CURRICULUM

OF

ARCHAEOLOGY

4-YEAR BS PROGRAMME
## CURRICULUM DIVISION, HEC

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof. Dr. Mukhtar Ahmed</td>
<td>Chairman</td>
</tr>
<tr>
<td>Mr. Fida Hussain</td>
<td>Director General (Acad)</td>
</tr>
<tr>
<td>Ms. Ghayur Fatima</td>
<td>Director (Curr)</td>
</tr>
<tr>
<td>Mr. Muhammad Arif</td>
<td>Deputy Director (Curr)</td>
</tr>
<tr>
<td>Mr. Rizwan Shoukat</td>
<td>Deputy Director (Curr)</td>
</tr>
<tr>
<td>Mr. Abid Wahab</td>
<td>Assistant Director (Curr)</td>
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<tr>
<td>Mr. Riaz-ul-Haque</td>
<td>Assistant Director (Curr)</td>
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</tbody>
</table>
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The curriculum, with varying definitions, is a plan of the teaching-learning process that students of an academic programme are required to undergo. It includes objectives and learning outcomes, course contents, scheme of studies, teaching methodologies and methods of assessment of learning. Knowledge in all academic disciplines is expanding and even new disciplines are also emerging, it is imperative that curriculum are developed and revised regularly.

University Grants Commission (UGC) was designated as the competent authority to develop, review and revise curricula beyond Class-XII vide Section 3, Sub-Section 2 (ii), Act of Parliament No. X of 1976 titled “Supervision of Curricula and Textbooks and Maintenance of Standard of Education”. With the repeal of UGC Act, the same function was assigned to the Higher Education Commission (HEC) under its Ordinance of 2002, Section 10, Sub-Section 1 (v).

In compliance with the provisions, the Curriculum Division of HEC undertakes the revision of curricula after every three years through respective National Curriculum Revision Committees (NCRCs) which consist of eminent professors and researchers of relevant fields from public and private sector universities, R&D organizations, councils, industry and civil society nominated by their organizations.

In order to impart education at par with quality international standards, HEC NCRCs have developed unified templates as guidelines for the development and revision of curricula in the disciplines of Basic Sciences, Applied Sciences, Social Sciences, Agriculture and Engineering in 2007 and 2009.

It is hoped that this curriculum document, prepared by the respective NCRC’s, would serve the purpose of meeting our national, social and economic needs, and it would also provide the level of competency specified in Pakistan Qualification Framework to make it compatible with international educational standards. The curriculum is also placed on the website of HEC (www.hec.gov.pk).

(Fida Hussain)
Director General (Academics)
CURRICULUM DEVELOPMENT PROCESS

STAGE-I  STAGE-II  STAGE-III  STAGE-IV

CURRI. UNDER CONSIDERATION  CURRI. IN DRAFT STAGE  FINAL STAGE  FOLLOW UP STUDY

COLLECTION OF REC.  APPRAISAL OF 1ST DRAFT BY EXP. OF COL./UNIV  PREP. OF FINAL CURRI.  QUESTIONNAIRE

CONS. OF CRC.  FINALIZATION OF DRAFT BY CRC  INCORPORATION OF REC. OF V.C.C.  COMMENTS

PREP. OF DRAFT BY CRC  APPROVAL OF CURRI. BY V.C.C.  PRINTING OF CURRI.  REVIEW

IMP. OF CURRI.  BACK TO STAGE-I

ORIENTATION COURSES

Abbreviations Used:
CRC.  Curriculum Revision Committee
VCC.  Vice Chancellor’s Committee
EXP.  Experts
COL.  Colleges
UNI.  Universities
PREP.  Preparation
REC.  Recommendations
MINUTES OF THE FINAL MEETING OF HEC NATIONAL CURRICULUM REVISION COMMITTEE IN ARCHAEOLOGY FROM MAY 23-25, 2016

The final meeting of the National Curriculum Revision Committee (NCRC) in the discipline of Archaeology was held at HEC Regional Centre, Peshawar from May 23-25, 2016 to review the changes made in the preliminary meeting and to finalize the draft curriculum of Archaeology for BS 4-Year Programme. The meeting started with recitation from the Holy Quran by Dr Ibrahim Shah. Ms Ghayyur Fatima, Director (Curriculum), Higher Education Commission (Islamabad), welcomed the participants and thanked members of the Committee for sparing precious time to participate in the meeting. She further added that their efforts will go long way in developing workable, useful and comprehensive degree programme in Archaeology. She briefed the participants on the aims and objectives of the meeting. The following members attended the meeting:

1. Prof Dr Ghulam Muhiuddin Veesar
   Convener
   Chairman, Department of Archaeology
   Shah Abdul Latif University, Khairpur (Sindh)

2. Dr Ibrahim Shah
   Member/Secretary
   Associate Professor
   Department of Archaeology
   University of Peshawar, Peshawar

3. Dr Farzand Masih
   Member
   Professor, Department of History
   Forman Christian College
   Ferozepur Road, Lahore

4. Dr Badshah Sardar
   Member
   Associate Professor, Department of Pakistan Studies
   Allama Iqbal Open University, Islamabad

5. Dr Tauqeer Ahmed Warraich
   Member
   Assistant Professor and Head, Department of Archaeology
   University of the Punjab, Lahore

6. Dr Shakirullah
   Member
   Assistant Professor and Head, Department of Archaeology
   Hazara University, Mansehra

7. Dr Sadeed Arif
   Member
   Assistant Professor, Taxila Institute of Asian Civilizations,
   Quaid-i-Azam University, Islamabad
   (In Place of Dr. Muhammad Ashraf Khan, Director)
8. Mr Muhammad Hanif Laghari  
   Lecturer, Department of Archaeology & Anthropology  
   University of Sindh, Jamshoro (Sindh)  

9. Mr Asad Raza  
   Assistant Professor and Head, Department of Tourism & Hospitality, Abdul Wali Khan University, Mardan  
   (In Place of Dr. Ihsan Ali, Vice Chancellor)  

10. Mr Aatif Iqbal  
    Lecturer and Head  
    Institute of Cultural Heritage, Tourism & Hospitality Management. University of Swat, Swat  

11. Engr. Rashiq Ahmer  
    Assistant Archaeologist Engineer  
    Department of Archaeology & Museums, Islamabad  

5. The following members of the NCRC could not attend the meeting due to their official/personal engagement:-  

1. Dr. M. Nasim Khan  
   (Meritorious Professor)  
   Department of Archaeology, University of Peshawar  

2. Dr. Muhammad Arif  
   Director General  
   Department of Archaeology & Museums, Islamabad  

3. Prof. Dr. Asmat Naz  
   Department of History & Pakistan Studies  
   The Women University, Multan  

4. Mr Irshad Hussain  
   Dy. Director, Sub Regional Office, Taxila Museum, Taxila  
   Representative of Department of Archaeology & Museum, Government of the Punjab, Lahore  

All members took keen interest in putting forward precious ideas and shared their long experiences in the respective fields. This practice has been very fruitful in designing curriculum specifically of Archaeology. Long academic discussions on certain issues and problems pertaining to various aspects of the Curriculum and the future scope of the subject further made the business sessions quite interesting. During the
proceedings of meeting, the convener and the secretary considered the input given by the members and incorporated their suggestions, wherever necessary, in the draft curriculum. In the last business session, Ms Ghayyur Fatima requested all members to send the works assigned to them within two weeks’ time to the Convener and the Secretary so that the draft could be finalized soon and sent for printing.

In the concluding session, the Director (Curriculum), on behalf of the Chairman, Higher Education Commission (Islamabad), appreciated the efforts made by all towards giving final shape to the Curriculum of BS (4-Year) Programme of Archaeology and thanked the members for their input. The Convener and the Secretary of the NCRC also applauded and thanked the worthy members for their hard work and fruitful academic deliberation in the entire duration of the meeting. They also thanked the Director (Curriculum) HEC (Islamabad) and the Director, HEC, Regional Centre (Peshawar) for their cooperation and hospitality in the greater national interest.

Ms. Ghayyur Fatima, Director Curriculum, HEC thanked the Convener, secretary and all other members of committee for their quality contribution towards the finalization of final Draft of curriculum in the discipline of Archaeology.

