and G. Stacul 1972. *Protohistoric Graveyards of Swat (Pakistan)*. Rome: ISMEO.

Banerjee, N.R. 1965. *The Iron Age in India*. Delhi: Munshiram Manoharlal.

Brubaker, Robert. 2002. Aspects of Mortuary variability in the South Indian Iron Age. *Bulletin of the Deccan College Research Institute* 60 61: 253 302.

Chakrabarti, D.K. 1992. *Early Use of Iron in India*. Bombay: Oxford University Press.

Chakrabarti, D.K. 1984. Study of the Iron Age in India. *Puratattva* 13:81 85.

Deo, S.B. 1973. *Problem of South Indian Megaliths*. Dharwad: Karnataka University.

Deo, S.B. 1985. *The Megaliths: Their Culture, Ecology, Economy and Technology*. In *Recent Advances in Indian Archaeology*, S.B. Deo and K. Paddayya (eds.). Pune: Deccan College.

Ghosh, A. 1973. *The City in Early Historical India*. Simla. Indian Institute of Advanced Study.

Leshnik, Lawrence 1971. *South Indian Megalithic Burial*. Wiesbaden: Franz Steiner Verlag Gmh.

Mohanty,R.K., and S.R. Walimbe, 1993. A Demographic Approach to the Vidarbha Megalithic Cultures *Man and Environment*, XVIII (2):93-103.

Mohanty,R.K. and V.Selvakumar,2002. *The Archaeology of Megaliths in India:1947-1997*, in *Indian Archaeology in Retrospect*, (S.Settar and R.Korisettar Eds.), New Delhi:Manohar Publishers.Vol.1:313-52&479-81

Moorti, U.S. 1994. *Megalithic Culture of South India: Socio Economic Perspectives*. Varanasi: Ganga Kaveri Publishing House.

Narsimhaiah, B. 1980. *Neolithic and Megalithic Cultures in Tamilandu*. Delhi: Sandeep Prakasan.

Rao, K. P. 1988. *Deccan Megaliths*. Delhi: Sandeep Prakashan.

Renfrew, Colin. 1989. *Archaeology and Language: Puzzle of Indo European Origins*. London: Penguin Books.

Roy, T.N. 1983. *The Ganges Civilization: A Critical Study of the PGW and NBPW Periods of Ganga Plains of India*. New Delhi: Ramanand Vidya Bhavan.

Sinha, B.P. 1968. *Potteries in Ancient India*. Patna: University Press.

Tripathi, Vibha. 1976. *The Painted Grey Ware: an Iron Age Culture of Northern India*. Delhi: Concept Publishing House.

Tripathi, Vibha. 2008. *History of Iron Technology in India (from Beginning to Pre-Modern Times)*. New Delhi: Rupa and Infinity Foundation

Arc 405: HISTORICAL ARCHAEOLOGY OF INDIA

Course objectives

The objective of this course is to learn about the archaeology of the Historical period. Evidence from the excavated sites is emphasized in this course.

Course outcomes

Students become familiar with the excavations from the historical period and their contribution to our understanding of this period.

- Unit 1 Historical Archaeology in India 5 hrs
- a. Concept and Development of historical archaeology
 - b. Significance of Archaeological Record (Excavations & Excavated materials, Art & architecture, Inscriptional & Numismatic records, interface between Archaeology & Literature)
- Unit 2 Archaeology of Urbanization processes in historical period 10 hrs
- a. Formation phase
 - b. Mature phase
 - c. Late phase
- Unit 3 Regional cultural sequences of India (6th century B.C.E. to 12th century C.E.). 10 hrs
- a. North/North West- Swat valley, Sindh, Punjab, Ganga-yamuna Doab
 - b. Western India (Gujarat, Rajasthan)
 - c. Central India and Deccan (M. P., Chhattisgarh, Maharashtra and region north of river Krishna of A.P and Karnataka)
 - d. South India (south of river Krishna)
 - e. Eastern India (Bihar, Jharkhand, Orissa, West Bengal)
- Unit 4 Archaeology of the Gupta Vakataka Period (3rd century C.E. to 6th century C.E.) 8 hrs
- a. Archaeology of the Post Gupta period (6th century C.E. to 12th century C.E.)
 - i. Northern India: sites belonging to the Vardhana, Pratiharas, Kalachuries, Palas and other dynasties.
 - ii. Deccan and South India: sites belonging to the Early Chalukyas, Pallavas, Rashtrakutas, Later Chalukyas and other dynasties.

Unit 5 Major excavated sites

12 hrs

Taxila, Sonkh, Rugar, Hastinapur, Atranjikhara, Kausambi, Pataliputra, Sisupalgarh, Maheshwar-Navdatoli, Mansar, Sanghol, Shirpur, Malhar, Nevasa, Bhokardan, Adam, Pauni, Bhon, Paturda, Kholapur, Satanikota, Dhulikata, Kotalingal, Nagarjunkonda, Amaravati, Sannati, Kanganhalli, Arikamedu, Kaveripattanam, Tamluk, Chandraketugarh, Nalanda, Ratnagiri, Hampi, Daulatabad.

Recommended Readings :

Andren, Anders. 1998. *Between artifacts and texts*. New York: Plenum Press.

Allchin, R. 1989. City and State formation in Early Historic South Asia. *South Asian Studies* 5:1 16.

Allchin R. 1989. Patterns of city formation in early historic South Asia. *South Asian Studies* 6:163 174.

Allchin, R. 1995. *The Archaeology of Early Historic South Asia The Emergence of Cities and States*. Cambridge University Press.

Chattopadhyaya 1985. *Aspects of Rural Settlements and Rural Society in Early Medieval India*. Calcutta:

Chattopadhyaya 1974. Trade and Urban Centres in Early Medieval North India. *The Indian Historical Review* 1, No. 2

Chattopadhyaya 1976. Origin of the Rajputs: The Political Economical and Social Processes in Early Medieval Rajasthan. *The Indian Historical Review* 3, No. 1.

Deotare, B. C. 2007. Preliminary report on the Excavations at Bhon and Paturda, Buldana District, Maharashtra. *Bulletin of the Deccan College Post-graduate and Research Institute* 64-65:87-105

Dhavalikar, M.K. 1999. *Historical Archaeology of India*. New Delhi: Books and Books.

Dymond, D.P. 1974. *Archaeology and History: A Plea for Reconciliation*. London: Thames and Hudson.

Ghosh, A. 1973. *City in Early Historical India*. Simla: Indian Institute for Advanced Studies.

Inder, R. 1981. Hierarchies of Kings in Early Medieval India. *Contributions to Indian Sociology*, New Series Vol. No. 15.

Jha, D. N. 1987. *Feudal Social Formation in Early India Delhi*.

Lahiri, Nayanjot and others. 2002. Historical archaeology of India: an outline of the work of the Archaeological Survey of India, in S. Settar and R. Korisetar (ed.) *Indian Archaeology in Retrospect: Archaeology and Historiography*, pp.71 115. New Delhi: ICHR and Manohar.

Lal, Makhan 1984. *Settlement History and the Rise of Civilization in the Ganga Yamuna Doab*. New Delhi: B.R. Publishing House.

- Mate, M.S. and T.V. Pathy. 1992. Daulatabad Excavations. Pune: Deccan College.
- Mehta, R.N. 1979. Medieval Archaeology. Delhi: Ajanta Publications
- Rajan, K. 1997. Archaeological Gazetteer of Tamil Nadu. Thanjavur: Manoo Pathipakkam
- Ramchandran, K. S. 1980. Archaeology of South India, Tamil Nadu. Delhi: Sandeep Prakashan.
- Ray, Amita and S. Mukherjee (ed.) 1990. Historical Archaeology of India. New Delhi: Books and Books.
- Roy, T.N. 1983. The Ganges Civilization: a Critical Study of the PGW and NBPW Periods of the Ganga Plains of India. New Delhi: Ramanand Vidya Bhavan.
- Schuyler, R.L. 1978 Historical Archaeology: A Guide to Substantive and Theoretical Contributions. New York: Baywood Publishing Company.
- Sarma, I. K. 1988. Studies in Early Buddhist Monuments and Brahmi Inscription of Andhradesa. Nagpur: Datsons
- Sastry, P. V. P. 2000. Coins and Economic System in Medieval Andhra. In South Indian Archaeology, Edt. by G. Kamalakar. Delhi: Bharatiya Kala Prakashan
- Sharma, R.S. 1987 Urban Decay in India 300 to 1000 A.D). New Delhi: Munshiram Manoharlal.
- Sharma, R.S. 1985 Material Culture and Social Formations in Ancient India. New Delhi: Macmillian.
- Sharma, Y.D.1953 Exploration of Historical Sites. Ancient India 9:116 169.
- Shastri, A. M. 1997. Vakatakas Sources and History. New Delhi: Aryan Books International.
- South, S. 1977 Method and Theory in Historical Archaeology. New York: Academic Press.
- Tandon, P. N. edt. 1978, Kannauj: Archaeology and Art. Kannauj: Archaeological Museum, Kannauj, India.
- Tripathi, R.S. 1937. History of Kannauj. Banares: Indian Books Shop.
- Tripathi V. 1976 The Painted Grey Ware: An Iron Age Culture of Northern India. Delhi: Concept Publishing House.

Arc 406: ANCIENT TECHNOLOGY AND ARCHAEOLOGICAL CHEMISTRY

Course objectives

In this course students are introduced to archaeological chemistry and its contribution to understanding ancient technology, sourcing of materials, conservation and preservation of archaeological material, palaeodietary and palaeoenvironmental studies among others.

Course outcomes

Students learn about the scope of archaeological chemistry along with some case studies based on work at Deccan College.

Unit 1	2 hrs
Chemical methods used in the study of archaeological materials	
Unit 2	6 hrs
Development of ancient metallurgy with special emphasis on iron, copper, gold, silver, zinc	
Unit 3	10 hrs
Study of ancient technology of production of pottery and glass	
Unit 4	6 hrs
Provenance studies in archaeology by the following chemical and physical methods: neutron activation, atomic absorption spectrophotometry, ICPES, X ray fluorescence, x ray diffraction and optical microscopy.	
Unit 5	3 hrs
Geochemical survey of archaeological sites	
Unit 6	6 hrs
Conservation and preservation of archaeological materials	
Unit 7	6 hrs
Palaeodietary and Palaeoenvironmental studies by chemical analysis	
Unit 8	6 hrs
Relative dating of bones by fluorine, uranium and nitrogen	

Recommended Readings

- Agrawal. O.P. 2007. Essentials of Conservation and Museology. Delhi: Sundeep Prakashan.
- Deotare, B.C., A. Kshirsagar and V.D.Gogte. 1988. Archaeo Chemistry : A Study of soils, bones and pottery, Chapter 16, Excavations at Inamgaon, Vol. 1,(Sankalia H.D., Dhavalikar M.K. and Ansari Z.D. Eds.),p.963 990, Deccan College Post Graduate and Research Institute, Pune, India.
- Goeffer, Z. 1980. Archaeological Chemistry, John Wiley: New York
- George (Rip) Rapp 2009. Archaeomineralogy. 2nd Edition. Heidelberg: Springer.
- J. B. Lambert. 1997. Traces of the Past: Unraveling the Secrets of Archaeology Through Chemistry, Addison-Wesley, Reading, Massachusetts, 1997.
- Goffer, Ziv. 2008. Archaeological Chemistry. 2nd Edition.
- Leng, Melanie J. (Ed.) 2006. Isotopes in Palaeoenvironmental Research. Volume 10. Springer. 307 pp.
- Gogte, V.D. 1982. Megalithic Iron Smelting at Naikund, in Excavations at Naikund, (Deo S.B.and Jamkhedkar A.P. Eds.), pp.52 59, Department of Archaeology and Museums, Government of Maharashtra, Bombay, India.
- Gogte, V.D. 1997. The Chandraketugarh Tamluk Region of Bengal: Source of the Early Historic Rouletted Ware from India and Southeast Asia, Man and Environment, XXII (1) 69 85.
- Gogte, V.D. 2000. Indo Arabian Maritime Contacts during the Bronze Age: Scientific Study of pottery from Ras al Junayz (Oman), Adumatu, Issue no.2 (July), 7 14.
- Gogte, V.D. and A.Kshirsagar. 1987. Chalcolithic Diet : Trace Elemental Analysis of Human bones, Chapter 17, Excavations at Inamgaon, Vol. 1, (Sankalia H.D., Dhavalikar M.K. and Ansari Z.D. Eds.),p.991 1000, Deccan College Post Graduate and Research Institute, Pune, India.
- Hegde, K.T.M., Craddock, P.T. and V.H. Sonavane. 1986. Zinc Distillation in India, the 24th International Symposium Proceedings, (Olin, J. Ed.). Washington: Smithsonian Institution.
- Joshi, R.V. and A. Kshirsagar. 1986. Chemical Studies of Archaeological Bones from India: Fluorine and Fossilization Process. Pune: Deccan College.
- Joshi, R.V. and B.C. Deotare. 1983. Chemical Analysis of Archaeological Deposits From India. Pune: Deccan College.
- Minc, L.D. and R.J. Sherman 2011. Assessing natural clay composition in the valley of Oaxaca as a basis for ceramic provenance studies. Archaeometry 53 (2), 285-328.
- Pate, Donald 1994. Bone Chemistry and Palaeodiet. Journal of Archaeological Method and Theory 1 (2), 161-209.
- Pollard, A.M. 2008. Archaeological Chemistry. RSC Publishing. 2nd Ed.

Plenderleith, H.J. 1971. *The Conservation of Antiquities and Works of Art*, London: Oxford University Press.

Rye, O.S. 1981. *Pottery Technology*, Washington: Taraxacum

Spoto, Giuseppe 2003. *Chemical methods in Archaeology*. In Kirk-Othmer *Encyclopaedia of Chemical Technology*. John Wiley & Sons.

Tite, M.S. 1972. *Methods of Physical Examination in Archaeology*, London: Seminar Press.

Tressuad, Alain. 2007. *Fluorine and the Environment (Agrochemicals, Archaeology, Green Chemistry and Water)*, *Advances in Fluorine Science* 2, N.Y.: Elsevier.

Tylecote, R.F. 1982. *Metallurgy in Archaeology*, London: E. Arnold.

Arc 407: QUANTITATIVE METHODS AND INFORMATION SCIENCE

Course objectives

The objective of this course is to introduce basic statistical methods and GIS to archaeology students.

Course outcomes

Students are familiarized with some computer and GIS applications and basic statistical methods.

