

CURRICULUM

OF

ARCHITECTURE

M. ARCH

(2016)



HIGHER EDUCATION COMMISSION
ISLAMABAD

CURRICULUM DIVISION, HEC

Prof. Dr. Mukhtar Ahmed	Chairman, HEC
Prof. Dr. Arshad Ali	Executive Director, HEC
Mr. Muhammad Raza Chohan	Director General (Acad)
Dr. Muhammad Idrees	Director (Curriculum)
Syeda Sanober Rizvi	Deputy Director (Curri)
Mr. Riaz-ul-Haque	Assistant Director (Curri)
Mr. Muhammad Faisal Khan	Assistant Director (Curri)

Composed by: Mr.Zulfiqar Ali, HEC, Islamabad

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PREFACE

The curriculum, with varying definitions, is said to be a plan of the teaching-learning process that students of an academic programme are required to undergo to achieve some specific objectives. It includes scheme of studies, objectives & learning outcomes, course contents, teaching methodologies and assessment/ evaluation. Since knowledge in all disciplines and fields is expanding at a fast pace and new disciplines are also emerging; it is imperative that curricula be developed and revised accordingly.

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).

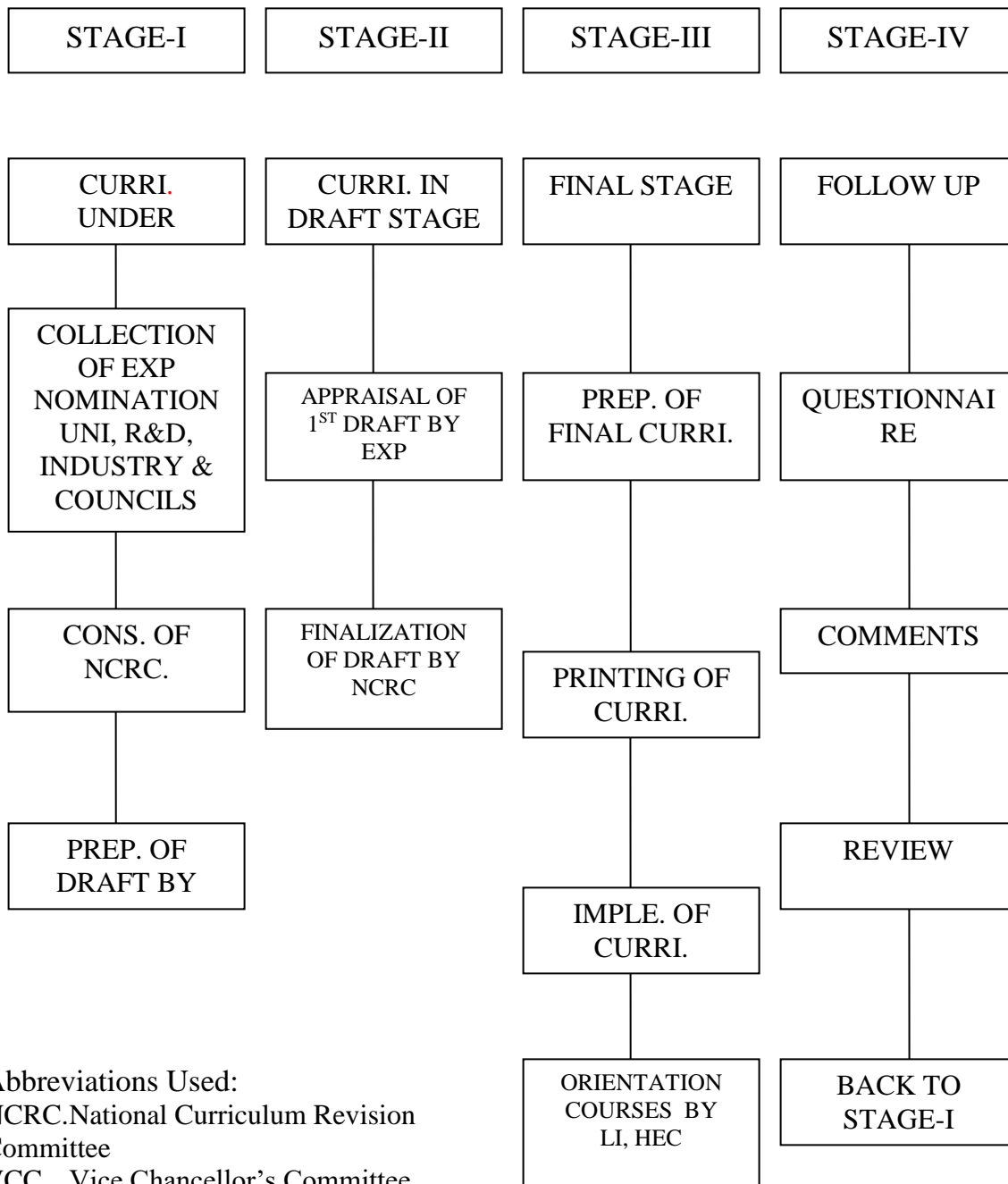
In compliance with the above provisions, the Curriculum Division of HEC undertakes the revision of curricula regularly through respective National Curriculum Revision Committees (NCRCs) which consist of eminent professors and researchers of relevant fields from public and private sector universities,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