The Meeting adjourned with vote of thanks to the Chair and the participants.
STANDARDIZED FORMAT / SCHEME OF STUDIES FOR
FOUR-YEAR INTEGRATED CURRICULA FOR
BACHELOR DEGREE IN BASIC, SOCIAL, NATURAL
AND APPLIED SCIENCES

STRUCTURE

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Categories</th>
<th>No. of courses</th>
<th>Credit Hours</th>
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<td></td>
<td></td>
<td>Min – Max</td>
<td>Min – Max</td>
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<tr>
<td>2.</td>
<td>General Courses to be chosen from other departments</td>
<td>7 – 8</td>
<td>21 – 24</td>
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<tr>
<td>3.</td>
<td>Discipline Specific Foundation Courses</td>
<td>9 – 10</td>
<td>30 – 33</td>
</tr>
<tr>
<td>4.</td>
<td>Major Courses including research project / Internship</td>
<td>11 – 13</td>
<td>36 – 42</td>
</tr>
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<td>5.</td>
<td>Electives within the major</td>
<td>4 – 4</td>
<td>12 – 12</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>40 – 44</strong></td>
<td><strong>124 – 136</strong></td>
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</table>

> Total number of Credit hours 124-136
> Duration 4 years
> Semester duration 16-18 weeks
> Semesters 8
> Course Load per Semester 15-18 Cr hr
> Number of courses per semester 4-6 (not more than 3 lab /practical courses)

<table>
<thead>
<tr>
<th>Title of the Course</th>
<th>Credit Hours:</th>
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<tbody>
<tr>
<td></td>
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<tr>
<td>Prerequisites:</td>
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<tr>
<td>Specific Objectives of course:</td>
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<tr>
<td>Course Outline:</td>
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<tr>
<td>Lab Outline:</td>
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<tr>
<td>Recommended Books:</td>
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</tr>
<tr>
<td>Journals / Periodicals:</td>
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<tr>
<td>World Wide Web:</td>
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</table>
Compulsory Requirements (the student has no choice) | General Courses to be chosen from other departments | Discipline Specific Foundation Courses
---|---|---
9 courses | 7-8 courses | 9-10 courses

<table>
<thead>
<tr>
<th>Subject</th>
<th>Cr. hr</th>
<th>Subject</th>
<th>Cr. hr</th>
<th>Subject</th>
<th>Cr. hr</th>
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<tbody>
<tr>
<td>1. ENGLISH I</td>
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<td>1. Introduction to Anthropology</td>
<td>3</td>
<td>1. Introduction to Archaeology</td>
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</tr>
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<td>2. ENGLISH II</td>
<td>3</td>
<td>2. Fundamentals of Geography</td>
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<td>2. Ancient History of South Asia</td>
<td>3-4</td>
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<td>3. ENGLISH III</td>
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<td>3. Basic Geology</td>
<td>3</td>
<td>3. Archaeological Heritage of Pakistan</td>
<td>3-4</td>
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<tr>
<td>4. ENGLISH IV/UNIV. OPTIONAL *</td>
<td>2</td>
<td>4. Introduction to Zoology</td>
<td>3</td>
<td>4. Stone Age Cultures of Pakistan</td>
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<tr>
<td>5. PAKISTAN STUDIES</td>
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<td>5. Fundamentals of Botany</td>
<td>3</td>
<td>5. Bronze Age Cultures of Pakistan</td>
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<tr>
<td>6. ISLAMIC STUDIES / ETHICS</td>
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<td>6. Basic Chemistry</td>
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<td>6. Ancient Religions of Pakistan and India</td>
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<tr>
<td>7. MATHEMATICS I</td>
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<td>7. Computer Applications</td>
<td>3</td>
<td>7. Field Archaeology</td>
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<td>8. MATHEMATICS II / UNIV. OPTIONAL **</td>
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<td>8. Introduction to History</td>
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<td>8. Museum Studies</td>
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<td>9. INTRODUCTION TO COMPUTER</td>
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<td>9. Cultural Tourism in Pakistan</td>
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<td>10. GROWTH OF ARCHAEOLOGY IN SOUTH ASIA</td>
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<td>Elective Courses within the major</td>
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<td>11-13 courses</td>
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<td>36-42 Credit hours</td>
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<td>1. Physical Anthropology</td>
<td>1. Gandhara Civilization</td>
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<td>2. Ancient Civilizations</td>
<td>2. Provincial Cultural Heritage</td>
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<tr>
<td>3. Indus Civilization</td>
<td>3. Rock Art of Pakistan</td>
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<tr>
<td>4. Muslim History of South Asia</td>
<td>4. Ancient Art and Architecture of Pakistan and India</td>
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<tr>
<td>5. Cultural Anthropology</td>
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<td>6. Archaeological Conservation</td>
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<tr>
<td>7. Muslim Art: Calligraphy, Painting and Minor Arts &amp; Crafts</td>
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<tr>
<td>8. Muslim Architecture of Pakistan and India</td>
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<tr>
<td>9. Research Methodology</td>
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<td>10. Numismatics of Pakistan and India.</td>
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<td>11. Research Project/Internship – I</td>
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<td>12. Research Project/Internship – II</td>
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<td>13. Palaeography and Epigraphy of Pakistan and India</td>
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### SCHEME OF STUDIES FOR 4-YEAR INTEGRATED BS

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<td>GENERAL-II</td>
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<td>FOUNDATION-I: Introduction to Archaeology</td>
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<td>MATH/STAT-II / UNIV. OPTIONAL</td>
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<td>GENERAL-III</td>
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<td><strong>Third</strong></td>
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<td>INTRODUCTION TO COMPUTER</td>
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<td>GENERAL-VI</td>
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<td>FOUNDATION-V: Bronze Age Cultures of Pakistan</td>
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<td>FOUNDATION-VII: Field Archaeology</td>
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<td>FOUNDATION-VIII: Museum Studies</td>
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<td>FOUNDATION-IX: Cultural Tourism in Pakistan</td>
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<td></td>
<td>MAJOR-IV: Muslim History of South Asia</td>
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<td></td>
<td>MAJOR-V: Cultural Anthropology</td>
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<td>MAJOR-VI: Provincial Cultural Heritage</td>
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<td>Seventh</td>
<td>MAJOR-VII: Muslim Art: Calligraphy, Painting, Minor Arts &amp; Crafts</td>
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<td>MAJOR-VIII: Muslim Architecture of Pakistan and India</td>
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<td>MAJOR-IX: Research Methodology</td>
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<td>MAJOR-X: Numismatics of Pakistan and India.</td>
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<td>MAJOR-XI: Palaeography and Epigraphy of Pakistan and India</td>
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<td>MAJOR-XII: RESEARCH PROJ / INTERNSHIP-I</td>
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<td>ELECTIVE-I (within MAJOR): Gandhara Civilization</td>
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<td>ELECTIVE-II (within MAJOR): Archaeological Conservation</td>
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<td>ELECTIVE-III (within MAJOR): Rock Art of Pakistan</td>
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<tr>
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<td>ELECTIVE-III (within MAJOR): Ancient Art and Architecture of Pakistan and India</td>
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<td><strong>TOTAL – 130</strong></td>
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* 4 Cr Hr must include LAB/Practical*
4-Year Integrated Programme of Study for Bachelor Degree

a) The students will join the 4-years (8 Semesters; 124-136 credits hours) Bachelor Degree Programme at the University campus after 12 years of schooling. Each semester will be spread over 16-18 weeks including the examination period.

b) One credit hour will be equal to 50 minutes student-teacher contact per week for 15-16 weeks and for laboratory/practical work its duration will be 3 hours.

c) Students who qualify at least fourteen years of education at other institutions if wish to join the integrated four year programme may be allowed to do so for the last two years of the programme provided they complete required make-up courses offered by the university.

Semester – I

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Cr. Hrs.</th>
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<td>English</td>
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<tr>
<td>112</td>
<td>Pakistan Studies</td>
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<td>113</td>
<td>Mathematics/Statistics-I</td>
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<tr>
<td>114</td>
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<tr>
<td>115</td>
<td>GENERAL II</td>
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<tr>
<td>116</td>
<td>FOUNDATION-I: Introduction to Archaeology</td>
<td>3</td>
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<td><strong>Total Cr. Hrs.</strong></td>
<td><strong>17</strong></td>
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</table>
DETAIL OF COURSES

Course 111:  English
(Details to be obtained from approved curriculum)

Course 112:  Pakistan Studies
(Details to be obtained from approved curriculum)

Course 113:  Mathematics/Statistics-I
(Details to be obtained from approved curriculum)

Course 114:  GENERAL-I (Details to be filled in by respective University)

Course 115:  GENERAL II
(Details to be filled in by respective University)

Course 116:  Introduction to Archaeology

Learning Outcomes
After completing this course, the student will get familiarized with basic concepts and techniques of Archaeology.

THEORY

- Definition and terminology of Archaeology
- Aims and objectives of Archaeology
- Brief history and development of Archaeology
- Relation of Archaeology with History, Anthropology, Geography, Geology, Zoology, Botany, Physics and Chemistry
- Basic Concept of Archaeology: artefacts, stratigraphy, archaeological sites, settlement-pattern, context
- Survey in Archaeology
- Excavation techniques
- Chronology
- Conservation

PRACTICAL

- Visit to local sites and museums
- Systematic surface collection
- Photographic documentation of archaeological sites
- Identification and drawing of artefacts
- Study of regional maps
- Location of sites/monuments on the maps
- Identification of key features of different periods

RECOMMENDED READINGS:
### Semester – II

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>121</td>
<td>English-II</td>
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<tr>
<td>122</td>
<td>Islamic Studies/Ethics</td>
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<tr>
<td>123</td>
<td>Mathematics-II/Univ. Optional</td>
<td>3</td>
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<tr>
<td>124</td>
<td>GENERAL III</td>
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<td>125</td>
<td>GENERAL IV</td>
<td>3</td>
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<td>126</td>
<td>FOUNDATION-II: Ancient History of Pakistan and India</td>
<td>3</td>
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<tr>
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<td><strong>Total Cr. Hrs.</strong></td>
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</table>

### DETAIL OF COURSES

**Course 121:** English II  
(Details to be obtained from approved curriculum)

**Course 122:** Islamic Studies/Ethics  
(Details to be obtained from approved curriculum)

**Course 123:** Mathematics II/Univ. Optional  
(Details to be obtained from approved Curriculum)

**Course 124:** GENERAL III  
(Details to be filled in by respective University)

**Course 125:** GENERAL IV  
(Details to be filled in by respective University)

**Course 126:** Ancient History of Pakistan and India

### Learning Outcomes
On completion, the student will know about dynastic history and chronological framework of the areas now included in Pakistan and India.