Unit 1 Computing and Computers Fundamentals 4 hrs

- a. Information Science: Development and scope
- b. Readymade software and Programming

Unit 2 Managing Information 6 hrs

- a. Excavation and Computers
- b. Archaeological Database management
 - i. What is database?
 - ii. What is archaeological data?
 - iii. Recording artefacts
 - iv. Analyzing data
 - v. Data Security

Unit 3 Digital Landscapes 5 hrs

- a. GIS
- b. Remote Sensing
- c. Digital Image Processing
- d. Modelling and Simulation
- e. Maps and GPS based cartography

Unit 4 Preserving and managing evidence of the past 4 hrs

- a. CRM and increasing computer usage
- b. CRM at the regional level
- c. Museums, computers and archaeological collections

Unit 5 Communicating Archaeology	3 hrs
a. Interactive multimedia and the Internet	
b. Use of web resources for research	
c. E-Publication	
Unit 6 Place of quantitative methods in archaeological research	4 hrs
a. Historical perspective	
b. Importance of quantitative methods	
c. Archaeological theory and quantitative thinking	
d. Validity and reliability of quantitative analysis	
Unit 7 Basic Statistics	8 hrs
a. Classification and tabulation of data	
b. Visual methods	
c. Measures of central tendency	
d. Concept of variability	
e. Measures of association	
Unit 8 Relationship between variables	4 hrs
a. Chi square test and contingency tables	
b. Ranking and Correlation tests	
c. Regression Analysis	
Unit 9 Sampling techniques	4 hrs
a. Sample and population,	
b. Probability and non-probability methods	
c. Sampling errors	
Unit 10 Advanced Statistical Methods	3 hrs
a. Multivariate methods	
b. Comparing samples	
c. Analysis of variance	

References

- Anderssen, J., Madsen T. and Scollar I. (Eds). 1993. *Computing the Past: Computer Applications and Quantitative Methods in Archaeology*, CAA 92. Aarhus: Aarhus University Press.
- Sushama G. Deo and P.P. Joglekar. 2008-09. Use of GPS-based field methods: An Introduction, *Bulletin of the Deccan College Research Institute* 68-69: 135-144.
- Drennan R.D. 2009. *Statistics for Archaeologists : A Commonsense Approach*. New York : Plenum Press.
- Lock Gary and J. Moffett (eds.) 1992. *Computer Applications and Quantitative Methods in Archaeology 1991*. London : BAR International Series
- Lock Garry and Zoran Stancic (eds.) 1995. *Archaeology and Geographical Information Systems*. London : Taylor & Francis
- Lock, G. (2003). *Using computers in archaeology: Towards virtual pasts*. London and New York, Routledge.
- Reilly, P. and S. Rahtz. 1992 *Archaeology and the Information Age: A Global Perspective*. London and New York: Routledge.
- Richards, J. D. (1998). Recent Trends in Computer Applications in Archaeology. *Journal of Archaeological Research* 6(4): 331-382.
- Shennan, S. 1988 *Quantifying Archaeology*. Edinburgh: University Press.
- Sinha, P. 2009. *Cogitating Prehistoric Archaeological Landscape With Pattern Recognition, Computer Applications to Archaeology* Williamsburg, Virginia, USA. March 22-26, 2009.
- VanPool, T. L. and R. D. Leonard (2010). *Quantitative Analysis in Archaeology*, John Wiley & Sons.

Arc 408: ENVIRONMENTAL ARCHAEOLOGY (GEOARCHAEOLOGY)

Course objectives

The objective of this course is to introduce students to the scope and methods of geoarchaeology.

Course outcomes

Students learn about the different natural contexts and processes affecting archaeological sites.

Unit 1 4 hrs
Definition and concepts of Geoarchaeology

Unit 2 Geomorphological contexts of Archaeological sites 8 hrs

a. Identifying the Depositional Processes

- i. Fluvial
- ii. Aeolian
- iii. Littoral
- iv. Cave
- v. Tephra
- vi. Lacustrine
- vii. Colluvial
- viii. Anthropogenic sediments

b. Post depositional processes

- i. Ferricrete and Calcrete formation
- ii. Rubification
- iii. Weathering and soil formation
- iv. Bioturbation

Unit 3 Methods 8 hrs

- a. Field techniques
- b. Laboratory techniques

Unit 4 Cultural ecology	8 hrs
a. Human responses to changing environment	
b. Origin, growth and decay of cultures	
Unit 5 Human Impact on Landscape	3 hrs
a. Fire	
b. Agriculture	
c. Urbanization	
Unit 6 Regional Quaternary Studies	10 hrs
a. India	
b. Other countries	
Unit 7 Quaternary Environmental changes: Methods and Case Studies	4 hrs
a. Palaeolandscape	
b. Palaeoclimate	
c. Sea level changes	

Recommended Reading

Basic Texts:

Goldberg, P., and R. I. Macphail. 2006. *Practical and Theoretical Geoarchaeology*. Oxford: Blackwell.

Holliday, Vance T.. 2004. *Soils in Archaeological Research*. Oxford: Oxford University Press.

Additional Readings

Abeyratne, M., N. A. Spooner, R. Grun, and J. M. Head. 1997. Multidating studies of Batadomba Cave, Sri Lanka. *Quaternary Science Reviews* 16:243-255.

Bacon, A.-M., F. Demeter, P. Durringer, C. Helm, M. Bano, L. Vu The, N. T. Kim Thuy, P. O. Antoine, B. Thi Mai, N. T. M. Huong, Y. Dodo, F. Chabaux, and S. Rihs. 2008. The Late Pleistocene Duoi U'Oi cave in northern Vietnam: palaeontology, sedimentology, taphonomy and palaeoenvironments. *Quaternary Science Reviews* 27:1627-1654.

Barker, G. 2005. The archaeology of foraging and farming at Niah Cave, Sarawak. *Asian Perspectives* 44:90-106.

Barker, G., H. Barton, M. Bird, P. Daly, I. Datan, A. Dykes, L. Farr, D. Gilbertson, B.

Harrisson, C. Hunj, T. Higham, L. Kealhofer, J. Krigbaum, H. Lewis, S. McLaren, V. Paz, A. Pike, P. Piper, B. Pyatt, R. Rabett, T. Reynolds, J. Rose, G. Rushworth, M. Stephens, C. Stringer, J. Thompson, and C. S. M. Turney. 2007 The 'human revolution' in lowland tropical Southeast Asia: the antiquity and behavior of anatomically modern humans at Niah Cave (Sarawak, Borneo). *Journal of Human Evolution* 52 243-261.

Barton, H. 2005. The case for rainforest foragers: the starch record at Niah Cave, Sarawak. *Asian Perspectives* 44:56-72.

Bettis, E. A. I., D. W. Benn, and E. R. Hajic. 2008. Landscape evolution, alluvial, environmental history, and the archaeological record of the Upper Mississippi River Valley. *Geomorphology* 101:362-377.

Bettis III, E. A., A. K. Milius, S. J. Carpenter, R. Larick, Y. Zaim, Y. Rizal, R. L. Ciochon, S. A. Tassier-Surine, D. Murray, Suminto, and S. Bronto. 2009. Way out of Africa: Early Pleistocene paleoenvironments inhabited by *Homo erectus* in Sangiran, Java. *Journal of Human Evolution* 56:11-24.

Boyd, W. E. 2008. Social change in late Holocene mainland SE Asia: A response to gradual climate change or a critical climatic event? *Quaternary International*.

Bridgland, D. R., and R. Westaway. 2008. Climatically controlled river terrace staircases: A worldwide Quaternary phenomenon. *Geomorphology* 98:285-315.

Brooks, N. 2004 Beyond collapse: the role of climatic desiccation in the emergence of complex societies in the middle Holocene, in *Environmental Catastrophes in Mauritania, the Desert and the Coast*. Abstract Volume and Field Guide. Mauritania, 4-18 January 2004. First Joint Meeting of ICSU Dark Nature and IGCP 490. Edited by S. Leroy and P. Costa, pp. 26-30.

Cullen, H. M., P. B. deMenocal, S. Hemming, G. Hemming, F. H. Brown, T. Guilderson, and F. Sirocko. 2000 Climate change and the collapse of the Akkadian empire. *Geology* 28:379-382.

de Lumley, M.-A., J.-M. Bardintzeff, P. Bienvenu, J.-B. Bilot, G. Flamenbaum, C. Guy, M. Jullien, H. de Lumley, J.-P. Nabot, C. Perrenoud, O. Provitina, and M. Tourasse. 2008. Impact probable du volcanisme sur le décès des Hominidés de Dmanissi. *Comptes Rendus Palevol* 7:61-79.

Hoffecker, J. F., V. T. Holliday, M. V. Anikovich, A. A. Sinitsyn, V. V. Popov, S. N. Lisitsyn, G. M. Levkovskaya, G. A. Pospelova, S. L. Forman, and B. Giaccio. 2008. From the Bay of Naples to the River Don: the Campanian Ignimbrite eruption and the Middle to Upper Paleolithic transition in Eastern Europe. *Journal of Human Evolution* 55:858-870.

Huffman, F. O., J. D. Vos, W. B. Aart, and F. Aziz. 2010. Provenience Reassessment of the 1931–1933 Ngandong *Homo erectus* (Java), Confirmation of the Bone-Bed Origin Reported by the Discoverers. *PaleoAnthropology* 2010:1-60.

Kealhofer, L., P. Grave, H. Genz, and B. Marsh. 2009. Post-Collapse: the re-emergence of polity in Iron age Bogazkoy, Central Anatolia. *Oxford Journal of Archaeology* 28:275-300.

Kourampas, N., I. A. Simpson, N. Perera, S. U. Deraniyagala, and W. H. Wijeyapala. 2009. Rockshelter sedimentation in a dynamic tropical landscape: Late Pleistocene–Early Holocene archaeological deposits in Kitulgala Beli-lena, southwestern Sri Lanka. *Geoarchaeology* 24:677-714.

Marriner, N., and C. Morhange. 2007. Geoscience of ancient Mediterranean harbours. *Earth-Science Reviews* 80:137-194.

O'Sullivan, P. B. 2008. The 'collapse' of civilizations: what palaeoenvironmental reconstruction cannot tell us, but anthropology can. *The Holocene* 18.

Pappu, R. S. 1995. The Contribution of Earth Science to the Development of Indian Archaeology, in *Quaternary Environments and Geoarchaeology of India*, Edited by S. Wadia, R. Korisettar, and V. S. Kale, pp. 414-434. Bangalore: *Memoirs of the Geological Society of India* 32.

Pollard, A. M. 1999. *Geoarchaeology: an introduction*. Geological Society, London, *Special Publications* 165:7-14.

Tainter, J. A. 1988. *The Collapse of Complex Societies*. Cambridge: Cambridge University Press.

2005. Dark Ages in archaeology/systems collapse, in *Archaeology: the key concepts*. Edited by C. Renfrew and P. G. Bahn, pp. 40-. London: Routledge.

Weiss, H., and R. S. Bradley. 2001. What Drives Societal Collapse? *Science* 291:609-61.

Weiss, H., M. A. Courty, W. Wetterstrom, G. Guichard, F. Senior, R. H. Meadow, and A. Curnow. 1993. Genesis and Collapse of Third Millennium North Mesopotamian Civilization. *Science* 261:995-1004.

Westaway, K. E., M. J. Morwood, R. G. Roberts, A. D. Rokus, J. X. Zhao, P. Storm, F. Aziz, G. van den Bergh, P. Hadi, Jatmiko, and J. De Vos. 2007. Age and biostratigraphic significance of the Punung Rainforest Fauna, East Java, Indonesia, and implications for Pongo and *Homo*. *Journal of Human Evolution* 53:709-17.

Arc 409 : DISSERTATION

1. A student may opt for writing a Dissertation in lieu of one of the papers for semester IV.
2. The dissertation application form shall be submitted by the student within 30 days of the commencement of teaching for semester III.
3. The application shall be submitted alongwith necessary dissertation fee (non refundable), alongwith a detailed synopsis of his research and concurrence of the research guide. He will be permitted to proceed with the dissertation only after it is approved by the Departmental Committee.
4. The synopsis shall be signed by the student and the research guide and shall consist of:
 - a. Current status of knowledge of the topic of research;
 - b. Aims of proposed research and methodology to be adopted;
 - c. Nature of data to be collected;
 - d. Proposed method of analysis of data;
 - e. Expected contribution to the knowledge of the subject; and
 - f. A detailed bibliography of the literature on the topic selected.
5. Every student, who offers dissertation, shall work under the supervision of a regular teaching faculty member of the Institute. The topic of the dissertation and the supervisor shall be chosen by the student in consultation with the Departmental Committee. If a candidate's proposed work is of an interdisciplinary nature, one more internal supervisor from the related discipline may be appointed.
6. A student shall complete his dissertation on the topic and under the supervision of a guide approved by the Departmental Committee. He shall not be permitted to change the topic and/or guide once approved by the Departmental Committee.
7. One copy of the dissertation to be submitted to the Academic Section. The cover of the dissertation shall mention the topic of the dissertation and shall contain the following matter:

The cover of the dissertation shall mention the topic of the dissertation and shall contain the following matter:

Dissertation submitted to Deccan College
in partial fulfillment of the Degree
of Master of Arts .
8. The student shall prepare two copies of the dissertation. He shall submit one copy of the dissertation to the Academic Section and shall retain the second copy with himself to be submitted, only if required later on by the Academic Section.
9. The dissertation shall have the following certificate from the research guide:

CERTIFICATE

CERTIFIED that the work incorporated in this thesis (entitled) submitted by Shri/ Smt. (signed hereunder) was carried out by the student under my supervision. Such material as has been obtained from other sources has been duly acknowledged in the dissertation.

(Sign. of the student)

(Sign. of research guide)

10. Revaluation of the dissertation shall be done only when a student gets 40 and above marks.
11. A student who fails to get the minimum required marks (i.e. 40) shall revise and resubmit it for evaluation as per the comments of the examiner. Revised dissertation shall be submitted for evaluation at any semester end examination.
12. The dissertation shall be submitted to the Academic Section. It shall be submitted not later than 30th April of the year in which the student takes admission to semester IV.

Arc 410 : OPEN PAPER

Course Objective:

This course allows students to undertake a small research topic under the guidance of a staff member.

Course outcome:

Students learn how to do research and contribute new research findings.

Any faculty member may offer a paper on any topic of current academic interest, with the concurrence of the Departmental Committee. Notice of this course will be given in advance.

