FACULTY OF PHYSICAL PLANNING & ARCHITECTURE

SYLLABUS

FOR

Pre Ph.D. Course in
ARCHITECTURE
(Credit Based Evaluation and Grading System)
(Semester: I-II)

Examinations: 2019-20

GURU NANAK DEV UNIVERSITY
AMRITSAR

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Pre Ph.D. Course in Architecture

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Course Type</th>
<th>Credits</th>
<th>L</th>
<th>T</th>
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<th>Duration of Exam</th>
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<tbody>
<tr>
<td>ARL-901</td>
<td>Research Methodology in Architecture</td>
<td>DC</td>
<td>03</td>
<td>02</td>
<td>01</td>
<td>0</td>
<td>03 Hrs</td>
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<td>ARL-905</td>
<td>Climate Responsive Built Environment</td>
<td>DC</td>
<td>03</td>
<td>02</td>
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<td>03 Hrs</td>
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<tr>
<td>ARL-906</td>
<td>Contemporary Trends in Architecture and Planning</td>
<td>DC</td>
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Note: Ph.D. Students may opt for courses at M.Phil / M.Tech /Post Graduate level courses in any department.

**Semester–II**

| ARS-904     | Pre Ph.D Seminar                                     | DC          | 01      | 0 | 0 | 0 | Presentation  |
Pre Ph.D. Course in Architecture

ARL -901: Research Methodology in Architecture

Time: 3Hrs.

Total Marks: 100
Mid Semester Examination: 20% weightage (Marks:20)
End Semester Examination: 80 % weightage (Marks: 80)

Instructions for the Paper Setters:
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Course Contents:

SECTION - A
Definition and need of Research, scientific methods, system approach of research major steps in the conduct of scientific research, induction, deduction and verification, Levels of research-micro and macro. The research process, sources of research ideas, research types, pure, applied, exploratory, descriptive, explanatory, experimental, qualitative, quantitative, longitudinal and cross sectional or comparative research.

SECTION - B
Theory Development: what is theory? Types of theory, role of theory in science, characteristics of good theory, developing and testing of theories. Reviewing of literature.

SECTION - C
Formulation of hypothesis, testing of hypothesis-meaning, importance and methods such as t-test, chi-square test, correlation and regression analysis-meaning, types, importance, methods of measurement, selection and formulation of research problems, preparing of research design, preparation of questionnaire, scaling, sampling, pre-test and pilot study.

SECTION - D
Data collection, sources of data: primary, secondary; data processing, coding, classification and tabulation, editing, analysis and interpretation; research compilation and report: contents and style, factors in the organization of a research report, writing of footnotes quoting styles, references, cross referencing and bibliography.

Suggested Readings:
4. Kumar, Ranjit “Research Methodology” Person Education Australia
5. Ahuja, Ravi, Research Methods, “Rawat Publication.
Pre Ph.D. Course in Architecture

**ARL-905 : Climate Responsive Built Environment**

Time: 3Hrs.  
Credits: 03 (L=02, T=1, U=0)

Total Marks: 100  
Mid Semester Examination: 20% weightage (Marks:20)  
End Semester Examination: 80 % weightage (Marks: 80)

**Instructions for the Paper Setters:**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Introduction to climatic factors, Describing tropical zones and their characteristics. Thermal flow, psychrometric and climatic analysis, human thermal comfort analysis through C.E.T nomogram, understating micro climate.

**SECTION-B**


**SECTION-C**

Air movement, ventilation, functions, health, comfort, cooling, mechanism of ventilation, natural and created effects, forced ventilation, air recirculation, ventilation strategies for various climatic zones, effect of built form and orientation.

**SECTION-D**

Designing for climate and climate change, Bio-climatic design concepts and techniques, Active and passive systems for heating and cooling, site planning, building design, sustainable techniques adopted in traditional buildings, emphasis on responses related to cultural, strategic, social and technological reference to climate and built form.

**Suggested Readings:**

Pre Ph.D. Course in Architecture

ARL-906: Contemporary Trends in Architecture and Planning
Credits: 03 (L=02, T=1, U=0)

Time: 3Hrs.

Instructions for the Paper Setters:
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section -A

Section-B
Overview of the contemporary architectural concepts such as biomimicry, adaptive reuse, low cost development and urban regeneration; Green building principles and practices.

Section -C
Impact of Contemporary trends in architecture in various climate zones- Hot and Dry, Warm Humid and Composite type. Understanding impact on Typologies and Techniques through various case studies

Section -D
Sustainable Urban Development Approaches – New Urbanism, Compact Cities, Smart Cities, etc. Resilient and Low-carbon cities. Examples from India and abroad.

Suggested Readings:
Pre Ph.D. Course in Architecture