### Contents
- Introduction
- Sources of ancient history
• Aryans: their social, political, cultural, economic and religious life
• Achaemenian rule in Pakistan
• Alexander’s invasion of Pakistan
• Mauryan dynasty: administration of Chandragupta Maurya
• Ashoka’s contributions to Buddhism
• Indo-Greeks
• Indo-Scythians
• Indo-Parthians
• Kushans: Achievements of Kanishka
• Kushano-Sasanians
• Huns
• Hindu Shahis.

RECOMMENDED READINGS:
2. Basham, A. L. The Wonder that was India, rpt. India., 1963.

Journals:
Ancient Pakistan XIV-XV
Journal of the Pakistan Historical Society, Vol. LI, No.3
Semester – III

<table>
<thead>
<tr>
<th>Course</th>
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<td>211</td>
<td>English-III</td>
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<tr>
<td>212</td>
<td>Introduction to Computer</td>
<td>3</td>
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<tr>
<td>213</td>
<td>GENERAL- V</td>
<td>3</td>
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<tr>
<td>214</td>
<td>GENERAL-VI</td>
<td>3</td>
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<tr>
<td>215</td>
<td>FOUNDATION III: Archaeological Heritage of Pakistan</td>
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</table>

**DETAIL OF COURSES**

Course 211: English-III:
(Details to be obtained from approved curriculum)

Course 212: Introduction to Computer:
(Details to be obtained from approved curriculum)

Course 213: GENERAL-V
(Details to be filled in by respective University)

Course 214: GENERAL-VI
(Details to be filled in by respective University)

Course 215: FOUNDATION-III:

Archaeological Heritage of Pakistan

**Learning Outcomes**
After completion, the student would be able to analyze and explain administrative and cultural boundaries of the present-day Pakistan.

**Contents**
1) Introduction
   Stone age to first agricultural communities
2) Urban revolutions
   First Urbanism and its downfall (2600 to 5th century BC)
   Second Urbanism 5th century BC
3) Religions and their socio-political Role
   Buddhism, Hinduism, Jainism, etc
4) Establishment of Kingdoms/Empires: regional/ provincial perspective; focus must remain on cities, monuments etc.
5) Establishment of States: regional/provincial perspective; focus must remain on cities, monuments etc.

RECOMMENDED READINGS
3. Agrawal, D. P. The Copper-Bronze Age in India, Delhi, 1971.
9. Ancient Pakistan, University of Peshawar, (relevant volumes.).
10. Asthana, S. Pre-Harappan Cultures of India and the Borderlands, New Delhi, 1985.
19. Khan, F. A. The Glory that was Harappa, Karachi, n.d.
24. Mackay, E.J. Further Excavations at Mohenjo Daro, Delhi, 1938.

**Pakistan Archaeology (relevant volumes).**

**Semester – IV**

<table>
<thead>
<tr>
<th>Course No.</th>
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<td>GENERAL-VII</td>
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<td>FOUNDATION IV: Stone Age Cultures of Pakistan</td>
<td>4 (3+1)</td>
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<tr>
<td>2</td>
<td>FOUNDATION V: Bronze Age Cultures of Pakistan</td>
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**Total Cr. Hrs.** 17
DETAIL OF COURSES

Course-221: English-IV: (Details to be obtained from approved curriculum)

Course-222: GENERAL-VII: (Details to be filled in by respective University)

Course-223: GENERAL-VIII: (Details to be filled in by respective University)

Course 224: Stone Age Cultures of Pakistan

Learning Outcomes
After having studied the course, the student would be able to understand cultural and technological development of the Stone Age people.

THEORY
- Introduction
- Palaeolithic (Lower, Middle and Late): Soan Valley, Sanghao Cave, Rohri Hills
- Neolithic: Mehrgarh, Jhandi Babar, Kili Gul Muhammad, Gumla, Sheri Khan Tarakai, Sarai Khola and Jalipur.

PRACTICAL
- General Map of the region indicating physical features
- Location of prehistoric sites and monuments on the map
- Identification of characteristic features of various sites/periods
- Visit to sites and monuments in the area
- Report on the above

RECOMMENDED READINGS
4. Allchin, R & B. The Rise of Civilisation in India and Pakistan,


**Journals:**
Ancient Pakistan
Ancient Sindh
Frontier Archaeology
Pakistan Archaeology
Lahore Museum Bulletin
Journal of Asian Civilizations
Pakistan Heritage

**Course-225: Bronze Age Cultures of Pakistan**

**Learning outcome**
After completion of this course, the student would be able to analyze origin and evolution of Bronze Age Cultures of Pakistan.

**THEORY:**
- Introduction
- Indus Urbanization (Early, Mature and Late Period): Mehrgarh, Jhandi Babar, Amri, Kot Diji, Rahman Dheri, Gandi Umar Khan, Maru, Nausharo, Harappa, Mohenjo Daro
- Post Indus Period (Pirak, Jhukar, Jhangar, Cemetry-H).
- Gandhara Grave Sites in Taxilla, Swat, Dir, Chitral, the Peshawar valley and the emergence of Iron Age.

PRACTICAL:
- General Map of the region indicating physical features
- Location of sites and monuments on the map
- Identification of characteristic features of various sites/periods
- Identification of architectural and artefactual features of various periods
- Visit to historical sites and monuments in the area

RECOMMENDED READINGS:
13. Khan, F. A. The Glory that was Harappa, Karachi, n.d.
17. Lal, B. B. and Gupta, SP. Frontiers of the Indus Civilisation, New
Delhi, 1984.

**Journals:**
Ancient Pakistan
Ancient Sindh
East and West
Journal of Asian Civilizations
Lahore Museum Bulletin
South Asian Archaeology
Pakistan Archaeology
Pakistan Heritage.

**Semester – V**

<table>
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<tr>
<th>Course No.</th>
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<tr>
<td>311</td>
<td>FOUNDATION-VI: Ancient Religions of Pakistan and India</td>
<td>3</td>
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<tr>
<td>312</td>
<td>FOUNDATION-VII: Field Archaeology</td>
<td>4 (3+1)</td>
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<tr>
<td>313</td>
<td>MAJOR-I: Physical Anthropology</td>
<td>3</td>
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<td>314</td>
<td>MAJOR-II: Ancient Civilizations</td>
<td>3</td>
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<tr>
<td>315</td>
<td>MAJOR-III: Indus Civilization</td>
<td>3</td>
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<td><strong>Total Cr. Hrs.</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>
DETAIL OF COURSES

Course-311: Ancient Religions of Pakistan and India

Learning Outcomes
On completion, the student would be able to know about philosophy, beliefs, rituals and practices of religions embraced in ancient times by people of Pakistan and India.

1. Introduction
2. Jainism
   - Jain tradition regarding twenty-four tirthankaras (prophets)
   - Parshva and Mahavira
   - Mahavira's life sketch
   - Importance of the Ardha Magadhi canon
   - Mahavira's meeting with Goshala Mankhaliputta (head of the Ajivika sect)
   - Vardhamana Mahavira and his doctrine
   - Jainism after Mahavira
   - Jain canon, philosophy and icons.
3. Buddhism
   - Buddhist literature
   - Origin and development of Buddhism
   - Teachings of Gautama Buddha
   - Hinayana and Mahayana sects
   - Tripitakas (i.e. Vinaya, Sutta and Abhidhamma Pitakas)
   - Sthaviravadin School
   - Evolution of the Great Vehicle (Mahayana)
   - Mahasanghika and Sarvastivadins
   - Adi Buddhhas
   - Bodhisattvas
   - Lalitavistara
   - Buddhist ethics and morality.
4. Vedism, Brahananism and Hinduism
   - Vedas
   - Upanishads and freedom of religious speculation
   - Vaishnavism: Origin and evolution
   - Vasudeva-Krishna and the Bhagavat sect
   - The Bhagavad-Gita
   - Vishnu's avatars (incarnations)
   - The doctrine of four vyuhas (phases of conditioned spirit)
   - Images and their emblems of identification
   - Shaivism
   - The Pasupata sect and its teachings
• Shaivism as a popular cult
• Maheshvara and Mahadeva
• Shaiva images
• Important gods and goddesses and their characteristic iconographic features.

RECOMMENDED READINGS:

Course-312: Field Archaeology

Learning Outcomes
It will enable the student to comprehend methods and techniques of archaeological survey, excavation, chronology, analysis of artefacts, etc.

THEORY
1. Introduction
• Concept, definition and scope of Archaeology
• The New Archaeology
• History of archaeological research in South Asia to the present
• The role of Archaeology in national development
• Archaeology as a scientific discipline.

2. **Discovery**
   • How the ancient sites got buried
   • Avenues leading to the discovery of a site
   • Chance discoveries
   • Aerial reconnaissance: satellite imagery, aerial photography.

3. **Survey**
   • Geographical Information System (GIS)
   • Global Positioning System (GPS)
   • Map reading
   • Interpretation of aerial photographs
   • Photogrammetry
   • Survey at ground level
   • Chain survey
   • Contour map
   • Use of compass and theodolite
   • Electron Distance Measurer (EDM) /Total Station, 3D Scanner
   • Electrical resistivity survey
   • Proton magnetometer
   • Sound-wave survey

4. **Excavation**
   • Organization of an archaeological excavation
   • Excavation tools
   • Lay-out of an excavation
   • Excavation methods: sondages, grid-strip, quadrant, etc.
   • Types of Excavation: vertical, horizontal, rescue, etc.
   • Sampling
   • Trial trench
   • Demarcation of layers
   • Sample collection: soil, pollen, wood, charcoal, bones, etc.

5. **Excavation Problems**
   • Open hunting camps
   • Caves and rock-shelters
   • Villages and towns
   • Religious buildings: monastery, Hindu temple, mosque, etc.
   • Stupa
   • Burials
• Mud-brick structures
• Wooden structures
• Pit excavation.