POST-GRADUATE DIPLOMA COURSE

Arc 501: PRINCIPLES OF ARCHAEOLOGY

Course objectives :

The definition, aims and scope of archaeology and its development as a discipline is introduced to the students. The nature of the archaeological record and the unique role of science in archaeology is explained. Legislation related to archaeology and the role of archaeology in heritage management are also discussed in this course

Course outcomes :

Students gain a basic understanding of the nature, and development of archaeology as a discipline.

Unit 1 Definition, Aims and Scope of Archaeology	5 hrs
a. Definition of archaeology	
b. Archaeological Methods	
c. Key Archaeological Findings and their significance	
d. Overlap and Distinction between Archaeology, History, Anthropology, Earth Sciences	
e. Prehistoric Archaeology, Protohistoric Archaeology, Historical Archaeology differences in approach and nature of the evidence	
Unit 2 History of Archaeological Science	2 hrs
a. Developments in Europe and North America	
b. Developments in India	
Unit 3 The Archaeological Record:	4 hrs
a. sites	
b. features,	
c. artefacts,	
d. ecofacts	
Unit 4 Site formation processes	4 hrs
a. Geological processes	
b. Cultural processes	
c. Case Studies	
Unit 5 Role of natural and social sciences in Archaeology	5 hrs
a. Archaeological chemistry	
b. Archaeozoology	
c. Biological Anthropology	
d. GeoarchaeologyPalaeontology	
e. Palaeontology	

Unit 6 The Quaternary 2 hrs

- a. Quaternary Environments, Glacial and Interglacial climate
- b. Oxygen Isotope Stratigraphy

Unit 7 Dating methods 5hrs

- a. Relative Methods: Litho and bio stratigraphy, weathering, soil formation
- b. Correlation Methods: Palaeoclimate, Oxygen Isotope Stratigraphy
- c. Absolute Methods: Radiocarbon, Cosmogenic radiation, Luminescence, Electron Spin Resonance, Amino Acid Racemation, Ar/Ar, K/Ar, Th/U

Unit 6 Fossil Hominins 5 hrs

- a. Australopithecus
- b. Homo erectus
- c. Archaic Hominins
- d. Modern Humans

Unit 7 Human Cultural Evolution 4 hrs

- a. The earliest stone tools in Africa--The Oldowan
- b. The earliest stone tools outside Africa--Dmanissi, European Mode 1, Nihewan Basin, Large Flake Acheulian
- c. Middle and Upper Palaeolithic and contemporary technologies after the Acheulian

Unit 8 Archaeological Theory 5 hrs

- a. The new Archaeology
- b. Archaeology as a Science
- c. Middle Range Theory, Ethnoarchaeology & Material Cultural studies
- d. Culture and Processes
- e. Interpretive and Post-Processual Archaeology

Unit 9 Archaeology and Public Education 2 hrs

Unit 10 Archaeological Legislation 2 hrs

Recommended Readings

Bell, J. 1994. *Reconstructing Prehistory: Scientific Method in Archaeology*. Philadelphia: Temple University.

Binford, L.R. 1983. *In Pursuit of the Past: Decoding the Archaeological Record*. London: Thames and Hudson.

Binford, L. R. 1973. *An Archaeological Perspective*. New York: Seminar Press.

Binford, L.R. 1983. *Working at Archaeology*. New York: Academic Press.

- Binford, L.R. 1989. *Debating Archaeology*. New York: Academic Press.
- Chakrabarti, D.K. 1988. *A History of Indian Archaeology: From the Beginning to 1947*. New Delhi: Munshiram Manoharlal.
- Childe, V.G. 1956. *Piecing Together the Past: The Interpretation of Archaeological Data*. London: Routledge and Kegan Paul.
- Clark, J.G.D. 1939. *Archaeology and Society*. London: Methuen.
- Clark, J.G.D. 1982. *The Identity of Man*. London: Methuen.
- Clarke, D.L. 1963. *Archaeology: the Loss of Innocence*. *Antiquity* 47:6 8.
- Daniel, Glyn E. 1975. *150 years of Archaeology*. London: Duckworth.
- Daniel, Glyn, E. 1981. *A Short History of Archaeology*. London: Thames and Hudson.
- Dunnell, R.C. 1971. *Systematics in Prehistory*. New York: Free Press.
- Embree, Lester 1987. *Archaeology: the Most Basic Science of All* *Antiquity* 61:75 78.
- Fagan, B. 1988. *In the Beginning: An Introduction to Archaeology*. Glenview (Illinois): Scott, Foresman and Company.
- Hayden, Brian 1993. *Archaeology: The Science of Once and Future Things*. New York: W.H. Freeman and Company.
- Hodder, I. 1986. *Reading the Past: Current Approaches to Interpretation in Archaeology*. 2nd ed. Cambridge: Cambridge University Press.
- Hodder, Ian. 1999. *The Archaeological Process: An Introduction*. Oxford: Blackwell Publishers.
- Hole, F. and R. F. Heizer 1973. *Introduction to Prehistoric Archaeology*. New York: Holt, Reinhart and Winston.
- Knudson, S.J. 1978. *Culture in Retrospect*. Chicago: Rand McNally.
- Kuznar, L.A. 1997. *Reclaiming Scientific Anthropology*. Walnut Creek, California: Altamira Press.
- Paddayya, K. 1979. *Palaeoethnography vis avis the Stone Age Cultures of India: Some Methodological considerations*. *Bulletin of the Deccan College Post Graduate & Research Institute* 38:63 90.
- Renfrew, C. and P. Bahn 1991 *Archaeology: Theories and Methods and Practice*. London: Thames and Hudson.
- Spaulding, A.C. 1960 *The Dimensions of Archaeology* in N. Hammond (ed.) *Readings in Archaeology and Physical Anthropology*.
- Trigger, Bruce. 1989 *A History of Archaeological Thought*. Cambridge: Cambridge University Press

Arc 502: ARCHAEOLOGICAL SCIENCE

Course objectives :

In this course students are introduced to the various scientific disciplines used for archaeological research. They complete a number of practical in the various laboratories in the Archaeology Department.

Course outcomes :

Students are familiarized with basic descriptive technique and preliminary study of various categories of objects studied by archaeologists, such as plant fossils, human remains, rocks and minerals, sediments, map reading.

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|--|-------|
| Unit 1 | 2 hrs |
| Significance of physical and biological sciences in archaeology | |
| Unit 2. Archaeobotany and Palynology | 8 hrs |
| a. Introduction to different types of plant fossils found in archaeological contexts. | |
| b. Study of commonly retrieved representative macro botanical remains especially cereal and pulses such as rice, wheat, barley, lentil/pea etc. with the help of suitable modern and ancient specimens. | |
| c. Study of common representative micro botanical remains, especially pollen belonging to grasses, sedges and cheno amaranthus, papilionaceae, compositae etc. and spores of pteridophytes with the help of suitable modern and ancient specimens. | |
| Unit 3 Animal sciences | 8 hrs |
| a. Systematics and classification of animals | |
| b. Introduction to Palaeontology. | |
| c. Fossilization process | |
| d. Fossil preparation techniques | |
| e. Introduction to archaeozoology | |
| f. Study of complete skeleton of domestic animals | |
| g. Axial skeleton b) Appendicular skeleton | |
| h. Comparative osteology of select domestic animals (Perissodactyla, Artiodactyla, and Carnivora: Canis familiaris. | |
| Unit 4 Biological Anthropology | 4 hrs |
| a. Interpretations in Osteobiography | |
| b. Identifications of human bones | |

- c. Methods of cleaning and reconstruction
- d. Age sex analysis
- e. Pathology and demography

Unit 5 Archaeological Chemistry 8 hrs

- a. Preliminary study of soils and sediments, pH, colour, texture, organic carbon, calcium carbonate and phosphate contents.
- b. Chemical conservation and preservation of iron and copper objects.

Unit 6 Earth Sciences 12 hrs

- a. Properties used in identification of rocks and minerals.
- b. Field description of Quaternary sediments stratigraphy, sedimentary structures, textures, colour, shape, rounding, weathering, lithology.
- c. Toposheet reading and interpretation
- d. Introduction to GIS
- e. Basics of remote sensing

Unit 7 Archaeological computing 3 hrs

- a. Introduction to MS OFFICE
- b. Database techniques
- c. Internet and web browsing
- d. Program writing to handle archaeological data

Recommended Reading

Badam, G.L. 1979. Pleistocene Fauna of India, Pune: Deccan College.

Baker, J. and D. Brothwell. 1980. Animal Diseases and Archaeology, Academic Press: London

Bass, W.M. 1981. Human Osteology: A laboratory and field manual of the Human skeleton, 2nd edition, Columbia: Missouri Archaeological Society.

Biswas, A. K.. 2005. Science in Archaeology and Archaeological materials. New Delhi: D.K. PrintWorld (P) Ltd.

Bone, J.F. 1979. Animal Anatomy and Physiology, Reston: Reston Publishing Co.

Black, C.A., Evans, D.D., White, J.L., Ensminger, L.E. and F.E. Clark (Eds.). 1965. Methods of Soil Analysis, part I Physical and Mineralogical properties and part II Chemical and Microbiological properties, American Society of Agronomy, Inc. Madison, Wisconsin, USA

Brothwell, D. and E. Higgs (Eds.). 1969. Science in Archaeology, London : Thames and Hudson.

Brothwell, D. and A.M. Pollard. 2001. Handbook of Archaeological Sciences, New York: John Wiley and Sons.

- Cornwall, I.W. 1974. *Bones for Archaeologists*, (revised edition), London : L.M. Dent and Sons.
- Deo, S.G. 2000 01. *Computer Applications in Archaeology: A review of work done at Deccan College*, Bulletin of Deccan College Postgraduate and Research Institute, Vol. 60 61: 137 142.
- Deotare, B.C. 1995. *Pollen recovery from minerogenic sediments : A methodological approach*. *Man and Environment*, XX(2):101 105.
- Erdtman, G. 1969. *Hand book of Palynology*, New York: Hafner.
- Greig, James. 1989. *Handbook for Archaeologists No.4: Archaeobotany*, European Science Foundation, Strasbourg.
- Joshi, R.V. and B.C. Deotare. 1983. *Chemical Analysis of Archaeological Deposits from India*. Pune: Deccan College.
- Kajale, M.D. 1991. *Current status of Indian Palaeoethnobotany : Introduced and indigenous food plants with a discussion of the historical development of Indian Agriculture and agricultural system in general*, in *New Light on Early Farming*, Jane Renfrew (Ed.), Edinburgh: Edinburge University press, pp.155 190.
- Leiggi, Patrick and Peter May (Eds.). 1994. *Vertebrate Palaeontological Techniques*, Vol. 1, Cambridge University Press.
- Moore, P.D., Webb, J. A. and M.E. Collinson. 1992. *Pollen Analysis*, Oxford: Blackwell.
- Pearsall, D. 1989. *Palaeoethnobotany Handbook of Procedures*. London: Academic press.
- Plenderlith, H.J. 1965. *The Conservations of Antiquities and Works of Art*, London: Oxford University press.
- Renfrew, J. 1973. *Palaeoethnobotany*, London: Mathuen and Co.
- Reilly, P. and S. Rathz (Eds.). 1992. *Archaeology and the Information Age*. London: Routledge
- Romer, A.S. 1967. *Vertebrate Paleontology*, Chicago: University of Chicago press.
- Schmid, E. 1972. *Atlas of Animal Bones*. London: Elsevier publishing Co.
- Singh, R. and L.R. Kajia. 1979. *Map Work and Practical Geography*, Allahabad: Central Book Depot.

Arc 503: SOUTH ASIAN PREHISTORY

Course objectives

The nature and scope of prehistory is introduced and the prehistoric evidence of South Asia, from the earliest Lower Palaeolithic to the Mesolithic is taught. The Quaternary environmental change especially in reference to the Indian Subcontinent is presented.

Course outcomes

Students will be familiarized to the basic outline of the Prehistory of South Asia and the changing environments of the Quaternary.

Unit 1 Prehistory: Subject matter, scope and aims	5 hrs
Unit 2 Indian Environments and Quaternary	4 hrs
a. Indian Environment	
b. Sub-Himalayan region	
c. Ganga Plain	
d. Thar Desert	
e. Peninsular India	
f. Coasts and Continental shelves	
Unit 3 Stone tool technology and technology	5 hrs
a. Flakes	
b. Cores	
c. Tools	
Unit 4 Indian Stone Age Sequence:	5 hrs
a. Differing views	
b. comparison to Palaeolithic in Africa, Europe and China	
Unit 4 Large Flake Acheulian	8 hrs
a. Age, nature and significance of the technology	
b. Distribution	
c. Important sites	
d. Variation	

Unit 5 Middle and Upper Palaeolithic 3 hrs

Unit 6 Pleistocene and Holocene Blade technologies 8 hrs

- a. Age, nature and significance of the technology
- b. Distribution
- c. Important sites
- d. Variation

Unit 7 Indian Paleolithic in the global context 3 hrs

- a. Homogeneity and Continuity of the Indian Palaeolithic
- b. Homo erectus and Large Flake Acheulian: Is there a connection
- c. Changing connections through the Quaternary

Unit 8 Ornaments and Rock Art 4 hrs

Recommended Readings

Chakravarty, K. K., and R. G. Bednarik. 1997. *Indian Rock Art in Global Context*. Delhi: Motilal banarsidass & IGRMS.

Gaillard, C., and S. Mishra. 2001. The Lower Palaeolithic in South Asia, in *Origin of Settlements and Chronology of the Paleolithic Cultures in SE Asia*. Edited by F. Semah, C. Falgueres, D. Grimaund-Herve, and A.-M. Semah, pp. 73-92. Semenanjung and Paris.

Gaillard, C., S. Mishra, M. Singh, S. G. Deo, and R. Abbas. 2009. Lower and Early Middle Pleistocene Acheulian in the Indian Sub-Continent. *Quaternary International*.

Gaillard, C., M. Singh, and R. K.K. 2008. Technological analysis of the Acheulian assemblage from Atbarapur in the Siwalik Range (Hoshiarpur district, Punjab). *Man and Environment* 33:1-14.

Henke, W., T. Hardt, and I. Tattersall. Editors. 2006. *Handbook of Paleoanthropology* 3 Vols: Springer.

Merh, S. S., and L. S. Chamyal. 1997. The Quaternary Geology of the Gujarat Alluvial Plains. *Proceedings Indian National Science Academy* 63:1-98.