6. **Recording**
   • Three dimensional measurements (=context)
   • Graph plotting
   • Record card
   • Computer recording
   • Field diary
   • Archaeological photography
   • Archaeological drawing.
   • Artefact distribution map

7. **Pottery yard**
   • Layout of pottery-yard
   • Washing/cleaning and registration
   • Classification
   • Typology
   • Pottery tabulation

8. **Registration, Cataloguing**
   • Accession register
   • Cataloguing of antiquities
   • Antiquity distribution map.

9. **Time**
   • The “Three age system”
   • Relative and absolute chronology
   • Stratigraphy and law of superimposition
   • Pleistocene geochronology
   • Pollen analysis
   • Varve analysis
   • Ordering of artefacts
   • Cross-dating with objects of known age
   • Dendrochronology
   • Thermoluminiscence dating
   • Radiocarbon dating
   • Potassium-Argon dating
   • Obsidian-hydration dating
   • Fission-track method
   • Archaeomagnetic dating.

10. **Reconstruction of Environment, Subsistence and Economic Patterns**
    • Reconstructing ancient environments
    • Palynology
    • Subsistence patterns
- Animal bones
- Vegetal remains
- Agriculture
- Domestic and wild animals
- Birds, fish, and molluscs
- Rock art
- Ancient dietary patterns
- Interaction network system.

11. **Ordering and Interpretation**
- Seriation
- Typology
- Ethnographic analogy and comparative method
- Probability theory, statistical techniques
- Culture change: invention, migration and diffusion.

12. **Computer Application in the Analysis of Archaeological Data**
13. **Report Writing and Publication**

**PRACTICAL**
- Pre-excision exploration
- Archaeological surveying
- Use of survey equipment
- Site documentation: photographic, linear, visual
- Pre-excision planning
- Excavation and documentation of archaeological features
- Three dimensional documentation of structures, artefacts, sections
- Handling, classification and tabulation of pottery in pottery-yard
- Application of basic conservation techniques to artefacts in the field
- Maintenance of field diaries
- Artefact drawing
- Use of computer-based techniques for seriation, cluster-analysis.

**RECOMMENDED READINGS:**

**Course-313: Physical Anthropology**

**Learning Outcomes**

After completing this course, the student will comprehend different theories and stages of evolution, their physical features and environmental changes with respect to time and space. It will enable the student to analyze the development of lithic technology authored by the respective species of early man.

**THEORY:**

1. **Introduction**
   - Concept, definition, main features and scope of Anthropology
   - Main divisions of Anthropology: physical, cultural and social
   - Relation of Anthropology with biological and social sciences
   - Application of Anthropology in today’s world.
2. **Life on Earth**
   - Life on earth
   - Animal-kingdom
   - Mammals, characteristic features of mammals
   - Primate group, behaviour of primate group
   - Apes, characteristic features of apes.
3. **Evolution Theories**
   - Scientific theories.
   - Darwin Theory
   - Elaine Morgan Theory
   - Killer Ape Theory of Human Evolution
   - Religious Theories

4. **Early Ancestors of Man**
   - Ramapithecus
   - Bipedalism
   - Early hominid foot prints

5. **Australopithecines**
   - Australopithecus Afarensis
   - Australopithecus Africanus
   - Australopithecus Robustus
   - Australopithecus Boisei
   - Zinjanthropus.

6. **Homo**
   - Homo Habilis
   - Homo Erectus: Pithecanthropus, Sinanthropus.

7. **Neanderthal man**
8. **Homo Sapien**
9. **Homo Sapien Sapien** (Modern man)
10. **Human genetics and Racial groups**

**RECOMMENDED READINGS**

7. Dennell, R.W., Rendell, H.M. and Halim, M.A. New Perspectives on the Palaeolithic or Northern Pakistan, In *South Asian Archaeology*
10. Hoebel, E. A. Anthropology: The Study of Man

Course-314: Ancient Civilizations

Learning outcomes
After completion of this course, the student will be able to analyze different aspects of various ancient world civilizations.

THEORY:
1. Introduction
   • Concept of culture and civilization
   • Elements of civilization
   • Basic conditions of civilization.
2. Mesopotamian Civilization
   • Environmental background
   • Early cultures of Mesopotamia
   • Socio-political set-up of the Sumerians, Akkadians, Babylonians, Assyrians and Chaldeans
   • Various aspects of civilization: art, architecture, writing, seals, religion and economy.
3. **Egyptian Civilization**
   - Egypt geophysical history and its impact on local cultures
   - Art and architecture
   - Religion
   - Writing system
   - Contribution in literature, science, philosophy, medicine.

4. **Chinese Civilization**
   - Shang Dynasty
   - Chou Dynasty
   - Chen Dynasty
   - Han Dynasty
   - Art and architecture
   - Contributions in philosophy.

5. **Iranian Civilization**
   - Origin of Iranian Civilization
   - Achaemenians: history and formation of their empire
   - Provincial administration system
   - Zoroastrian Religion
   - Art and architecture
   - Cyrus
   - Darius I and Darius II
   - Sasanians.

6. **Greek Civilization**
   - Origin and development of the Greek Civilization
   - Origin of city states
   - Hellenic and Hellenistic phases
   - Art and architecture
   - Literature
   - Philosophy
   - Science.

7. **Roman Civilization**
   - Origin and development of Roman Empire
   - General characteristics of Roman Culture
   - Art and architecture
   - Philosophy and science
   - Roman law.

**RECOMMENDED READINGS:** (Dr Tauqeer to update the list)
3. Roaf, M. *Cultural Atlas of Mesopotamia and the Ancient Near East*

**Course-315: Indus Valley Civilization**

**Learning outcomes**
After completion of this course, the student will be able to analyze different aspects of the Indus civilizations.

**THEORY:**
1. **Introduction**
   - Terminology of the Indus Civilization
   - Environmental background
   - Discovery of the Indus Civilization
   - Present state of research on the Indus Civilization.
2. **Early Indus Period (from Mehrgarh to the Rise of Mature Indus Period)**
   - Distribution of Settlements (Tochi-Gomal/Hakra/Amrians/Kot Dijian / Harappan)
   - Development of art and architecture
   - Major settlements of Early-Indus Civilization.
3. **Mature Indus Period**
   - Settlement pattern
   - Art and architecture
   - Town planning
   - Seals
   - Major crafts
   - The Indus script
   - Trade relations
   - Decline of the Indus Civilization.
4. **Late Indus Period**
   - Settlement pattern
   - Late Indus Cultures in Sindh, Punjab, Balochistan, and Gujarat.

**RECOMMENDED READINGS:**


42. Various articles on preservation of Mohenjo Daro.

43. Vats, M. S. *Excavation at Harappa*, 2 Vols, New Delhi, 1940.

Semester-VI

<table>
<thead>
<tr>
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<th>Course Title</th>
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<td>FOUNDATION-VIII: Museums Studies</td>
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<tr>
<td>322</td>
<td>FOUNDATION-IX: Cultural Tourism in Pakistan</td>
<td>3</td>
</tr>
<tr>
<td>323</td>
<td>MAJOR-IV: Muslim History of South Asia</td>
<td>3</td>
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<td>324</td>
<td>MAJOR-V: Cultural Anthropology</td>
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<td>325</td>
<td>MAJOR-VI: Provincial Cultural Heritage</td>
<td>3</td>
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<td><strong>Total Cr. Hrs</strong></td>
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DETAILS OF COURSES

Course 321: Museums Studies

Learning Outcomes

On completion, the student would be able to know about the concept, origin, development, technical aspects, management and scope of the Museum.
1. **Introduction**  
   - Definitions of UNESCO, ICOM, ICCROM, AAM Management etc.

2. **Museum and Its Function**  
   - Definition and its scope  
   - Origin and development of Museum  
   - Functions: collection, recording, preservation, exhibition and education  
   - Different types of museums  
   - History of Museology in Pakistan  
   - Problems and prospects of museums in Pakistan.

3. **Museum Administration/Management**  
   - General organization  
   - Staff and their functions: Curator, technical, public-relation, educational, clerical, and contingent  
   - Collections: Primary documentation, study, research, storage and display.  
   - Fund generating and Marketing

4. **Museum Security**  
   - Walkthrough gates  
   - CCTV cameras  
   - Security staff and equipments  
   - Digital scanners  
   - Burglar alarm  
   - Emergency alarm  
   - Walky-talky  
   - Other security essentials

5. **Documentation**  
   - Record keeping: Registers/Computer punch cards  
   - Temporary accession  
   - Permanent accession  
   - Record of storage  
   - Gallery record.

6. **Care and Storage of Museum Objects**  
   - Guidelines for handling of Museum objects  
   - Objects on display  
   - Objects in stores  
   - Storage conditions  
   - Accessibility  
   - Record of movement of museum exhibits & reserve  
   - Care against theft, dampness, dust, temperature, and light  
   - Care and repair of museum objects.

7. **Museum Architecture**  
   - Requirement of museum building
• Plan for a museum
• Storage facilities
• Display galleries
• Service facilities: Library, photography, offices, workshops, Laboratories, etc.
• Public facilities: Cafeteria, gift-shop, lavatories.

8. **Museum Exhibition**

• Permanent exhibition
• Planning and setting up an exhibition
• Showcase designing
• Labels
• Lighting
• Background of exhibits
• Mounting objects
• Temporary exhibition
• Travelling exhibition.

9. **Museum Education Research Programme**

• Educational programme of a museum: Lectures, seminars, film- shows and cultural-shows.
• Research and publications
• Research facilities in a museum
• Museum library
• Visit to different Museums

**RECOMMENDED READINGS:** *(Dr Farzand to update the list)*

8. UNESCO, *The Organization of Museums; Museums Association of Pakistan; Canadian Museums Association; Studies in Conservation; International Council of Museums; Journal of the American Group for Conservation; Technology and Conservation.*
Learning outcomes
After completion of this course, the student would be able to analyze relationship between cultural heritage and tourism, identify, develop, manage and market the rich cultural heritage of Pakistan.

1. Introduction
   - Definition of Culture, Tourism and Cultural Tourism
   - Characteristics of Cultural Tourism
   - Types and Scope of Cultural Tourism
   - Cultural Profile of Pakistan
   - Maps and Tourist Literature
2. Cultural Tourism Attractions (Resources) in Pakistan
   - Tangible Attractions:
     a) Archaeological Sites
     b) World Heritage Sites
     c) Museums
     d) Monuments and Memorials, and
     e) Arts and Crafts etc
   - Intangible Attractions:
     a) Fairs and Festivals
     b) Gastronomy
     c) Performing Art
     d) Spiritual/Religious, and
     e) Life Style etc
3. International Charter on Cultural Tourism
   - International Cultural Tourism Charter, “Managing Tourism at Places of Heritage Significance” (ICOMOS)
4. Cultural Tourism Management
   - Situational Analysis
   - Market analysis
   - Issues
   - Impacts
   - Framework for developing a cultural tourism product
   - SWOT and PEST analysis
Partnerships

5. Case Studies: Based on Field Work

RECOMMENDED READINGS

Other Readings:
- UNESCO Publications
- UNWTO Publications
- WTTC Publications
Course 323: Muslim History of South Asia

Learning Outcomes
On completion, the student would be familiarized with the conquest of different parts of South Asia at the hands of various Muslim invaders, to analyze cultural, political, religious and social conditions of the present-day South Asia.

Contents
1. Introduction
2. Arabs
   - Early contact
   - Political condition and early dynasties of Sindh on the eve of Arab invasion
   - Conquests of Balochistan, Sindh, Multan and the Khyber Pakhtunkhwa
   - Muslim rule in Baluchistan and Sindh under the Arab Caliphate.
3. Turks
   - Trans Khyber activities of Ghaznavids and the rise and fall of Lahore as a centre of Muslim State CE 997-1210
   - The rise of the Ghaurids and the establishment of Delhi as the capital of Muslim India
   - The Delhi Sultanate with Multan, Uchch and Lahore as centres in the west and Awadh and Bengal in the east CE 1150 to 1325.
   - Fragmentation and Turbulence CE 1325 to 1425.
4. Afghans
   - Lodhis
   - Sikandar Lodhi, his administration and religious policy
   - Ibrahim Lodhi and his weaknesses
   - End of the Sultanate of Delhi
   - Suris
   - Sher Shah Suri
   - Early life, capture of the throne and conquests; Reforms, administration and Public welfare projects; achievements as a ruler; Successors of Sher Shah; End of Suri dynasty.
5. Mughals and Post Mughals
   - Phases of establishment and transition from Sultanate to Badshahat CE 1526 to 1576
   - Mughal society, culture and administration CE 1576 to 1707
   - Late Mughal phase CE 1707 to 1857.
6. Provincial Chapter
   - Every province will develop its Muslim period history
RECOMMENDED READINGS:
2. Amjid, Y. Tareekh-e-Pakistan (Urdu), Vols. I & II.
6. Cambridge History of India, Vols. II, III & IV.
8. Elliot and Dowson, The History of India as Told by Its Own Historians, all Vols, Lahore, 1976 (1st pub. 1867-77).

Course 324: Cultural Anthropology

Learning Outcomes

THEORY:
1. Introduction
   - Concept, definition and scope of Cultural Anthropology
   - Effects of physical environment on the growth of cultures
   - Geological strata and interpretation of associated finds
   - Chronological periods in the history of the earth
   - Pleistocene chronology
2. **Concept of Culture**
   - Man, culture and society
   - The evolution of culture
   - Culture is learned
   - The concept and method of cultural ecology
   - Culture and language
   - Culture and personality.

3. **Lower Palaeolithic Culture**
   - Characteristic features
   - Cultures of Lower Palaeolithic Period
   - Principal tool-types, their manufacturing techniques and probable functions.

4. **Middle Palaeolithic Culture**
   - Characteristic features
   - Cultures of Middle Palaeolithic Period
   - Principal tool-types, their manufacturing techniques, and probable functions
   - Intellectual developments: art and religion.

5. **Upper Palaeolithic Culture**
   - Characteristic features
   - Cultures of Upper Palaeolithic Period
   - Principal tool-types, their manufacturing techniques and probable functions
   - Intellectual developments: art and religion.

6. **Mesolithic Culture**
   - Characteristic features
   - Cultures of Mesolithic Period
   - Principal tool types, their manufacturing techniques and probable functions
   - Intellectual developments: art and religion.

7. **Neolithic Revolution**
   - Domestication of plants and animals
   - Evolution of stone-tool technology
   - Introduction of ceramics
   - Evolution of permanent settlements
   - Evolution of related arts and crafts
   - Early Neolithic Cultures.

**RECOMMENDED READINGS:**
24. Sankalia, H. D. Stone Age Tools, Their Techniques, Names and
Probable Functions, Poona, 1964.

Journals:
Ancient Pakistan
Ancient Sindh
Journal of Asian Civilizations
Pakistan Archaeology
Pakistan Heritage.

Course 325: Provincial Cultural Heritage

Learning Outcome
On completion, the course would provide a firm base to understand cultural heritage and identity of their respective provinces.

Contents
Every University will develop its own course for this paper. This course will include provincial archaeological heritage in different provinces of Pakistan. Each university will develop their respective course by concentrating on the respective provincial archaeological heritage and museums.

Semester VII

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<td>412</td>
<td>MAJOR-VIII: Muslim Architecture of Pakistan and India</td>
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<td>Total Cr. Hrs.</td>
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</table>
DETAIL OF COURSES

Course 411: Muslim Art: Calligraphy, Painting and Minor Arts & Crafts

Learning Outcomes
After completing the course, the student would be able to analyze different types of Muslim Arts as developed in various parts of the world.

Contents

Introduction

1. Calligraphy
   - Origin and development of Arabic script
   - Status or position of a calligrapher
   - Significance of calligraphy in Islamic arts
   - Origin and development of calligraphy
   - Principal forms of calligraphy
   - Sub styles of calligraphy
   - Master calligraphers of Pakistan.

2. Schools of Painting
   - Early Arab
   - Mesopotamian
   - Mongol
   - Persian
   - Mughal.

3. Minor Arts & Crafts
   - Metalwork
   - Glasswork
   - Woodwork
   - Book illumination
   - Bookbinding
   - Ceramics.

RECOMMENDED READINGS:
6. Critchlow, K. Islamic Patterns: An Analytical and Cosmological

Course 412: Muslim Architecture of Pakistan and India

Learning outcomes
On completion of this course, the student would be able to identify sources and development of Muslim Architecture evolved under different ruling and community patrons.

Contents

Introduction
1. Arab Period
   • Settlement pattern and architecture of Banbhore
   • Settlement pattern and architecture of Mansurah.
2. Ghaznavid/Ghaurid Period
   • Tomb of Abdullah bin Haroon in Lasbela
   • Udigram Mosque
   • Tomb of Khalid bin Walid
   • Tomb of Sadan Shaheed
   • Tombs at Lal Mahra.
3. Sultanate Period
   • Monuments of Delhi and Ajmer: Quwwat-ul-Islam Mosque, Qutb Minar, Alai Darwaza, Tughlaqabad, Buildings of Feroz Shah Tughlaq, Tombs of Syeds and Lodhis, the Suri period buildings.

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4. **Mughal Period**
   - Monuments of Agra: Taj Mahal, Akbar’s tomb
   - Monuments of Delhi: Red Fort, Royal Mosque (or Shahi Masjid)
   - Monuments of Fatehpur Sikri
   - Monuments of Lahore: Badshahi Mosque, Wazir Khan Mosque, Shalimar Garden, Jahangir’s tomb and Lahore Fort
   - Monuments of Peshawar: Mahabat Khan Mosque, Palosi Piran complex
   - Monuments of Thatta: Shah Jahan’s Mosque and Dabagir Mosque, Makli Hill Monuments.

5. **Regional Styles**
   - Monuments of the Kalhora and Talpur Rulers of Sindh
   - Chaukandi type tombs of Sindh and Balochistan
   - Monuments of the Punjab
   - Monuments of the Khyber Pakhtunkhwa
   - Wooden architecture of the Northern Areas of Pakistan.

**RECOMMENDED READINGS: (Dr Farzand to update)**

20. Masih, F. Excavation at Sui Vihar and Archaeological Reconnaissance of South Punjab, Lahore: University of the Punjab, 2013

**Course 413: Research Methodology**

Definition, problems, types etc.
- Archaeological research design
- Archaeological research project
- Formulation of hypothesis
- Implementation of research
- Data collection, different methods/techniques, etc.
- Analysis of archaeological data
- Interpretation and synthesis of archaeological data
- Research report/Seminar/Oral examination

**RECOMMENDED READINGS:**
Course 414: Ancient Art and Architecture of Pakistan and India

Learning Outcomes
After completion of this course, the student would get familiarized with architectural and artistic traditions of Pakistan and India of the pre-Muslim period.

Contents

1. Architecture
   - Vedic Period architectural traditions
   - Mauryan architecture
   - Buddhist architecture: stupa, monastery, rock-cut sanctuaries, etc.
   - Hindu and Jain architecture.