Mishra, S. 2007. The Indian Lower Palaeolithic. *Bulletin of the Deccan College Postgraduate and Research Institute* 66-67:47-94.

—. 2008. The Lower Palaeolithic: A Review of Recent Findings. *Man and Environment* 33:14-29.

- . 2010. *India and Java: Contrasting Records, Intimate Connections*. Quaternary International.
- Mishra, S., C. Gaillard, S. G. Deo, M. Singh, R. Abbas, and N. Agrawal. 2010. Large Flake Acheulian in India: Implications for understanding lower Pleistocene human dispersals. *Quaternary International*.
- Mishra, S., S. Naik, S. N. Rajaguru, S. Deo, and S. Ghate. 2003. Fluvial Response to Late Quaternary Climatic Change: Case Studies from Upland Western India. *Proceedings of Indian National Science Academy* 69:185-200.
- Mishra, S., M. J. White, P. Beaumont, P. Antoine, D. R. Bridgland, N. Limondin-Lozouet, J. I. Santisteban, D. C. Schreve, A. D. Shaw, F. F. Wenban-Smith, R. W. C. Westaway, and T. S. White. 2007. Fluvial deposits as an archive of early human activity. *Quaternary Science Reviews* 26:2996-3016.
- Misra, V. D. 1997. Lower and Middle Palaeolithic Cultures of Northern Vindhya, in *Indian Prehistory: 1980*. Edited by V. D. Misra and J. N. Pal, pp. 61-74. Allahabad Department of Ancient History, Culture and Archaeology, University of Allahabad.
- . 2005. Mesolithic Cultures in the Middle Ganga Valley, in *River Valley Cultures of India*. Edited by K. K. Chakravarty and G. L. Badam, pp. 39-43. New Delhi: Aryan books International.
- Misra, V. N. 1978. The Acheulian Industry of Rock Shelter III F- 23 at Bhimbetka, Central India. *Australian Archeology* 8:63-106.
- . 1982. Evolution of the Blade Element in the Stone Industries of the Rock Shelter III F-23, Bhimbetka, in *Indian Archeology : New Perspectives*. Edited by R. K. Sharma, pp. 7-13. Delhi Agam Kala Prakashan.
- . 1985a. The Acheulian Succession at Bhimbetka, Central India, in *Recent Advances in Indo-Pacific Prehistory*. Edited by V. N. Misra and P. Bellwood, pp. 35-48. New Delhi: Oxford - IBH.
- . 1985b. Microlithic Industries in India, in *Recent Advances in Indo-Pacific Prehistory*. Edited by V. N. Misra and P. Bellwood, pp. 111-120. New Delhi: Oxford and IBH
- . 1987. Middle Pleistocene Adaptions in India, in *Pleistocene Old World: Regional Perspectives*. Edited by O. Soffer, pp. 99-119. New York: Plenum Press.
- . 1995. Evolution of Environment and Culture in the Rajasthan Desert during the Late Quaternary in *Ancient Peoples and Landscapes*. Edited by J. Eileen, pp. 77-103. Lubbock, Texas: Texas Tech University Press.
- . 2001a. Archaeological Evidence of Early modern Human Occupation in South Asia, in

Humanity from African Naissance to coming Millennia, vol. 223-230. Edited by P. V. Tobias, M. Raath, J. A. Moggi-Cecchi, and G. A. Doyle. Firenze: Firenze University Press.

—. 2001b. Prehistoric Colonization of India. *J. Indian Academy of Sciences (Biosci.)* 26:491-531.

Misra, V. N., and Y. Mathpal. 1979. Rock Art of Bhimbetka Region, Central India. *Man and Environment* 3:27-33.

Misra, V. N., and M. Nagar. 1973. Twenty-five years of Indian Prehistory (1947-1972)--a Review of Research, in *Man and society*. Edited by K. S. Mathur. Lucknow.

Misra, V. N., S. N. Rajaguru, and H. Raghavan. 1988. Late Middle Pleistocene Environment and Acheulian Culture around Didwana, Rajasthan. *Proceedings Indian National Science Academy (A)* 54:425-438.

Mohapatra, G. C. 1990. On the track of early man in western Sub-Himalaya 77th Indian Science Congress, Calcutta Presidential Address section of Anthropology and Archaeology.

—. 1997. Re-identification of Acheulian Element in the Western Sub-Himalayan Lithic Complex in the Light of New Discoveries, in *Indian Prehistory:1980*. Edited by V. D. Misra and J. N. Pal, pp. 43-50. Allahabad: Department of Ancient History, Culture and Archaeology, University of Allahabad.

Neumayer, E. 2010. *Rock Art of India*. Oxford & New Delhi: Oxford University Press.

Paddayya, K. 2007. The Acheulean of Peninsular India with Special Reference to the Hunsgi and Baichbal Valleys of the Lower Deccan in *The Evolution and History of Human Populations in South Asia*. Edited by M. Petraglia and B. Allchin, pp. 97-119. Netherlands: Springer.

—. 2008a. Evolution within the Acheulian in India: A case study from the Hunsgi and Baichbal valleys, Karnataka. *Bulletin of the Deccan College Postgraduate and Research Institute* 66-67:95-111.

—. 2008b. India: Paleolithic Cultures, in *Encyclopedia of Archaeology*. Edited by D. M. Pearsall, pp. 768-791. New York: Elsevier

Paddayya, K., R. Jhaldiyal, and M. D. Petraglia. 2006. The Acheulian quarry at Isampur, Lower Deccan, India, in *Axe Age:Acheulian Tool-making from Quarry to Discard*. Edited by N. Goren Inbar and G. Sharon. London: Equinox Publishing Ltd.

Paddayya, K., and M. Petraglia. 1997. Isampur- An Acheulian Workshop Site in the Hunsgi Valley, Gulbarga District, Karnataka. *Man and Environment* 22:94-100.

Paddayya, K., and M. D. Petraglia. 1996/97. Acheulian Workshop at Isampur, Hunsgi Valley, Karnataka: A Preliminary Report. *Bulletin of Deccan College Post Graduate & Research Institute* 56/57:3-26.

- Pal, J. N. 2002. The Middle Palaeolithic Culture of South Asia, in *Indian Archaeology in Retrospect Prehistory Archaeology of South Asia Vol. I*. Edited by S. Settar and R. Korisettar, pp. 67-83. Delhi: Indian Council of Historical Research and Manohar.
- Pandey, S. K. 1993. *Indian Rock Art*. Delhi: Aryan Books International.
- Pappu, R. S. 2001. *Acheulian culture in peninsular India : an ecological perspective*. New Delhi: D.K. Printworld.
- Pappu, S., Y. Gunnell, M. Taieb, and A. Kumar. 2004. Preliminary report on excavations at the Palaeolithic site of Attirampakkam, Tamil Nadu (1999–2004). *Man and Environment* 29:1-17.
- Pappu, S., and A. Kumar. 2006. Preliminary observations on the Acheulian assemblages from Attirampakkam, Tamil Nadu, in *Axe Age*. Edited by N. Goren and G. Sharon, pp. 155-180. London: Equinox.
- Petraglia, M. 2006. The Indian Acheulian in global perspective, in *Axe Age*. Edited by N. Goren and G. Sharon, pp. 389-414. London: Equinox.
- Petraglia, M. D. 2005. Hominin responses to Pleistocene environmental change in Arabia and South Asia. *Geological Society, London, Special Publications* 247:305-319.
- Petraglia, M. D., and B. Allchin. 2007. Human Evolution and Culture Change in the Indian Subcontinent in *The Evolution and History of Human Populations in South Asia* Edited by M. Petraglia and B. Allchin, pp. 1-20. Netherlands: Springer.
- Petraliga, M. D., M. Haslam, and D. Q. Fuller. 2010. The Southern Dispersal Route and the Spread of Modern Humans along the Indian Ocean Rim: New Hypotheses and Evidence. *Annals of Human Biology*.
- Wadia, S., R. Korisettar, and V. S. Kale. Editors. 1995. *Quaternary Environments and Geoarchaeology of India*. Bangalore: Geological Society of India Memoir 32.

Arc 504: EPIGRAPHICAL RECORDS OF ANCIENT INDIA

Course Objectives

The objective of this course is to learn about the ancient scripts and key epigraphical records from the Indian Subcontinent.

Course outcomes

In this course students learn about the development of modern Indian scripts from the ancient scripts. They become familiar with the most important epigraphical records.

Unit 1 Introduction to Epigraphy and Palaeography 5 hrs

- a. Epigraphy and Palaeography: Terminology, Scope and Importance in Reconstruction of History
- b. Historiography of Epigraphic Studies
- c. Antiquity of Writing in Ancient India
- d. Materials and Techniques of Writing
- e. Theories of Origin of Brahmi and Kharoshti Scripts
- f. Brahmi and Kharoshti Scripts: Orthography and Decipherment of Alphabets and Numerals

Unit 2 Edicts of Ashoka 10 hrs

- a. Nature, Geographic Distribution, Categories and Language
- b. Decipherment of Major Rock Edicts (Girnar Version) Nos. I, II, IV, VI, IX and XII

Unit 3 Calendrical Systems in Ancient India 8 hrs

- a. Dates and Chronograms
- b. Eras: Vikrama, Shaka and Gupta Eras

Unit 4 Study of Inscriptions of Historical and Cultural Importance 20 hrs

- a. Sogaura Copperplate Inscription
- b. Besnagar Garuda Pillar Inscription of Heliodorus
- c. Bhattiprolu Relic Casket Inscription
- d. Hathigumpha Inscription of Kharavela
- e. Naneghat Inscription of Naganika
- f. Nasik Cave Inscription of Nahapana

- g. Nasik Cave Inscription of Vasithiputa Pulumavi, 19th Regnal Year
- h. Junagarh Inscription of Rudradamana
- i. Nagarjunikonda Inscription of Virapurisadatta, 6th Regnal Year
- j. Sarnath Buddhist Image Inscription of Kanishka, 3rd Regnal Year
- k. Allahabad Prashasti of Samudragupta
- l. Mathura Inscription During the Reign of Chandragupta II, GE 61
- m. Poona Plates of Prabhavtigupta
- n. Indore Plates of Pravarasena II, 23rd Regnal Year
- o. Aihole Inscription of Pulakesin II

Unit 5 Method of Inscription Decipherment:
Practical Training of Estampage Technique

2 hrs

Recommended Readings:

Allchin, F.R. and K.R. Norman 1985. Guide to the Ashokan Inscriptions, South Asian Studies, I: 49-50.

Bhandarkar, D.R. 1935-36. A List of the Inscriptions of Northern India in Brahmi and its Derivative Scripts, from about 200 B.C. Appendix to Epigraphia Indica vols. 19-23.

Bhandarkar, D.R. 1981. Inscriptions of the Early Gupta Kings (Bahadurchand Chhabra and Govind Swamirao Gai eds.). Corpus Inscriptionum Indicarum vol. III. New Delhi: Archaeological Survey of India.

Bühler, George 1892. A New Variety of the Southern Maurya Alphabet, Winer Zeitschrift für die Kunde des Morgen Landes (Vienna Oriental Journal), vol. 6: 148-156.

Bühler, George 1898. On the Origin of Indian Brahma Alphabet. Strassburg: Karl J. Trubner.

Bühler, George 1959. Indian Palaeography. Calcutta: Indian Studies.

Dani, Ahmad Hasan 1963. Indian Palaeography, Oxford: Clarendon Press.

Epigraphia Indica 1892-1940. Vol. 1- XXV, Archaeological Survey of India.

Hultzsch, D. 1969 (Reprint). Corpus Inscriptionum Indicarum. Vol.I. Varanasi: Indological Book House.

Gokhale, S. Purabhilekhavidya. Mumbai: Sahitya Sanskruti Mandal.

Goyal, S.R. 2005. Ancient Indian Inscriptions. Jodhpur: Kusumanjali Book World.

- Khare, M.D. 1967. Discovery of a Vishnu Temple near the Heiodorus Pillar, Besnagar, District Vidisha (M.P.), *Lalit Kala* (13): 21-27.
- Lüders, H. 1912. A List of Brahmi Inscriptions from the Earliest Times to About A.D. 400 with the Exception of those of Asoka. Appendix to *Epigraphia Indica* Vol. X.
- Mangalam, S.J. 1990. *Kharoshti Script*. Delhi: Eastern Book Linkers.
- Mehendale, M.A. 1948. *Historical Grammar of Inscriptional Prakrits*. Poona: Deccan College Post Graduate and Research Institute.
- Mehendale, M.A. 1948. *Asokan Inscriptions in India (Linguistic Study together with Exhaustive Bibliography)*. Bombay: University of Bombay.
- Mirashi, V.V. 1981. *The History and Inscriptions of the Satavahanas and the Western Kshatrapas*. Bombay: Maharashtra State Board of Literature and Culture.
- Pandey, R. 1957. *Indian Palaeography*. Delhi: Motilal Banarasidas.
- Raghunath, K. 1998. *Ikshvakus of Vijaya Puri: Study of the Nagarjunakonda Inscriptions*. Delhi: Eastern Book Linkers.
- Ramesh, K.V. 1984. *Indian Epigraphy*. Delhi: Sundeep Prakashan.
- Rea, Alexander 1997 (Reprint). *South Indian Buddhist Antiquities*. Archaeological Survey of India New Imperial Series Vol. XV. New Delhi: Director General, Archaeological Survey of India.
- Salomon, Richard 1998. *Indian Epigraphy*. New delhi: Munshiram Manoharlal Publishers Pvt. Ltd.
- Shastri, A.M. 1996-97. Some Observations on the Origin and Early History of the Vikrama Era, *Prachya Pratibha*, vol. XVIII: 1-51.
- Shastri, A.M. 1966. *The Saka Era, Panchal*, vol. 9: 109-132.
- Sircar, D.C. 1965. *Indian Epigraphy*. Delhi: Motilal Banarasidas.
- Sircar, D.C. 1986 (3rd edition). *Select Inscriptions*. Vol. I. Delhi: Asian Humanities Press.
- Srinivasan, P.R. and S. Sankaranarayanan 1979. *Inscriptions of the Ikshvaku Period*. Hyderabad: Andhra Pradesh Government.
- Woolner, Alfred C. 1924. *Asoka Text and Glossary (parts I and II)*. Lahore: The University of the Panjab, Lahore.

Arc 505: INTRODUCTION TO CULTURAL HERITAGE MANAGEMENT

Course objectives

The objective of this course is to introduce students to the key concepts of Heritage management, including the definition and scope of the subject and its implementation in the Indian context.