2. Art
   - Mauryan art
   - Shunga art
   - Early Andhra art
   - Later Andhra art
   - Mathura art (Kushan Period)
   - Gandhara art (Kushan Period)
   - Origin of the Buddha image
   - Gupta art
   - Ajanta cave paintings
   - Gandhara School of Painting
   - Buddhist Art of Kashmir
   - Iconography of Hindu Triad
   - Rock Art of Pakistan.

RECOMMENDED READINGS:
10. Cunningham, Sir A. *Stupa of Bharhut*.
34. Rowland, B. *The Wall Paintings of India, Central Asia and Ceylon*, Boston, 1938.

Journals:
Archaeological Survey of India, Annual Report
Ancient Pakistan
Athariyyat (Archaeology)
East and West
Gandharan Studies
Journal of the Asiatic Society of Bengal
Journal of Asian Civilizations
Lahore Museum Bulletin
Pakistan Archaeology
Pakistan Heritage.

Course 415: Numismatics of Pakistan and India

Learning outcomes
On completion, the student would be able to learn about the history and development of coinage, to reconstruct ancient history, to study sundry aspects of cultural, socio-economic, political and religious conditions, science of manufacturing coins, metallurgy, ores of different metals,
making alloys, etc.

Contents

This course is divided into two parts:
a) Numismatics of Pre-Muslim period of Pakistan and India and
b) Numismatics of Muslim period of Pakistan and India.

1. **Introduction**
   - Numismatics: Definition, scope problems and significance
   - Metallurgical studies
   - Mints
   - Cataloguing
   - History of coins
   - Techniques of manufacturing coins.

2. **Numismatics: Pre-Muslim Period**
   - Antiquity of coinage in Pakistan and India
   - Punch marked coins
   - Indus-Greek coins
   - Coins of the Indo-Scythians and Indo-Parthians
   - Kushan coins
   - Huna coins
   - Hindu Shahi coins.

3. **Numismatics: Muslim Period**
   - Arab period Coins in Pakistan
   - Coins of the Ghaznavid and Ghaurid rulers
   - Coins of the early Sultanate period (the Khaljis, Tughlaqs, Syeds, Lodhis, Suris)
   - Coins of the Mughal rulers
   - Coins of the Durranis and the Sikhs
   - Coins of the Colonial period.

RECOMMENDED READINGS:
11. Khan Lanepole, Catalogue of the Muslim Coins in the British Museum

Journals:
Ancient Pakistan
Archaeological Survey of India, Annual Reports
East and West
Frontier Archaeology
Course 416: Research Project/Internship

Semester-VIII

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<tr>
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<td>423</td>
<td>ELECTIVE-II (within MAJOR): Archaeological Conservation</td>
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<td>424</td>
<td>ELECTIVE-III (within MAJOR): Rock Art of Pakistan</td>
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<td>425</td>
<td>ELECTIVE – IV (within MAJOR): Ancient Art and Architecture of Pakistan and India</td>
<td>3</td>
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<td><strong>Total Cr. Hrs.</strong></td>
<td><strong>16</strong></td>
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</tbody>
</table>

DETAIL OF COURSES

Course 421: Research Project / Internship

Course 422: Palaeography and Epigraphy of Pakistan and India

Learning Outcomes
After completing this course, the student would be able to know about the origin and development of ancient scripts, styles, use of ancient languages in epigraphs, techniques of engraving on hard surfaces of rocks, slabs, metal plates, etc. The major outcome of this course would be to know about valuable historical data contained within these epigraphs.

Contents
1. Introduction to different ancient Indian scripts
2. Origin of writing in Pakistan and India (South Asia)
3. **Indus Script**
   - History of discovery
   - Area
   - Period
   - Materials
   - Origin
   - Decipherment.

4. **Brahmi Script**
   - Area
   - Materials
   - Characters and symbols
   - Origin
   - Decipherment
   - Development
   - Mauryan or Early style
   - Provincial style
   - Regional style
   - Proto-Sharada
   - Sharada
   - Devanagri.
   - Tibetan

5. **Kharoshthi Script**
   - Area
   - Materials
   - Characters and symbols
   - Origin
   - Decipherment
   - Development
   - Ashokan style
   - Scytho-Parthian style or transitional phase of writing
   - Kushan style or cursive form of writing
   - Decline

6. **Pushkarasari Script**
   - History of discovery
   - Area
   - Period
   - Materials
   - Origin
   - Decipherment
   - Characters and symbols
   - Development

7. **Epigraphy**
   - Importance of Epigraphic research in Archaeology
• History of Epigraphic research in Archaeology
• Survey of the Epigraphic records
• Epigraphy as a source of ancient history of Pakistan and India.

RECOMMENDED READINGS

Journals:
Ancient Pakistan
Athariiyat
Epigraphia Indica
Journal of Asian Civilizations
Journal of Humanities and Social Sciences
Journal of the Royal Asiatic Society
Indian Archaeological Studies
Course 423: Gandhara Civilization

Learning outcomes

After completion, the students would be able to know the history and salient features of the ancient cultures and civilization that evolved in ancient Gandhara.

Contents

1. Introduction
   - Nomenclature
   - Historical geography of Gandhara.
2. The Origin of Second Urbanization in Pakistan
   - Pushkalavati: Bala Hissar, Shaikhan Dheri, Aziz Dheri
   - Taxila: Bhir Mound, Sirkap, Sirsukh.
3. Major Religions of Gandhara
   - Buddhism
   - Hinduism.
4. Synthesis of Cross-Cultural Currents and the Emergence of Gandhara Civilization
5. Arts
   - Sculptural Art
   - Paintings
   - Rock Art: Carvings and Engravings.
6. Architecture
   - Religious Architecture: Stupa, Temple, Monastery,
   - Secular Architecture: Settlements and Forts.
7. Numismatics and Palaeography
8. Interaction Zone
   - Influences from the East and West.
9. Silk Road
   - Trade along the Silk Road.
10. Decline
    - Causes: Cultural, Environmental, Military and Spiritual.
11. Legacy of the Gandharan Civilization
RECOMMENDED READINGS

2. Barger, E. and Wright, P. Excavations in the Swat and Explorations in the Oxus Territories of Afghanistan, Memoirs of Archaeological Survey of India, No. 64, Delhi, 1941.

**Journals:**
- Ancient Pakistan
- Athariyyat (Archaeology)
- Pakistan Archaeology
- Pakistan Heritage
- East and West
- Silk Road Art and Archaeology
- South Asian Studies
- South Asian Archaeology.

**Course 424: Archaeological Conservation**

**Learning outcomes**
After completing this course, the student would get familiarized with the basic techniques, principles of conservation, ancient materials, and conservation problems faced by the moveable and immoveable archaeological heritage.

**Contents**

**THEORY:**
- Introduction
(Conservation, Restoration, Preservation, Rehabilitation, Terminology, Development, Adaptation, Reconstruction and Anastylosis)

- **Ethics of Conservation.**
  - Principles of Conservation.
- **International Charters of Conservation for the Conservation and Restoration of Archaeological Sites and Monuments:**
  1. The Venice Charter 1964.
  5. The Burra Charter (The Australian National Committee of ICOMOS, 1999)

A. **ARTEFACTS**

Introduction
- Pre-excavation considerations
- Field laboratory
- First-aid treatment to archaeological objects
- Environmental control of excavated artefacts
- Different types of materials used for the conservation and restoration of archaeological artefacts
- Conservation in practice: a collaborative exercise.

**Simple Chemistry: Definition of Basic Terms**
- Acid, Base, Alkali, pH
- Humidity: relative humidity, micro-organisms
- Temperature
- Light and its units
- Conductivity
- Atmospheric pollution.

**Agents of Deterioration and Preservation**
- Introduction
- Organisms/Micro-organisms
- Animals and plants
- Archaeological environments
- Agents of decay
- Water, Oxygen, acidity and alkalinity, redox potential, salts
- Temperature
- Conditions in archaeological environments for preservation.
General Techniques of Conservation
- Siliceous and related materials
- Metals
- Organic materials
- Preservation of archival materials: paper conservation.

B. BUILT HERITAGE

- Documentation of Archaeological Sites and Monuments.
  i. Photographic Documentation.
  ii. Plane Table Survey.
  iii. Triangulation.
  iv. Theodolite.
  v. Total Station.
  vi. Maps and plans.
- Materials:
  i. Study of different materials like Baked Brick, Unbaked Brick, Lime, Stone, Mud and Wood.
  ii. Chemical Analysis of different mortars used by the builders in the construction of old buildings.
- Factor Contributing to the Deterioration of Monuments and Sites:
  I. Man Made Damages:
     Exhaust of vehicles, Fire, Encroachment, Faulty services like water supply and sewer lines, Traffic vibration. Industrial pollution and defective conservation work.
  II. Natural Damages:
     Sun light, Thunderstorm, Winds, Windblown sand, Floods, Snow, Salinity, Rising of water table, Rains, Plants, animals and Earthquakes.
  III. The study of degradation and deterioration by biological and environmental factors
- Steps for Conservation:
  I. Study of Symptoms.
  II. Identification of Problems.
  III. Treatment.

- Conservation of Structural members of the monuments:
  Arches, vaulting, walls, door openings, foundation, beams, columns. Domes, Drainage System.
- Conservation of decorative elements of monuments:
  Fresco Painting, Stucco Tracery work, Pietra Dura work, Inlay Work, Stone Carving, Mirror Work, Tessellated Flooring and Tile Mosaic work.
• Use of Modern Techniques in Conservation of Site/Monuments.
• Organization and Administration in Conservation and Restoration

PRACTICAL
• Documentation of a Monumental building.
• Study and Identification of the conservation problems faced by the site/monument and their treatment in accordance with prevailing conservation principles.
• Preparation of Development Plan of the Site/ Monument with specific reference to boosting safe tourism.
• Study of environment of the Monument.