Course outcomes

Students are prepared in this course with the issues related to Heritage management.

Unit 1	a. Heritage: Definition b. Types of Heritage c. Need for preservation of heritage d. Scope of cultural heritage management	5 hrs
Unit 2	a. Global Heritage conservation movement b. Role of UNESCO and other International Organizations c. World Heritage Monuments d. World Heritage Monuments in India	8 hrs
Unit 3	a. History of Cultural Heritage in India b. Role of Government bodies: ASI, State Depts and LSGs c. Indian Legislation about Cultural Heritage d. Role of Non-Government Organizations and Universities	8 hrs
Unit 4	a. Heritage Management: Policy and Reality b. Developmental issues and their impacts c. Illegal trade of art objects and smuggling d. Impact of war and internal insurgencies e. Impact of natural disasters on heritage monumnets f. Heritage and National identity issues	12 hrs
Unit 5	a. Public participation in preservation of cultural heritage b. Enhancing public awareness: formal and non-formal education c. Tourism and cultural heritage d. Practical: Status report of any one part of local cultural heritage	12 hrs

Recommended Reading

Batra, M. L. 1996. Conservation: Preservation and Restoration of Monuments. New Delhi: Aryan Books International.

Basham, A.L. 2007. The Illustrated Cultural History of India. Oxford University Press.

Bhandari, N.K. 2007. Cultural Heritage of India. Delhi: Eastern Book Corporation.

Bhowmik, S. K. 2004 Heritage Management: Care, Understanding and Appreciation of Cultural Heritage. Jaipur: Publication Scheme.

Biswas, Sachindra Sekhara. 1999. Protecting the Cultural Heritage (National Legislation and International Conservation). New Delhi: Aryan Books International.

Cleere, H.F. (Ed .)1984. Approaches to Archaeology Heritage: A Comparative Study of World Cultural Resource Management System. Cambridge : Cambridge University Press.

Deshpande, M. N. 1994. Care of Cultural Heritage. New Delhi : National Museum Institute.

Dhawan, Shashi. 1996. Recent Trends in Conservation of Art Heritage. Delhi: Agam Kala Prakashan.

Ghoshmaulik, S. K. and K.K. Bass 2001. Understanding Heritage: Role of Museum. Bhubaneswar: Academic Staff College.

Greffe, X. 2001. Managing our Cultural Heritage (Translated by Latika Sehgal). New Delhi: Aryan Books International.

Howard, Peter. 2003. Heritage: Management, Interpretation, Identity. London: Continuum.

Lowenthal, D. 1998. The Heritage Crusade and the Spoils of History. Cambridge: Cambridge University Press.

Paddayya, K. 2004. Heritage management with special reference to modern impacts on Archaeology sites of lower Deccan. Deccan Studies 1 (2): 7-24.

Rao, P.R. 1988. Cultural Heritage of India. Delhi: Sterling.

Renfrew, C. 2000. Loot, Legitimacy and Ownership. London: Duckworth.

Singh, L.K. 2008. Indian Cultural Heritage from Tourism Perspective. Delhi: ISHA Books.

Thapar, B.K. 1989 Conservation of the Indian Heritage. New Delhi: Cosmo Publication.

Arc 506: RESEARCH METHODOLOGY

Course objectives

The objective of this course is to introduce the major theories used in archaeology. Research methodology and report writing are also covered in this course.

Course outcomes

Students gain grounding in theoretical issues related to archaeology and research methodology.

Unit 1	a. What is research? b. Seven Stages of research process c. Types of research design d. Virtues of a researcher	4 hrs
Unit 2	a. Scientific method b. Induction and Deduction c. Inductive and Analogical reasoning d. Hypothetico Deductive Method e. Fallacies	9 hrs
Unit 3	a. Choosing a research problem b. Library and background work c. Formulation of research protocol d. Pilot work and preparation research proposal	8 hrs
Unit 4	a. Types of Variables b. Sampling Techniques c. Measurement and Observation methods d. Questionnaire, Observation and Experiments e. Data collection, storage and processing	8 hrs
Unit 5	a. Methods of data analysis b. Preliminary Data Analysis c. Advanced Data Analysis and Interpretation d. Inductive and deductive explanations	8 hrs
Unit 6	a. Structure of the report/thesis/dissertation b. Style of writing: essentials of editing text c. What not to do: plagiarism and copyright issues d. Preparing bibliography: use of web resources e. Visual Aids in presentations f. Clues for effective Visual Presentation	8 hrs

Recommended Reading

- Binford, L.R. 1983. *Working at Archaeology*. New York: Academic Press.
- Black, Thomas, R. 2002. *Understanding Social Science Research*. New Delhi: SAGE Publications.
- Cohen, M.R. and E. Nagel. 1976. *An Introduction to Logic and Scientific Method*. Bombay: Allied Publishers.
- Dawson, Catherine 2002. *Practical Research Methods. A User-friendly Guide to Mastering Research Techniques and Projects*. Oxford: How To Books Ltd.
- Gupta, Anil 2006. *Empiricism and Experience*. Oxford: Oxford University Press.
- Hodder, Ian 1992. *Theory and Practice in Archaeology*. London: Routledge.
- Johnson, M. 1999. *Archaeological Theory: An Introduction*. Malden (Ma): Blackwell Publishers.
- Jones, Andrew 2004. *Archaeological Theory and Scientific Practice*. Cambridge: Cambridge Press.
- Kothari, C.R. 2004. *Research Methodology: Methods and Techniques*. Delhi: New Age International.
- Kelley, J.H. and M.P. Hanen 1990. *Archaeology and the Methodology of Science*. Albuquerque: University of New Mexico Press.
- Marczyk, Geoffrey, David DeMatteo and David Festinger 2005. *Essentials of Research Design and Methodology*. Hoboken, New Jersey: John Wiley & Sons, Inc.,
- Paddayya, K. 1990. *New Archaeology and Aftermath: View from Outside the Anglo American World*. Pune: Ravish Publishers
- Paddayya, K. 2002. A Review of Theoretical Perspectives in Indian Archaeology, in S. Settar and R. Korisetar (ed.) *Indian Archaeology in Retrospect, Vol. IV*, pp.117-157. New Delhi: ICHR and Manohar.
- Preucel, R. (ed). 1991. *Processual and Postprocessual Archaeologies: Multiple Ways of Knowing the Past*. Carbondale (Illinois): Southern Illinois University Press.
- Salmon, W.C. 1984. *Scientific Explanation and Causal Structures of the World*. Princeton: Princeton University Press.
- Schiffer, M.B. 1987. *Formation Processes of the Archaeological Record*. Albuquerque: University of New Mexico Press.
- Shanks, M. and C. Tilley. 1987. *Social Theory as Archaeology*. Cambridge: Polity Press.
- Tarski, Alfred 1994. *Introduction to Logic and to the Methodology of the Deductive Sciences*. Oxford: Oxford University Press.
- van der Nat, Arnold 2010. *Simple Formal Logic with Common-Sense Symbolic Techniques*. New York and London: Routledge.

Arc 507: FIELD ARCHAEOLOGY

Course Objectives

This course introduces students to the process of archaeological investigation from the discovery of sites to their excavation and analysis of the recovered archaeological evidence. This course includes training in field methods including excavation techniques.

Course outcomes

Students learn the practical methods of doing Archaeological work.

Unit 1		5 hrs
	a. Research in Field Archaeology in Europe, West Asia and India from the beginning to present	
	b. Contributions of institutions and individuals to the development of field archaeology	
Unit 2		4 hrs
	Formation processes of an archaeological site, different categories of sites and their natures	
Unit 3		8 hrs
	Various methods for the location of archaeological sites:	
	a. Conventional methods- use of literary sources and folk traditions, village to village survey, field walking, survey along the water bodies, etc.	
	b. Scientific methods- identification of archaeologically potent area by undertaking environmental and ecological survey, use of maps, satellite imagery and aerial photographs, Underwater archaeology and use of various geophysical methods	
Unit 4		5 hrs
	Archaeological Data Collection Methods-	
	a. indiscriminate collection of data	
	b. random sampling,	
	c. systematic sampling,	
	d. site catchment analysis and ethnographic survey,	
	e. reconstruction of Regional Settlement Pattern and system	
Unit 5		8 hrs
	a. Excavation methods:	
	b. Sondage, Vertical, Quadrant and Horizontal excavation methods	

(Excavation of Stone Age site, excavation of settlement sites, excavation of burial sites, excavation of fortifications and large features)

Unit 6 4 hrs

- a. Recording Methods
Stratigraphy and three dimensional recording, Contextual approach
- b. Techniques of Archaeological Photography and Photogrammetry, Methods of Drawings: Plan, Section and Pottery`

Unit 7 5 hrs

Post-excavation Analysis:

- a. Classification and analyses of Artefacts
- b. Classification and analyses of Ecofacts
- c. Synthesis of analyses of artefacts and ecofacts for the reconstruction of Socio-economic organizations

Unit 8 6 hrs

Absolute Dating methods radiocarbon, thermoluminescence, electron spin resonance, potassium argon, fission track, obsidian hydration, amino acid racemization and dendrochronology

Recommended Readings

Aitken, M.J. 1990. Science based Dating in Archaeology. London: Longmans.

Atkinson, R.J.C. 1953. Field Archaeology. London: Methuen and Co.

Barker, P. 1982. Techniques of Archaeological Excavation. London: Batsford.

Binford, L.R. 1964. A Consideration of Hypothetical Research Design, American Antiquity 29:425 441.

Crawford, O.G.S. 1953. Archaeology in the Field. London: Phoenix.

Dancey, W.S. 1985. Archaeological Field Methods: An Introduction. New Delhi: Surjeet Publications.

Harris, E.C. 1979. Principles of Archaeological Stratigraphy. London: Academic Press.

Hester, T., Heizer, R.E. and J.A. Graham. 1975. Field Methods in Archaeology. Palo Alto (California): Mayfield Press.

Redman, C. 1974. Multi Stage Fieldwork and Analytical Techniques, American Antiquity 38: 611 79.

Tite, M.S. 1972. Methods of Physical Examination in Archaeology. London: Seminar.

Wheeler, R.E.M. 1954. Archaeology from the Earth. Harmondsworth: Penguin Books.

Arc 508: SOCIAL AND ECONOMIC INSTITUTIONS OF ANCIENT INDIA

Course Objectives

Students are introduced to the social and economic institutions in Ancient India such as Varna, Ashrama, Marriage, revenue system and trade.

Course Outcomes

Students get acquainted with various developmental phases of the Indian society and economy and its institutions.

Unit 1	4 hrs
a. Literary sources of social and economic Institutions	
b. Social and Economic history of Ancient India: Aims and scope	
c. Historical evolution of important social and Economic institutions	
Unit 2	10 hrs
a. Origin of the Varna order in the Vedic and Later Vedic periods	
b. Development of Varna and Caste in the post-Vedic period	
c. Theory of mixed caste	
Unit 3	12 hrs
Concept of Samskaras in Ancient India	
a. Place and role of Ashramas in ancient Indian society	
b. Family system in Ancient India	
c. Marriage system in Ancient India	
d. Exogamy and Endogamy forms of marriage	
e. Position of women in family and society: Custom of sati, niyoga, widowhood.	
Unit 4	5 hrs
a. Education in Ancient India	
b. Significance of monastic universities	
c. The Nalanda Mahavihara, Vikramshila	
Unit 5	14 hrs
a. Emergence of complex societies, urbanization and trade in ancient India,	
b. Land-revenue system in an Agro-pastoral economy	
c. Role of Guilds in Ancient India	
d. Indo-Roman trade	
e. Recent studies in decline of trade, the decay of the urban centres and the feudalisation of Society	

Recommended Readings

- Altekar, A.S. 1973. Position of Women in Hindu Civilization. Delhi: Motilal Banarasidass.
- Altekar, A.S. 1975. Education in Ancient India. Varanasi: Manohar Prakashan.
- Apte, Usha M. 1978. The Sacrament of Marriage in Hindu Society from Vedic Period to Dharmashatras. Delhi: Ajanta Publications.
- Bailey, G. and I.Mabbett. 2003. The Sociology of Early Buddhism. Cambridge: Cambridge University Press.
- Banerjea, G. 1923. The Hindu Law of Marriage and Stridhana. Calcutta: Calcutta University.
- Begley, Vimala and Richard Daniel De Puma (eds) 1991. Rome and India: The Ancient Sea Trade. New Delhi: Oxford University Press.
- Bhattacharya, N.N. 1980. Indian Puberty Rites. New Delhi: Munshiram Manoharlal
- Bhattacharya, N.N. 1995. Ancient Indian Rituals and Their Social Contents. New Delhi: Manohar.
- Brough, J. 1953. The Early Brahmanical System of Gotra and Pravara. Cambridge: Cambridge University Press.
- Chakravarti, Ranabir 2002. Trade and Traders in Early Society. New Delhi: Manohar.
- Chakravarti, Uma 1989. The Social Dimensions of Early Buddhism. New Delhi: Oxford University Press.
- Champakalakshmi, R. 1996. Trade, Ideology and Urbanization : South India 300 BC to AD 1300. Delhi: Oxford University Press.
- Deshpande, Kamalabai 1936. Child in Ancient India. Poona: Kamalabai Deshpande.
- Dumont, Louis 1980. Homo Hierarchius: The Caste system and Its Implications. Chicago and London: The University of Chicago Press.
- Dutta, N.K. 1931. Origin and Growth of Caste in India (vol.1). London: Harper and Row.
- Eliade, M. 1975. Rites and Symbols of Initiation. London: Harper and Row.
- Erdosy, George 1988. Urbanisation in Early Historical India. Oxford; BAR International Series.
- Ghosh, A. 1973. The City in Early Historical India. Simla: Indian Institute of Advanced Study.
- Ghurye, G.S. 1957. Caste and Class in India. Bombay: Popular Prakashan
- Ghurye, G.S. 1972. Two Brahmanical Institutes: Gotra and Charana. Bombay: Popular Prakashan.
- Gonda, J. 1980. Vedic Rituals-the Non-Solemn Rites. Leiden: E.J.Brill.
- Heesterman, J.C. 1957. The Ancient Indian Royal Consecration. The Hague: Mouton.