RECOMMENDED READINGS
1. Agrawal, O.P. Care and Preservation of Museum Objects, National Research.
9. Hamilton, Donny L. Methods of Conserving Archaeological material from underwater sites, Conservation Research Laboratory Center for Maritime Archaeology and Conservation, Texas: A & M University, 1999
10. Hodges, H., ed., In Situ Archaeological Conservation, Santa Maria, 1987
Course 425: Rock Art of Pakistan

Learning outcomes
On completion, the student would be able to know about historical, socio-cultural, religious, economic, political, environmental conditions, flora, fauna and exchange of ideas of different people living in ancient times in diverse parts of the country.

Contents

Introduction
- Definition, types, scope and importance
- Evolution, terminology
- Brief History of rock art research

Recording
- Survey and recording
- Topography and documentation
- Regionalization and functions

Prehistoric Period
- Middle Paleolithic
- Upper Palaeolithic
- Neolithic

Protohistoric Period
- Chalcolithic
- Bronze Age
- Iron Age
Historic Period

- Buddhist
- Hindu
- Inscriptions
- Symbols and interpretation

Rock Paintings

- Techniques and nature of rock painting tradition
- Investigation and environment of rock painting sites
- Components of Paintings
- Upper Paleolithic Paintings
- Neolithic Paintings
- Historic Paintings

Dating

- Dating techniques for petroglyphs / paintings
- Weathering and patina
- Superimposition
- Comparative and stylistic analysis

Rock Art Sites

- Azad Jammu & Kashmir
- Gilgit Baltistan
- Khyber Pakhtunkhwa
- Punjab
- Sindh

Management and Conservation

- Conservation techniques
- Conservation policy
- Equipments for treatment
- Water impact management of treatment
- Salt decay of treatment
- Visitor management
- Vandalism graffiti etc.

RECOMMENDED READINGS


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RECOMMENDATIONS
The National Curriculum Revision Committee (NCRC) after revising courses for BS (Archaeology) unanimously resolved the following recommendations to the HEC to be supported and forwarded for implementation to the concerned quarters/agencies.

1. Field and practical work (exploration, survey, excavation, museum studies, sites and monuments study) is required and compulsory for acquiring BS, MS degrees in Archaeology. It is, therefore, recommended that sufficient amount of funds should be allocated in the budget/grants for the Departments of Archaeology in each University of the country on permanent recurrent basis.

2. Archaeology is a scientific discipline and depends on various laboratory and field equipment for analysis of archaeological data. Teaching departments of all the universities should, therefore, be strengthened by establishing Archaeological Documentation Laboratories and be provided with electronic equipments, such as computers, plotters, printers, digital cameras, electronic microscopes, theodolites, EDMs (Electron Distance Meter), Total station, GPR, Soil augur, Proton Magnetometer, GPS (Global Positioning system), metal detectors, etc.

3. Laboratories for conservation of cultural property should be established at each of the teaching departments of archaeology.

4. Laboratories for palaeontological and palynological studies should be established at each of the departments of archaeology.

5. Laboratories for C¹⁴ and thermoluminescence dating should be established at each of the teaching departments.

6. Like a laboratory, a teaching museum is an essential component for an archaeological research. Therefore, it is resolved that museums should be established at each department of all the universities like the one at Peshawar University and adequate budget be provided to them on annual basis.

7. Funds for holding national and international symposia/conferences, seminars and workshops be provided to review the archaeological research carried out in Pakistan.

8. Funds should be allocated for establishing a “Reading Material Resource Management Cell” at the Institute of Archaeology, University of Peshawar, being the oldest and well-established Institution in the country.

9. Archaeology plays an important role in the strategic, economic, educational and political conditions of a country. It is, therefore, recommended that full-fledged departments of Archaeology be established at the Universities of Balochistan, Karachi, Bahawalpur, Multan, AJK, University of Sindh (Jamshoro), Allama Iqbal Open University (Islamabad), University of Sargodha,
Karakorum International University (Gilgit) and Abdul Wali Khan University (Mardan).

11. Archaeology being taught in all the three Provinces at the University level, it is therefore recommended that it should be included in the competitive examinations at the Provincial and Federal levels.


13. The Department of Archaeology, University of Peshawar, being the oldest and well-established teaching and research Department in Pakistan, should be upgraded to the status of “Centre of Excellence in Archaeology” by providing sufficient funds and physical facilities/infrastructure.

14. To protect cultural heritage of the Country, a consultant archaeologist and museologist should be nominated from teaching departments of Archaeology on various local bodies: Auqaf Department, Environmental Department, and City Development Authorities which are mainly concerned with building, demolition, development and rebuilding processes in rural/urban areas.

15. Culture Ministries (Federal and Provincial) should be approached to establish a fund under the title “Contract Archaeology”. One per cent (01%) money from all Government Contracts should go to this fund, which will be utilized in rescuing cultural (archaeological) material where threatened by such projects (such as building and developmental works).

16. The Federal and Provincial governments should be approached to advise the “Tourism departments” to recruit the degree holders of Archaeology on priority basis, since study of Cultural Tourism is an integral part of the curriculum of Archaeology in Pakistan.

17. The process of conducting excavation and exploration at all the provinces should be reviewed in order to rescue important sites from being destroyed by illegal digging/illicit traders. Fund should be provided to preserve and conserve the historical monuments throughout the country. In this regard coordination among the Federal, Provincial and Teaching Departments in the country is highly desired.

18. Government should adopt an aggressive and forward-looking policy towards the development of Cultural tourism in the country.

19. Switching over to the new programme will require to enhance infrastructure and faculty to over three times of the existing facilities to accommodate and facilitate growing number of students in the next two to three years.

20. Museums housing local cultural material should be established in all district headquarters. The federal government has already been agreed to recognize the importance of our cultural property. The government should make it practical to encourage tourism as a
foreign exchange earning industry.

21. A course on Conservation be introduced in the degree programmes of Architecture, Cultural Heritage Management, and Civil Engineering.

22. The members of the committee unanimously decided that there should be follow up of the recommendations suggested previously.
OBJECTIVES: Enhance language skills and develop critical thinking.

Course Contents

Basics of Grammar
Parts of speech and use of articles
Sentence structure, active and passive voice
Practice in unified sentence
Analysis of phrase, clause and sentence structure
Transitive and intransitive verbs
Punctuation and spelling

Comprehension
Answers to questions on a given text

Discussion
General topics and every-day conversation (topics for discussion to be at the discretion of the teacher keeping in view the level of students)

Listening
To be improved by showing documentaries/films carefully selected by subject teachers

Translation skills
Urdu to English

Paragraph writing
Topics to be chosen at the discretion of the teacher

Presentation skills
Introduction

Note: Extensive reading is required for vocabulary building

Recommended Books:
1. Functional English
   a) Grammar

b) Writing

c) Reading/Comprehension

d) Speaking

English II (Communication Skills)

Objectives: Enable the students to meet their real life communication needs.

Course Contents

Paragraph writing
Practice in writing a good, unified and coherent paragraph

Essay writing
Introduction

CV and job application
Translation skills
Urdu to English

Study skills
Skimming and scanning, intensive and extensive, and speed reading, summary and précis writing and comprehension

Academic skills
Letter/memo writing, minutes of meetings, use of library and internet

Presentation skills
Personality development (emphasis on content, style and pronunciation)
Note: documentaries to be shown for discussion and review

Recommended Books

Communication Skills

a) Grammar

b) Writing

c) Reading
   2. Reading and Study Skills by John Langan.

English III (Technical Writing and Presentation Skills)

Objectives: Enhance language skills and develop critical thinking

Course Contents

Presentation skills

Essay writing
Descriptive, narrative, discursive, argumentative

Academic writing
How to write a proposal for research paper/term paper

How to write a research paper/term paper (emphasis on style, content, language, form, clarity, consistency)

Technical Report writing

Progress report writing
Note: Extensive reading is required for vocabulary building

Recommended Books

Technical Writing and Presentation Skills

a) Essay Writing and Academic Writing

b) Presentation Skills

c) Reading
   The Mercury Reader. A Custom Publication. Compiled by northern Illinois University. General Editors: Janice Neulib; Kathleen Shine Cain; Stephen Ruffus and Maurice Scharton. (A reader which will give students exposure to the best of twentieth century literature, without taxing the taste of engineering students).
Pakistan Studies
(Compulsory)

Introduction/Objectives
- Develop vision of historical perspective, government, politics, contemporary Pakistan, ideological background of Pakistan.
- Study the process of governance, national development, issues arising in the modern age and posing challenges to Pakistan.

Course Contents
1. Historical Perspective:
   b. Factors leading to Muslim separatism
   c. People and Land
      i. Indus Civilization
      ii. Muslim advent
      iii. Location and geo-physical features.

2. Government and Politics in Pakistan:
   Political and constitutional phases:
   a. 1947-58.
   c. 1971-77.
   d. 1977-88.
   e. 1988-99.
   f. 1999 onward.

3. Contemporary Pakistan:
   a. Economic institutions and issues.
   b. Society and social structure.
   c. Ethnicity.
   d. Foreign policy of Pakistan and challenges.
   e. Futuristic outlook of Pakistan.
Recommended books
ISLAMIC STUDIES
(Compulsory)

Objectives
This course is aimed at
1. To provide Basic information about Islamic Studies.
2. To enhance understanding of the students regarding Islamic Civilization.
3. To improve Students skill to perform prayers and other worships.
4. To enhance the skill of the students for understanding of issues related to faith and religious life.

Course Contents

Introduction to Quranic Studies
1) Basic Concepts of Quran.
2) History of Quran.
3) Uloom-ul–Quran.

Study of Selected Text of Holy Quran
2. Verses of Surah Al-Hujrat Related to Adab Al-Nabi (Verse No-1-18).
4. Verses of Surah al-Furqan Related to Social Ethics (Verse No.63-77).
5. Verses of Surah Al-Inam Related to Ihkam (Verse No-152-154).

Study of Selected Text of Holy Quran
1. Verses of Surah Al-Ihzab Related to Adab al-Nabi (Verse No. 6, 21, 40, 56, 57, 58.).
2. Verses of Surah Al-Hashar (18, 19, 20) Related to thinking, Day of Judgment.
3. Verses of Surah Al-Saf Related to Tafakar,Tadabar (Verse No-1,14).

Seerat of Holy Prophet (S.A.W) I
1) Life of Muhammad Bin Abdullah (Before Prophet Hood).
2) Life of Holy Prophet (S.A.W) in Makkah.
3) Important Lessons derived from the life of Holy Prophet in Makkah.

Seerat of Holy Prophet (S.A.W) II
1) Life of Holy Prophet (S.A.W) in Madina
2) Important Events of Life of Holy Prophet in Madina
3) Important Lessons Derived from the life of Holy Prophet in Madina

**Introduction to Sunnah**

1) Basic Concepts of Hadith.
2) History of Hadith.
3) Kinds of Hadith.
4) Uloom –ul-Hadith.
5) Sunnah and Hadith.
6) Legal Position of Sunnah.

**Selected Study from Text of Hadith**

**Introduction to Islamic Law and Jurisprudence**

1) Basic Concepts of Islamic Law and Jurisprudence.
2) History and Importance of Islamic Law and Jurisprudence.
3) Sources of Islamic Law and Jurisprudence.
4) Nature of Differences in Islamic Law.
5) Islam and Sectarianism.

**Islamic Culture and Civilization**

1) Basic Concepts of Islamic Culture and Civilization.
2) Historical Development of Islamic Culture and Civilization.
3) Characteristics of Islamic Culture and Civilization.
4) Islamic Culture and Civilization and Contemporary Issues.

**Islam and Science**

1) Basic Concepts of Islam and Science.
2) Contributions of Muslims in the Development of Science.
3) Quran and Science.

**Islamic Economic System**

1) Basic Concepts of Islamic Economic System.
2) Means of Distribution of wealth in Islamic Economics.
3) Islamic Concept of Riba.
4) Islamic Ways of Trade and Commerce.

**Political System of Islam**

1) Basic Concepts of Islamic Political System.
2) Islamic Concept of Sovereignty.
3) Basic Institutions of Govt. in Islam.
Islamic History
1) Period of Khlaft-E-Rashida.
2) Period of Ummayyads.
3) Period of Abbasids.

Social System of Islam
1) Basic Concepts of Social System of Islam.
2) Elements of Family.
3) Ethical Values of Islam.

Recommended books
1. Hameed ullah, M., “Emergence of Islam”, IRI, Islamabad
2. Hameed ullah, M., “Muslim Conduct of State”
3. Hameed ullah, M., ‘Introduction to Islam
4. Islahi, M.M.Y.,”
Note: One course will be selected from the following three courses of Mathematics.

COMPULSORY MATHEMATICS  
COURSES FOR BS (4-YEAR)  
(FOR STUDENTS NOT MAJORING IN MATHEMATICS)

1. MATHEMATICS I (ALGEBRA)  
Prerequisite(s): Mathematics at secondary level.  
Credit Hours: 3  
Objectives  
To prepare the students, not majoring in mathematics, with the essential tools of algebra to apply the concepts and the techniques in their respective disciplines.

Course Contents  
Preliminaries: Real-number system, complex numbers, introduction to sets, set operations, functions, types of functions.  
Matrices: Introduction to matrices, types, matrix inverse, determinants, system of linear equations, Cramer's rule.  
Quadratic Equations: Solution of quadratic equations, qualitative analysis of roots of a quadratic equations, equations reducible to quadratic equations, cube roots of unity, relation between roots and coefficients of quadratic equations.  
Sequences and Series: Arithmetic progression, geometric progression, harmonic progression.  
Binomial Theorem: Introduction to mathematical induction, binomial theorem with rational and irrational indices.  
Trigonometry: Fundamentals of trigonometry, trigonometric identities.

Recommended books  

Suggested text  
2. **MATHEMATICS II (CALCULUS)**

**Prerequisite(s):** Mathematics I (Algebra)

**Credit Hours:** 3

**Objectives**
To prepare the students, not majoring in mathematics, with the essential tools of calculus to apply the concepts and the techniques in their respective disciplines.

**Course Contents**
- **Preliminaries:** Real-number line, functions and their graphs, solution of equations involving absolute values, inequalities.
- **Limits and Continuity:** Limit of a function, left-hand and right-hand limits, continuity, continuous functions.
- **Derivatives and their Applications:** Differentiable functions, differentiation of polynomial, rational and transcendental functions, derivatives.
- **Integration and Definite Integrals:** Techniques of evaluating indefinite integrals, integration by substitution, integration by parts, change of variables in indefinite integrals.

**Recommended books**

3. **MATHEMATICS III (GEOMETRY)**

**Prerequisite(s):** Mathematics II (Calculus)

**Credit Hours:** 3

**Objectives**
To prepare the students, not majoring in mathematics, with the essential tools of geometry to apply the concepts and the techniques in their respective disciplines.

**Course Contents**
- **Geometry in Two Dimensions:** Cartesian-coördinate mesh, slope of a line, equation of a line, parallel and perpendicular lines, various forms of
equation of a line, intersection of two lines, angle between two lines, distance between two points, distance between a point and a line. 

**Circle:** Equation of a circle, circles determined by various conditions, intersection of lines and circles, locus of a point in various conditions.

**Conic Sections:** Parabola, ellipse, hyperbola, the general-second-degree equation.

**Recommended books**

INTRODUCTION TO STATISTICS

Credit Hours: 3

What is Statistics?

Presentation of Data
Introduction, basic principles of classification and Tabulation, Constructing of a frequency distribution, Relative and Cumulative frequency distribution, Diagrams, Graphs and their Construction, Bar charts, Pie chart, Histogram, Frequency polygon and Frequency curve, Cumulative Frequency Polygon or Ogive, Historigram, Ogive for Discrete Variable. Types of frequency curves. Exercises.

Measures of Central Tendency
Introduction, Different types of Averages, Quantiles, The Mode, Empirical Relation between Mean, Median and mode, Relative Merits and Demerits of various Averages. Properties of Good Average, Box and Whisker Plot, Stem and Leaf Display, definition of outliers and their detection. Exercises.

Measures of Dispersion

Probability and Probability Distributions
Discrete and continuous distributions: Binomial, Poisson and Normal Distribution. Exercises

Sampling and Sampling Distributions
Introduction, sample design and sampling frame, bias, sampling and non-sampling errors, sampling with and without replacement, probability and non-probability sampling, Sampling distributions for single mean and proportion, Difference of means and proportions. Exercises.
Hypothesis Testing
Introduction, Statistical problem, null and alternative hypothesis, Type-I and Type-II errors, level of significance, Test statistics, acceptance and rejection regions, general procedure for testing of hypothesis. Exercises.

Testing of Hypothesis- Single Population
Introduction, testing of hypothesis and confidence interval about the population mean and proportion for small and large samples, Exercises.

Testing of Hypotheses-Two or more Populations:
Introduction, Testing of hypothesis and confidence intervals about the difference of population means and proportions for small and large samples, Analysis of Variance and ANOVA Table. Exercises.

Testing of Hypothesis-Independence of Attributes:

Regression and Correlation
Introduction, cause and effect relationships, examples, simple linear regression, estimation of parameters and their interpretation. \( r \) and \( R^2 \). Correlation. Coefficient of linear correlation, its estimation and interpretation. Multiple regression and interpretation of its parameters. Examples

Recommended books

Note: General Courses from other Departments.
- Details of courses may be developed by the concerned universities according to their Selection of Courses as recommended by their Board of Studies.
Introduction to Information and Communication Technologies

Course Structure: Lectures: 2 Labs: 1 Credit Hours: 3
Pre-requisite: None Semester: 1

Course Description

This is an introductory course on Information and Communication Technologies. Topics include ICT terminologies, hardware and software components, the internet and World Wide Web, and ICT based applications.

After completing this course, a student will be able to:

- Understand different terms associated with ICT
- Identify various components of a computer system
- Identify the various categories of software and their usage
- Define the basic terms associated with communications and networking
- Understand different terms associated with the Internet and World Wide Web.
- Use various web tools including Web Browsers, E-mail clients and search utilities.
- Use text processing, spreadsheets and presentation tools
- Understand the enabling/pervasive features of ICT

Course Contents

Basic Definitions & Concepts
Hardware: Computer Systems & Components
Storage Devices, Number Systems
Software: Operating Systems, Programming and Application Software
Introduction to Programming, Databases and Information Systems
Networks
Data Communication
The Internet, Browsers and Search Engines
The Internet: Email, Collaborative Computing and Social Networking
The Internet: E-Commerce
IT Security and other issues
Project Week
Review Week
**Text Books/Reference Books**