- Horner,D.B.1930. Women under Primitive Buddhism. London: George Routledge and Sons Ltd.
- Hutton, J.H. 1963. Caste in India Its Nature, Function and Origiins.Oxford: Oxford University Press.
- Jaiswal,Suvira 2000. Caste: Origin, Function and Dimensions of Change. Delhi: Manohar.
- Jha,D.N. 1967. Revenue System in Post-Maurya and Gupta Times. Calcutta: Punthi Pustak.
- Jha, D.N. (ed.) 1987. Feudal Social Formation in Early India. New Delhi: South Asia Books.
- Jha, D.N. (ed.) 2002. The Feudal Order: State, Society and Ideology in Early Medieval India. New Delhi: Manohar.
- Jha, Vivekanand 1970. Varnasamkara in the Dharmasutras: Theory and Practice, Journal of Economic and Social History of the Orient, 12(3):273-288.
- Kane, P.V. 1941. History of Dharmashastra (Vol.II).Pune: Bhandarkar Oriental Research Institute.
- Karandikar, S.V.1928.Hindu Exogamy. Bombay: Advocate of India Press.
- Klass, Morton 1993. Caste: The Emergence of South Asian Social System. New Delhi: Manohar.
- Majumdar, R.C. 1922. Corporate Life in Ancient India. Calcutta: Calcutta University.
- Maity, S.K. 1970. Economic life in Northern India in the Gupta Period. Delhi:Motilal Banarasidass.
- Mittal. Sushil and Gene Thursby (eds.) 2005. The Hindu World. New York and London: Routledge.
- Moon,Vasant(ed.)1990.Writing and Speeches of Dr.B.R.Ambedkar,Vol.1. Bombay: Government of Maharashtra.
- Motichandra1977. Trade and Trade Routes in Ancient India .New Delhi: Abhinav Publications.
- Mukherji R.K. 2011(reprint). Ancient Indian Education Brahmanical and Buddhist. New Delhi: Motilal Banarasidass.
- Nandi, R.N.2000. State Formation, Agrarian Growth and Social Change in Feudal South India c.AD 600-1200. New Delhi: Manohar.
- Narang, Bhim Sain1991. Concept of Stridhana in Ancient India. Delhi : Parimal Publications.
- Olivelle, Patrick 1993. The Asrama System: the History and Hermeneutics of a religious Institution. New York and Oxford: Oxford University Press.
- Pandey,R.B. 1966. Hindu Sanskaras. Varanasi: Chowkhamba Vidyabhavan
- Parasher-Sen Aloka(ed.) 2004. Subordinate and Marginal Groups in Early India. New Delhi: Oxford University Press.

- Quigley, Declan 1993. *The Interpretation of Caste*. Oxford: Clarendon Press.
- Rawlinson, H.G. 1916. *Intercourse between India and the Western World*. Cambridge: Cambridge University Press.
- Ray, H.P. 1986. *Monastery and Guild: Commerce Under the Satavahanas*. New Delhi: Oxford University Press.
- Sankalia, H.D. 1934. *The University of Nalanda*. Madras: B.G.Paul & Co.
- Sahu, B.P. (ed.) 2006. *Iron and Social Change in Early India*. New Delhi: Oxford University Press.
- Sengupta, Nilakshi 1965. *Evolution of Hindu Marriage*. Bombay: Popular Prakashan
- Sharma, R.S. 1958. *Shudras in Ancient India*. Delhi: Motilal Banarasidass.
- Sharma, R.S. 1965. *Indian Feudalism*. Calcutta: Calcutta University.
- Sharma, R.S. 1966. *Light on Early Society and Economy*. Bombay: Manaktalas.
- Sharma, R.S. 1985. *Material Culture and Social Formation in Ancient India*. New Delhi: Macmillian India.
- Sharma, R.S. 1987. *Urban Decay in India*. New Delhi: Munshiram Manoharlal.
- Shastri, Shakuntala Rao 1969. *Women in the Vedic Age*. Bombay: Bhartiya Vidya Bhavan.
- Singh, Santosh 1989. *A Passion for Flames*. Jaipur: RBSA Publications.
- Sontheimer, G.D. 1977. *The Joint Hindu Family and its Evolution as a Legal Institution*. New Delhi: Munshiram Manoharlal.
- Thapar, Romila 1984. *Ancient Indian Social History: Some Interpretations*. Hyderabad: Orient Longman Ltd.
- Thapar, Romila 1990. *From Lineage and State*. New Delhi: Oxford University Press.
- Thaplyal, K.K. 1996. *Guilds in Ancient India*. New Delhi: New Age International Ltd.
- Tomber, Roberta 2008. *Indo-Roman Trade: From Pots to Pepper*. London: G. Duckworth Co.Ltd.
- Wagale, Narendra 1966. *Society at the time of Buddha*. Bombay: Popular Prakashan.
- Warmington, E.H. 1928. *Commerce between the Roman Empire and India*. Cambridge: Cambridge University Press.
- Wheeler, R.E.M. 1954. *Rome beyond the Imperial Frontiers*. London: G.Bell and Sons Ltd.

Arc 509: SOUTH ASIAN PROTOHISTORY

Course objectives

This course introduces the development of plant and animal domestication and the development of the first civilizations in the Indian subcontinent from their roots in the Neolithic and Chalcolithic in India.

Course Outcomes

Students are introduced to some of the theories explaining the process of plant and animal domestication and the development of the first state level societies.

Unit 1 Beginning and Development of Agricultural Community in South Asia 10 hrs

- a. Neolithic Revolution - Oasis Theory, Hilly Flank Hypothesis, Competing Feasting Model, Demographic Theory, Evolutionary Theory and Younger Dryas Impact Event
- b. Causes and consequences
- c. Transition from hunting/gathering to food production
- d. Origins of agriculture in West Asia, Far East and Mesoamerica
- e. Development from Mesolithic to Neolithic/Chalcolithic in South Asia

Unit 2 Neolithic Cultural Traditions of South Asia 8 hrs

- a. Neolithic cultures of Afghanistan and Baluchistan with special reference to Mehrgarh and Mundigak
- b. Neolithic Culture of Mid Ganga Basin- Lahuradewa, Jhusi etc.
- c. Neolithic culture of Kashmir valley
- d. Neolithic cultures of the Vindhyas
- e. South Indian Neolithic
- f. Eastern and North eastern Indian Neolithic

Unit 3 Formative Stage of the Harappan Culture 6 hrs

- a. Development of Chalcolithic cultures at Mehrgarh and surrounding region
- b. Early Harappan Kulli, Nal, Amri, Kot Diji, Hakra, Ravi, Sothi, Padri, Pre Prabhas, Anarta.

Unit 4 Developed Harappan Culture 6 hrs

- a. Origin and development of the Harappan Civilization
- b. Geographical distribution, extent and settlement patterns
- c. Town planning and architecture
- d. Trade, economy, technology and art.
- e. Harappan script- recent views
- f. Socio political and religious organization

- g. Decline various theories, causes and consequences
- h. Late Harappan phase geographical distribution and salient features.

Unit 5 Chalcolithic Traditions of Central India, Rajasthan and Gangetic Doab 6 hrs

- a. Ahar distribution, architecture, characteristic features and contributions
- b. Ganeshwar and Jodhpura distribution and material culture
- c. Kayatha distribution and characteristic
- d. Malwadistribution, life style, socio religious aspects, technology, etc.
- e. OCP and Copper Hoards distribution and cultural tradition

Unit 6 Chalcolithic Cultural Traditions of the Deccan 5 hrs

- a. Savalda distribution and cultural equipment
- b. Cultural contact with the Late Harappan of Saurashtra and the Malwa of Central India.
- c. Development of the Jorwe tradition cultural and socio economic aspects
- d. Regional cultural contacts
- e. Decline of the Chalcolithic causes.

Unit 7 Iron Age in South Asia 4 hrs

- a. Origins of Iron in South Asia Problem and perspective
- b. Iron Age in South India and Sri Lanka Megalithic phase

Recommended Readings

Agrawal, D.P. 1982. Archaeology of India. Copenhagen: Scandinavian Institute of Asian Studies.

Agrawal, D.P. 2000. Ancient Metal Technology and Archaeology of South Asia (A Pan Asian Perspective), Aryan Books International, New Delhi

Agrawal, D.P. and D.K. Chakrabarti (eds.). 1979. Essays in Indian Protohistory. New Delhi: D.K Publishers.

Allchin, F.R. and B. Allchin 1993. The Birth of Civilization in India. revised ed. New Delhi: Penguin Books.

Allchin, Bridget and Raymond Allchin 1982. Rise of Civilization in India and Pakistan. Cambridge: Cambridge University Press.

Childe, V.G. 1951. Man Makes Himself. New York: Mentor.

Cohen, Mark. 1977. The Food Crisis in Prehistory. New Haven: Yale University Press.

Deo, S.B. 1979. Problem of South Indian Megaliths. Dharwad : Karnataka University.

Deo, S.B. 1985. The Megaliths: their culture, ecology, economy and technology, in Recent Advances in Indian Archaeology (S.B. Deo and K. Paddayya eds.), Deccan College, Pune.

Dhavalikar, M.K. 1990. First Farmers of the Deccan, Pune: Ravish Publishers.

- Ghosh, A. 1973. *The City in Early Historical India*. Simla: Indian Institute for Advanced Studies.
- Ghosh, A. 1990. *Encyclopaedia of Indian Archaeology (two volumes)*. New Delhi: Munshiram Manoharlal.
- Haimendorf, C. von. F. 1945. *The Problem of Megalithic Cultures in Middle India . Man in India XXV: 73 86.*
- Lal, B.B. 2000. *The Saraswati Flows On*. New Delhi: Aryan Books.
- Lal, Makkhan. 1984. *Settlement History and the Rise of Civilization in the Ganga Yamuna Doab*. New Delhi: B.R Publishing House.
- Mohanty,R.K., and S.R. Walimbe, 1993. *A Demographic Approach to the Vidarbha Megalithic Cultures Man and Environment, XVIII (2):93-103.*
- Mohanty,R.K. and V.Selvakumar,2002. *The Archaeology of Megaliths in India:1947-1997, in Indian Archaeology in Retrospect, (S.Settar and R.Korisettar Eds.), New Delhi:Manohar Publishers.Vol.1:313-52&479-81*
- Moorti, U.S. 1994. *Megalithic Cultures of South India: Socio Economic Perspectives. Varanasi : Ganga Kaveri.*
- Paddayya, K. 2001 2002. *The Problem of Ashmound of Southern Deccan in the light of Budihal Excavations. Bulletin of the Deccan College Research Institute 60 61: 189 225.*
- Paddayya, K. (ed.). 2002. *Recent Studies in Indian Archaeology*. New Delhi: ICHR and Munshiram.
- Possehl, G.L. 1979 (ed.). 1979. *Ancient Cities of the Indus*. New Delhi: Vikas Publishing House.
- Possehl, G.L. (ed.). 1993. *Harappan Civilization A Recent Perspective*. New Delhi: Oxford and IBH Publishing Co.
- Possehl, G. 1999. *The Indus Age*. New Delhi: Oxford and IBH.
- Roy, T.N. 1983. *The Ganges Civilization: A Critical Study of the PGW and NBPW Periods of Ganga Plains of India*. New Delhi: Ramanand Vidya Bhavan.
- Sankalia, H.D. 1977. *Prehistory of India*. New Delhi: Munshiram Manoharlal.
- Sankalia, H.D. 1974. *Pre and Protohistory of India and Pakistan*. Pune: Deccan College.
- Sarkar Amrita. 2011. *Chalcolithic and modern potting at Gilund, Rajasthan: a cautionary tale in Antiquity vol. 85: 994-1007*
- Sarkar Amrita. 2012. *A Study of Development of the Ahar Culture in Southeast Region of Rajasthan, India from a Ceramic Point of View in Ancient Asia vol 3: 11-35*
- Sarkar Amrita. 2013. *Contextualizing Ahar Culture Phase in Central India in Art and Archaeology of Madhya Pradesh and Adjoining Regions: Recent Perspectives* edited by Pankaj Rag, Vasant Shinde and O.P. Mishra, Directorate of Archaeology, Archives and Museum, Govt. of Madhya Pradesh, Bhopal, pp- 163-174

- Sarkar Amrita and Vasant Shinde. 2013. On sedentism in the Mewar (south-east) Region of Rajasthan, India with Vasant Shinde in Pragdhara no 21-22: 297-308
- Sharma, G.R. et al. 1980. Beginnings of Agriculture. Allahabad: Allahabad University Press.
- Shinde, Vasant. 1989. New Light on the Origin, Settlement System and Decline of the Jorwe Culture of the Deccan, India South Asian Studies 5:60 72
- Shinde, Vasant. 1990. Settlement pattern of the Savalda culture The first farming community of Maharashtra. Bulletin of Deccan College Research Institute, vols. 49 50 (Sankalia Memorial Volume) 49:417 426
- Shinde, Vasant. 1991. Craft specialization and social organization in the Chalcolithic Deccan, India, Antiquity 65(249): 796 807.
- Shinde, Vasant. 1994. The Deccan Chalcolithic: A Recent Perspective, Man and Environment, XIX (1 2): 169 178.
- Shinde, Vasant. 1998. Early Farming Community in the Central Tapi Basin (Study of Settlement and Subsistence Patterns), Munshiram Manoharlal Publishers, New Delhi
- Shinde, Vasant. 2000. Origin and development of Chalcolithic in Central India, Bulletin of Indo Pacific Prehistory Association, 19: 125 136.
- Shinde Vasant, et al. 2002. Emergence, Development and Spread of Agricultural Communities in South Asia in Origins of Pottery and Agriculture. Y Yasuda (ed), Roli Books and Lustre Press, Singapore, pp 89-115
- Shinde Vasant and S. Sinha Deshpande. 2003. South Indian Chalcolithic in The Encyclopedia of Prehistory, vol 8: South and Southwest Asia. Kluwer Academic/Plenum Publishers
- Shinde Vasant et al. 2004. Human Response to Holocene Climate Changes- A Case Study of Western India between 5th to 3rd Millennium BC in Y. Yasua (ed) Monsoon and Civilization, Roli books and Lustre Press. Pp- 383-406
- Shinde Vasant and Amrita Sarkar.2014. Rajasthan Chalcolithic in History of Ancient India vol II: Protohistoric Foundations edited by Dilip K Chakraborti and Makkhan Lal, Vivekananda International Foundation and Aryan Books International, New Delhi. Pp- 465-479, 2014
- Shinde Vasant and Amrita Sarkar. 2014. Gilund in History of Ancient India vol II: Protohistoric Foundations edited by Dilip K Chakraborti and Makkhan Lal, Vivekananda International Foundation and Aryan Books International, New Delhi. Pp- 691-699
- Singh, Purushottam. 1991. Neolithic Origins. New Delhi: Agam Kala Prakashan.
- Tripathi, Vibha. 1976. The Painted Grey Ware: An Iron Age Culture of Northern India. Delhi: Concept.
- Tripathy, Vibha. 2001. Age of Iron in South Asia: Legacy and Tradition, Aryan Books International, New Delhi.
- Wheeler, R.E. M. 1968. Indus Civilization. (Third Edition). Cambridge: Cambridge University Press.

Arc 510: INTRODUCTION TO ETHNOARCHAEOLOGY

Course objective :

The objective of this course is to become familiar with the ethnologies of different communities in India and their relevance for understanding archaeological data.

Course Outcome :

Students are familiarized with the importance of ethnographic data as a source to understand archaeological data.

Unit 1 Ethnoarchaeology: Theory and Principles 6 hrs

- a. Scope of ethnographic analogies in the construction of archaeological data
- b. Definition and methods of Ethnoarchaeology.
- c. Brief review of the Ethnoarchaeological research in India and world
- d. Role of Ethnographic analogies in the reconstruction of Archaeological Data; settlement and subsistence pattern, craft specialization (shell working, bead making, terracotta art), ceramics and metal technology.

Unit 2 Tribe-caste continuum 5 hrs

- a. Differential levels of cultural development in space and time and the persistence of ancient modes of life into the present, with special reference to India
- b. Distribution of scheduled tribes and scheduled castes in India

Unit 3 Ethnoarchaeological studies in Indian archaeology 16 hrs

- a. The forager/collector model to Palaeolithic and Mesolithic societies of India, with special reference to the Andaman Islanders.
- b. Living traditions of hunting gathering way of life, with special reference to the Stone Age past of South Asia. Andaman Islanders, Birhors, Chenchus, Yanadis, Veddas, Kanjars, Pardhis, Van Vagris and Musahars. Veddas of Sri Lanka
- c. Interrelationship among various aspects of shifting cultivators in India: Landscape, technology, carrying capacity, social organization, etc.
- d. Ethnoarchaeology of the South Indian Neolithic culture
- e. Relevance of ethnoarchaeological research for reconstructing the lifeways of the early agro pastoral Chalcolithic communities of Central and Western India; e.g. Mahadeo Kolis, Bhils, Dhangars.
- f. Living Megalithic tradition in India

Unit 4 Ethnoarchaeological studies outside India 8 hrs

- a. Important examples of ethnoarchaeological studies of living hunter gatherer societies of the world, e.g. the Eskimo, Bushmen, Australian Aborigines

Unit 5 Ethnoarchaeology as research tool in Sciences in archaeology 4 hrs

- a. Examples of analogy in problems pertaining to the application of sciences in and archaeozoology; biological anthropology, ethnobotany and archaeo-zoology.

Unit 6 Ethnoarchaeology and social issues 6 hrs

- a. Economic development and loosing traditions
- b. Ethnic identity and regionalism issues
- c. Conflicts between 'original' and 'outsiders'
- d. Important legislations related to forest dwellers and scheduled tribes

Recommended Readings:

Ajay Pratap 1987. Shifting Cultivation in the Rajmahal Hills of India, in *Archaeology as Long-term History*, (Ed) Ian Hodder, pp. 68-83. Cambridge: Cambridge University Press.

Ajay Pratap 2000. *The Hoe and the Axe: Ethnohistory of Shifting Cultivation in Eastern India*. New Delhi: Oxford University Press.

Allchin, B. 1994. *Living Traditions: South Asian Ethnoarchaeology*. New Delhi: Oxford & IBH Co Pvt Ltd.

Ansari, S. 2000. Small game hunting Musahars: An Ethnoarchaeological Approach, *Puratattva*, 30: 141-150.

Ansari, S. 2001. Fishing Practices Among the Mallahs of Allahabad District, Uttar Pradesh, *Man and Environment*, 26 (1): 39-55.

Ansari, S. 2005. *Ethnoarchaeology of Prehistoric Settlement Pattern of South-Central Ganga Valley*, Indian Society for Prehistoric and Quaternary Studies Monograph Series No. 4, Pune: Indian Society for Prehistoric and Quaternary Studies.

Ansari, S. 2005. Prehistoric Settlement Pattern of South-Central Ganga Valley: An Ethnoarchaeological Perspective in *Gurudakshina: Facets of Indian Archaeology*, (Ed.) Alok Kumar Kanungo, pp. 287-328, Oxford: BAR International Series 1433.

Arati Deshpande-Mukherjee 2000. An Ethnographic Account of Contemporary Shellfish Gathering on the Konkan Coast, Maharashtra, *Man and Environment* 25 (2): 79-92.

Arati Deshpande-Mukherjee 2006. Reconstructing the Past: Ethnographic Observation on Shell working at Bishnupur, in *Past and Present Ethnoarchaeology in India*, (Gautam Sengupta, Suchira Roychoudhury and Sujit Som Eds.), pp.383-409. Pragati Publications (New Delhi) in collaboration with Centre for Archaeological Studies and Training Eastern India (Kolkata).

Axel Steenberg 1986. *Man the Manipulator: An Ethnoarchaeological Basis for Reconstructing the Past*. Kopenhagen: National Museum.

- Axel Steensberg 1980. *New Guinea Gardens: Study of Husbandry with Parallel in Prehistoric Europe*. Cambridge: Cambridge University Press.
- Bettinger, R.L. 1987. *Archaeological Approaches to Hunter-Gatherer*, *Annual Review of Anthropology* 16: 121-142.
- Bichieri, M.G. 1972. *Hunters and Gatherers Today*. New York: Holt, Rinehart and Winston.
- Binford, L. R. 1988. *In Pursuit of the Past*. New York: Thames and Hudson.
- Binford, L.R. 1978. *Nunamiut Ethnoarchaeology*. New York: Academic Press.
- Coles, J. 1973. *Archaeology by Experiment*. London: Hutchinson.
- Cooper, Z. 1992. *The Relevance of the Forger/Collector Model to Island Communities in the Bay of Bengal*, *Man and Environment* 17(2): 111-122.
- Cooper, Z. 1997. *Prehistory of the Chitrakot Falls Central India*. Pune: Ravish Publishers.
- Cooper, Z. 2002. *Archaeology and History: Early Settlement in the Andaman Islands*. New Delhi: Oxford University Press.
- David N. and C. Kramer 2001. *Ethnoarchaeology in Action*. Cambridge: Cambridge University Press.
- Dhavalikar, M.K. 1983. *Ethnoarchaeology in India*, *Bulletin of the Deccan College Research Institute* 42: 49-68.
- Dhavalikar, M.K. 1994. *Chalcolithic Architecture at Inamgaon and Walki: An Ethnoarchaeological Study*, in *Living Traditions* (Ed.) B. Allchin, pp 35-52. New Delhi: Oxford-IBH.
- Gould, R.A. 1978. *Beyond Analogy in Ethnoarchaeology, Explorations in Ethnological Reasoning*, *Journal of Anthropological Archaeology* 1 (4): 355-81.
- Gould, R.A. 1980. *Living Archaeology*. Cambridge: Cambridge University Press.
- Griffin, P.B. and W.G. Solheim II. 1990. *Ethnoarchaeological Research in Asia*, *Asian Perspectives* 28 (2): 145-161.
- Grigg, D.B. 1980. *The Agricultural Systems of the World*. Cambridge: Cambridge University Press.
- Jain, S.K. 1991. *Contributions to Indian Ethnobotany*. Jodhpur: Scientific Publishers.
- Jayaswal, V and K. Krishna 1986. *An Ethnoarchaeological View of India Terracotta*. New Delhi: Agam Kala.
- Jochim, M.A. 1976. *Hunter Gatherer Subsistence and Settlement: A Predictive Model*. New York: Academic Press.

- Kanungo, A.K. 2004. Glass Beads in Ancient India and Furnace-Wound Beads at Purdalpur: An Ethnoarchaeological Approach, *Asian Perspective*, Vol. 43(1): 123-150.
- Kanungo, A.K. 2004. *Glass Beads in Indian Archaeology: An Ethnoarchaeological Approach*. Oxford: BAR International Series 1242.
- Kenoyer, J.M. 1983. *Shell working Industries of the Indus Civilization: An Archaeological and Ethnographic Perspective*. Ph.D Dissertation. Berkeley: University of California.
- Kenoyer, J.M., M. Vidale and K.K. Bhan 1991. Contemporary Stone bead –Making in Khambat, India: Patterns of Craft Specialization in the Archaeological Record, *World Archaeology* 23 (1): 44-63.
- Kramer, C. 1980. *Ethnoarchaeology*. Guildford Survey: Columbia Survey: Columbia University Press.
- Kramer, C. 1994. A Tale of Two Cities: Ceramic Ethnoarchaeology in Rajasthan, in *Living Traditions* (B. Allchin Ed.), pp 307-22. New Delhi: Oxford-IBH.
- Lee, R.B. and I. Devore 1975. *Man the Hunter*. Chicago: Aldine Publishing Co.
- Leshnik, L.S. and G. Sontheimer. 1975. *Pastoralists and Nomads*. Wiesbaden: Otto Harrassowitz.
- Maheshwari, J.K. 1996. *Ethnobotany in South Asia*. Jodhpur: Scientific Publishers.
- Meehan, B. and R. Jones 1988. *Archaeology with Ethnography: An Australian Perspective*. Canberra: Department of Prehistory, Research School of Pacific Studies, Australian National University.
- Michael, J. Balick and Paul Alan Cox 1996. *Plant, People and the Science of Ethnobotany*, Museum of Anthropology, University of Michigan, Ann Arbor.
- Miller, D. 1985. *Artefacts as Categories: A Study of Ceramic Variability in Central India*. Cambridge: Cambridge University Press.
- Misra, V.N. 1974. Archaeological and Ethnographic Evidence for the Hafting and Use of Microliths and Related Tools, *Puratattva* 7: 3-12.
- Mohanty, P. and J. Mishra 2002. Fifty Years of Ethnoarchaeological research in India: A Review, in *Archaeology and Interactive disciplines* (S. Settar and R. Korisettar Eds.), pp 169-207. Delhi: Indian Council of Historical Research
- Morris, B. 1982. *Forest Traders: A Socio-Economic Study of the Hill Pandaram*. London School of Economics Monograph, Social Anthropology 55. London: Athlone Press.
- Murty, M.L.K. 1981. Hunter-Gatherer Ecosystems and Archaeological Patterns of Subsistence Behaviour on the South-East Coast of India: An Ethnographic Model, *World Archaeology* 13: 47-58.

- Murty, M.L.K. 1985. Ethnoarchaeology of Kurnool Cave Area, *World Archaeology* 17 (2): 192-205.
- Murty, M.L.K. and G.D. Sontheimer 1980. Prehistoric Background to Pastoralism in the Southern Deccan in the Light of Oral Traditions and Cults of Some Pastoral Communities, *Anthropos* 75: 163-84.
- Nagar, M. 1975. Role of Ethnographic Evidence in the Reconstruction of Archaeological Data, *Eastern Anthropologist* 28 (1): 13-22.
- Paddayya, K. 1998. Evidence of Neolithic Cattle Penning at Budhihal, Gulburga District, Karnataka, *South Asian Studies* 13: 141-54.
- Pakem, B, J.B., Bhattacharya, B.B. Dutta, and B. Datta Ray. 1980. *Shifting Cultivation in North-East India*, Shillong: North East India Council for Social Science Research.
- Panja, S. 1996. Mobility Strategies, Site Structure and Subsistence- Settlement Organizations: An Actualistic Perspective, *Man and Environment* 21 (1): 58-73. Pradesh, *Man and Environment*, 26 (1): 39-55.
- Raju, D.R. 1988. *Stone Age Hunter-Gatherers: An Ethno- Archaeology of Cuddapah Region, South-East India*. Pune: Ravish Publishers.
- Ray, H.P. 1996. Maritime Archaeology: The Ethnographic Evidence, *Man and Environment* 21 (1): 74-85.
- Richard B. Lee and Richard Daly 1999. *Hunters and Gatherers*. Cambridge: Cambridge University Press.
- Roy, S.K. 1981. Aspects of Neolithic Agriculture and Shifting Cultivation, Garo Hills, Meghalaya, *Asian Perspective* 24: 193-221.
- Satapathy, K.K. and B.K. Sarma 2002. Shifting Cultivation in India: An Overview, *Asian Agri-History*, 6 (2): 121-139.
- Schiffer, M. 1978. Methodological Issues in Ethnoarchaeology, in *Exploration in Ethnoarchaeology* (R. Gould Ed.), pp 229-47. Albuquerque: University of New Mexico Press.
- Sinopali, C.M. 1991. Seeking the Past through the Present: Recent Ethnoarchaeological Research in South Asia, *Asian Perspectives* 28 (2): 145-161.
- Smiley, F.E. et al. 1980. *The Archaeological Correlates of the Hunter-Gatherer Societies: Studies from the Ethnographic Record*. Ann Arbor: Michigan University Press.
- Stiles, D. 1977. Ethnoarchaeology: A Discussion of Method and Application, *Man* 12: 87-103.
- Tripathi, V. and Arun K. Mishra 1997. Understanding Iron Technology: An Ethnographic Model, *Man and Environment* 22 (1): 59-68.

Arc 511 EARTH SCIENCES IN ARCHAEOLOGY

Course objectives

The objective of this course is to introduce students to the scope and methods of geoarchaeology.

Course outcomes

Students learn about the different natural contexts and processes affecting archaeological sites.

Unit 1 4 hrs

- a. Definition and concepts of Geoarchaeology
- b. Development of Geoarchaeology

Unit 2 Soils and sediments 12 hrs

- a. Identifying the Depositional Processes
 - i. Fluvial
 - ii. Aeolian
 - iii. Beach
 - iv. Cave
 - v. Tephra
 - vi. Marine
 - vii. Lacustrine
 - viii. Colluvial
 - ix. Human generated sediments
- b. Post depositional processes
 - i. Calcrete formation
 - ii. Rubification
 - iii. Rock weathering
 - iv. Dessication cracks
 - v. Solifluction
 - vi. bioturbation
 - vii. clay illuviation

Unit 3 Methods 8 hrs

- a. Field techniques
- b. Laboratory techniques
- c. Dating

Unit 4 Human Impact on Landscape 3 hrs

- a. Fire
- b. Agriculture
- c. Urbanization

Unit 5 Human and environment interactions 8 hrs

- a. Rise and Collapse of States
- b. Pleistocene Holocene transition and plant and animal domestication
- c. Pleistocene climatic change and human migrations

Unit 6 Regional Quaternary studies in India 10 hrs

- a. The Quaternary in a global context
- b. Upper Siwaliks
- c. Intermontane basins of Himalayan region
- d. Indo Ganges Plain
- e. Thar Desert
- f. Peninsular India
- g. Coastal Regions

Recommended Reading

Basic Texts:

Goldberg, P., and R. I. Macphail. 2006. *Practical and Theoretical Geoarchaeology*. Oxford: Blackwell.

Holliday, Vance T.. 2004. *Soils in Archaeological Research*. Oxford: Oxford University Press.

Additional Readings

Abeyratne, M., N. A. Spooner, R. Grun, and J. M. Head. 1997. Multidating studies of Batadomba Cave, Sri Lanka. *Quaternary Science Reviews* 16:243-255.

Bacon, A.-M., F. Demeter, P. Düringer, C. Helm, M. Bano, L. Vu The, N. T. Kim Thuy, P. O. Antoine, B. Thi Mai, N. T. M. Huong, Y. Dodo, F. Chabaux, and S. Rihs. 2008. The Late Pleistocene Duoi U'O'i cave in northern Vietnam: palaeontology, sedimentology, taphonomy and palaeoenvironments. *Quaternary Science Reviews* 27:1627-1654.

Barker, G. 2005. The archaeology of foraging and farming at Niah Cave, Sarawak. *Asian Perspectives* 44:90-106.

Barker, G., H. Barton, M. Bird, P. Daly, I. Datan, A. Dykes, L. Farr, D. Gilbertson, B. Harrison, C. Hunj, T. Higham, L. Kealhofer, J. Krigbaum, H. Lewis, S. McLaren, V. Paz, A. Pike, P. Piper, B. Pyatt, R. Rabett, T. Reynolds, J. Rose, G. Rushworth, M. Stephens, C. Stringer, J. Thompson, and C. S. M. Turney. 2007 The 'human revolution' in lowland tropical Southeast Asia: the antiquity and behavior of anatomically modern humans at Niah Cave (Sarawak, Borneo). *Journal of Human Evolution* 52 243-261.

- Barton, H. 2005. The case for rainforest foragers: the starch record at Niah Cave, Sarawak. *Asian Perspectives* 44:56-72.
- Bettis, E. A. I., D. W. Benn, and E. R. Hajic. 2008. Landscape evolution, alluvial, environmental history, and the archaeological record of the Upper Mississippi River Valley. *Geomorphology* 101:362-377.
- Bettis III, E. A., A. K. Milius, S. J. Carpenter, R. Larick, Y. Zaim, Y. Rizal, R. L. Ciochon, S. A. Tassier-Surine, D. Murray, Suminto, and S. Bronto. 2009. Way out of Africa: Early Pleistocene paleoenvironments inhabited by *Homo erectus* in Sangiran, Java. *Journal of Human Evolution* 56:11-24.
- Boyd, W. E. 2008. Social change in late Holocene mainland SE Asia: A response to gradual climate change or a critical climatic event? *Quaternary International*.
- Bridgland, D. R., and R. Westaway. 2008. Climatically controlled river terrace staircases: A worldwide Quaternary phenomenon. *Geomorphology* 98:285-315.
- Brooks, N. 2004 Beyond collapse: the role of climatic desiccation in the emergence of complex societies in the middle Holocene, in *Environmental Catastrophes in Mauritania, the Desert and the Coast*. Abstract Volume and Field Guide. Mauritania, 4-18 January 2004. First Joint Meeting of ICSU Dark Nature and IGCP 490. Edited by S. Leroy and P. Costa, pp. 26-30.
- Cullen, H. M., P. B. deMenocal, S. Hemming, G. Hemming, F. H. Brown, T. Guilderson, and F. Sirocko. 2000 Climate change and the collapse of the Akkadian empire. *Geology* 28:379-382.
- de Lumley, M.-A., J.-M. Bardintzeff, P. Bienvenu, J.-B. Bilot, G. Flamenbaum, C. Guy, M. Jullien, H. de Lumley, J.-P. Nabot, C. Perrenoud, O. Provitina, and M. Tourasse. 2008. Impact probable du volcanisme sur le décès des Hominidés de Dmanissi. *Comptes Rendus Palevol* 7:61-79.
- Hoffecker, J. F., V. T. Holliday, M. V. Anikovich, A. A. Sinitsyn, V. V. Popov, S. N. Lisitsyn, G. M. Levkovskaya, G. A. Pospelova, S. L. Forman, and B. Giaccio. 2008. From the Bay of Naples to the River Don: the Campanian Ignimbrite eruption and the Middle to Upper Paleolithic transition in Eastern Europe. *Journal of Human Evolution* 55:858-870.
- Huffman, F. O., J. D. Vos, W. B. Aart, and F. Aziz. 2010. Provenience Reassessment of the 1931–1933 Ngandong *Homo erectus* (Java), Confirmation of the Bone-Bed Origin Reported by the Discoverers. *PaleoAnthropology* 2010:1-60.
- Kealhofer, L., P. Grave, H. Genz, and B. Marsh. 2009. Post-Collapse: the re-emergence of polity in Iron age Bogazkoy, Central Anatolia. *Oxford Journal of Archaeology* 28:275-300.

- Kourampas, N., I. A. Simpson, N. Perera, S. U. Deraniyagala, and W. H. Wijeyapala. 2009. Rockshelter sedimentation in a dynamic tropical landscape: Late Pleistocene-Early Holocene archaeological deposits in Kitulgala Beli-lena, southwestern Sri Lanka. *Geoarchaeology* 24:677-714.
- Marriner, N., and C. Morhange. 2007 Geoscience of ancient Mediterranean harbours. *Earth-Science Reviews* 80:137-194.
- O'Sullivan, P. B. 2008. The 'collapse' of civilizations: what palaeoenvironmental reconstruction cannot tell us, but anthropology can. *The Holocene* 18.
- Pappu, R. S. 1995. The Contribution of Earth Science to the Development of Indian Archaeology, in *Quaternary Environments and Geoarchaeology of India*, Edited by S. Wadia, R. Korisettar, and V. S. Kale, pp. 414-434. Bangalore: Memoirs of the geological Society of India 32.
- Pollard, A. M. 1999 *Geoarchaeology: an introduction*. Geological Society, London, Special Publications 165:7-14.
- Tainter, J. A. 1988. *The Collapse of Complex Societies*. Cambridge: Cambridge University Press.
- Tainter, J. A. 2005. Dark Ages in archaeology/systems collapse, in *Archaeology: the key concepts*. Edited by C. Renfrew and P. G. Bahn, pp. 40-. London: Routledge.
- Weiss, H., and R. S. Bradley. 2001 What Drives Societal Collapse? *Science* 291:609-61.
- Weiss, H., M. A. Courty, W. Wetterstrom, G. Guichard, F. Senior, R. H. Meadow, and A. Curnow. 1993. Genesis and Collapse of Third Millennium North Mesopotamian Civilization. *Science* 261:995-1004.
- Westaway, K. E., M. J. Morwood, R. G. Roberts, A. D. Rokus, J. X. Zhao, P. Storm, F. Aziz, G. van den Bergh, P. Hadi, Jatmiko, and J. De Vos. 2007. Age and biostratigraphic significance of the Punung Rainforest Fauna, East Java, Indonesia, and implications for Pongo and Homo. *Journal of Human Evolution* 53:709-17.

Arc 512: DISSERTATION

Course Objective :

This course allows students to undertake a small research topic under the guidance of a staff member.

Course outcome :

Students learn how to do research and contribute new research findings.

1. A student may opt for writing a Dissertation in lieu of one of the papers for semester II.
2. The dissertation application form shall be submitted by the student within 30 days of the commencement of teaching for semester I.
3. The application shall be submitted alongwith necessary dissertation fee (non refundable), alongwith a detailed synopsis of his research and concurrence of the research guide. He will be permitted to proceed with the dissertation only after it is approved by the Departmental Committee.
4. The synopsis shall be signed by the student and the research guide and shall consist of:
 - a. Current status of knowledge of the topic of research;
 - b. Aims of proposed research and methodology to be adopted;
 - c. Nature of data to be collected;
 - d. Proposed method of analysis of data;
 - e. Expected contribution to the knowledge of the subject; and
 - f. A detailed bibliography of the literature on the topic selected.
5. Every student, who offers dissertation, shall work under the supervision of a regular teaching faculty member of the Institute. The topic of the dissertation and the supervisor shall be chosen by the student in consultation with the Departmental Committee. If a candidate's proposed work is of an interdisciplinary nature, one more internal supervisor from the related discipline may be appointed.
6. A student shall complete his dissertation on the topic and under the supervision of a guide approved by the Departmental Committee. He shall not be permitted to change the topic and/or guide once approved by the Departmental Committee.
7. One copy of the dissertation to be submitted to the Academic Section. The cover of the dissertation shall mention the topic of the dissertation and shall contain the following matter:

The cover of the dissertation shall mention the topic of the dissertation and shall contain the following matter:

Dissertation submitted to Deccan College
in partial fulfillment of the Degree
of Post-Graduate Diploma in Archaeology .

8. The student shall prepare two copies of the dissertation. He shall submit one copy of the dissertation to the Academic Section and shall retain the second copy with himself to be submitted, only if required later on by the Academic Section.
9. The dissertation shall have the following certificate from the research guide:

CERTIFICATE

CERTIFIED that the work incorporated in this thesis (entitled) submitted by Shri/Smt. (signed hereunder) was carried out by the student under my supervision. Such material as has been obtained from other sources has been duly acknowledged in the dissertation.

(Sign. of the student)

(Sign. of research guide)

10. Revaluation of the dissertation shall be done only when a student gets 40 and above marks.
11. A student who fails to get the minimum required marks (i.e. 40) shall revise and resubmit it for evaluation as per the comments of the examiner. Revised dissertation shall be submitted for evaluation at any semester end examination.
12. The dissertation shall be submitted to the Academic Section. It shall be submitted not later than 30th April of the year in which the student takes admission to semester II.

Arc 513: OPEN PAPER

Any faculty member may offer a paper on any topic of current academic interest, with the concurrence of the Departmental Committee. Notice of this course will be given in advance.

CONTENTS

M.A. DEGREE COURSE

Credits, Core Courses and Elective Courses

This degree requires students to complete 64 credits, over four semesters in which four courses of 4 credits are offered each semester.

In the first year all the course are core courses and there are no electives. In the second year there is only one core course in semester III and students can select 3 electives from 12 offered in the III semester and 4 electives from 9 offered in semester IV.

The MA course taught at Deccan College offers many electives which are not offered anywhere else and students have a wide choice of specializations' within archaeology. The cores courses also are a unique combination with special role for prehistoric, environmental and scientific archaeology. Many students do opt for a dissertation and some of these are of real value to research.

Objectives and outcomes of the MA Degree

Students entering this program have no background in Archaeology as Archaeology is not available as an undergraduate degree. This degree begins with very basic introductory level and brings the students to a level where they can engage in independent research. The variety of elective courses offered is large. Students completing this program have gone on to complete PhD from Institutes all over the world as well as from Deccan College. Close interaction and participation in the research activities in the Department as well as interaction with students from all over India as well as from other countries enhances the confidence and knowledge of students at the M.A. level.

Semester I (Core)

Arc 101 Political History of India (upto 700 C.E.)

Arc 102 Science in Archaeology

Arc 103 Introduction to Archaeology

Arc 104 Prehistory of South Asia

Semester II (Core)

Arc 201 Religious History of India.

Arc 202 Methods in Archaeology

Arc 203 Protohistory of South Asia

Arc 204 Social and Economic History of India (upto 1200 C.E.)

Semester III (Core)

(Compulsary)

Arc 308 Advanced Archaeological Theory and Research Methodology

Elective (Any three)

Arc 301 Art and Architecture of India I (up to 600 C.E.)

Arc 302 Ancient Indian Iconography

Arc 303 Ancient Indian Epigraphy and Palaeography

Arc 304 Archaeology and Literature

Arc 305 Introduction To World Prehistory

Arc 306 Environmental Archaeology (Bioarchaeology)

Arc 307 Biological Anthropology

Arc 309 History of Indian Archaeology

Arc 310 Harappan Civilization

Arc 311 Introduction To Museology

Arc 312 Cultural Heritage Management

Semester IV

Elective (Any four)

Arc 401 Art and Architecture of India II (600 C.E. to 1200 C.E.)

Arc 402 Ancient Indian Numismatics

Arc 403 Ethnoarchaeology

Arc 404 Early Iron Age of India

Arc 405 Historical Archaeology of India

Arc 406 Ancient Technology and Archaeological Chemistry

Arc 407 Quantitative Methods and Information Science

Arc 408 Environmental Archaeology (Geoarchaeology)

Arc 409 Dissertation

Arc 410 Open Paper

P.G. DIPLOMA COURSE

Credits, Core Courses and Elective Courses

The PG. Diploma in Archaeology course is for two semesters and requires students to complete 32 credits opting 4 courses of 4 credits each in each of the semesters. PG Diploma in Archaeology students have 3 core courses in the first semester and can choose one elective from three courses offered. In the second semester they have one core course and can select three courses from 5 elective courses.

Objectives and outcomes of the Post Graduate Diploma in Archaeology

The Post Graduate Diploma in Archaeology is designed for students who wish to do research in Archaeology but who do not have a post graduate degree in Archaeology. It is designed to deliver the essential core knowledge in the subject of archaeology within a one year program. A few students take the PG Diploma course because they want to commit only a year to learning the basics of archaeology. Students completing the Post Graduate Diploma normally do register and complete their Ph.D. degrees.

Semester I (Core)

Arc 501 Principles of Archaeology

Arc 502 Archaeological Science

Elective (Any one)

Arc 503 South Asian Prehistory

Arc 504 Epigraphical records of Ancient India

Arc 505 Introduction to Cultural Heritage Management

(Core)

Arc 506 Research Methodology

Semester II (Core)

Arc 507 Field Archaeology

Elective (Any three)

Arc 508 Social and Economic Institutions of Ancient India

Arc 509 South Asian Protohistory

Arc 510 Introduction to Ethnoarchaeology

Arc 511 Earth Sciences in Archaeology

Arc 512 Dissertation

Arc.513 Open Paper