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

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
<http://hec.gov.pk/english/services/universities/RevisedCurricula/Pages/default.aspx>

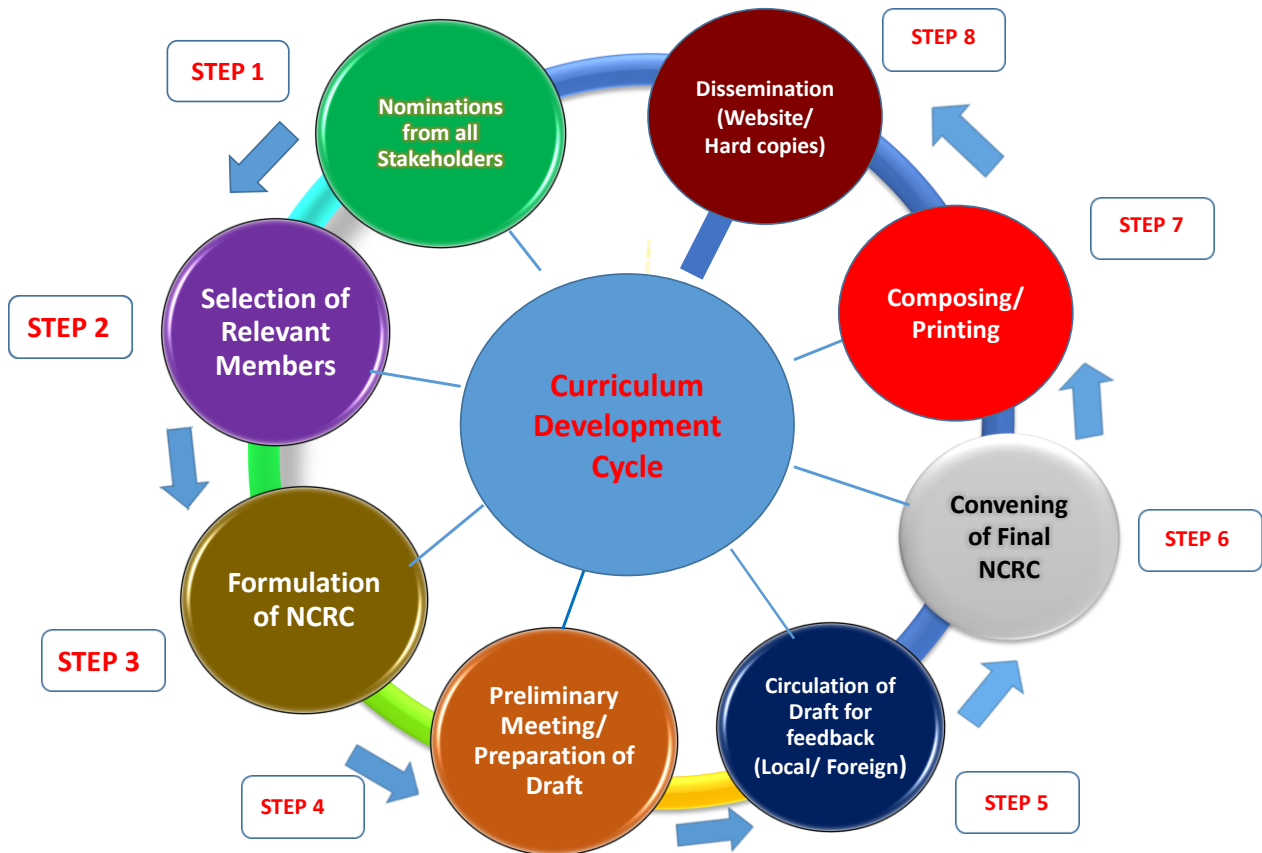
(Muhammad Raza Chohan)
Director General (Academics)

CURRICULUM DEVELOPMENT



Abbreviations Used:
 NCRC. National Curriculum Revision Committee
 VCC. Vice Chancellor's Committee
 EXP. Experts
 COL. Colleges
 UNI. Universities
 PREP. Preparation
 REC. Recommendations
 LI Learning Innovation
 R&D Research & Development Organization
 HEC Higher Education Commission
 CONS: Constitution

CURRICULUM DEVELOPMENT CYCLE



INTRODUCTION:

The preliminary meeting of National Curriculum Revision Committee (NCRC) in the discipline of M. Arch Program was held from December 28-29, 2016 (02 days) at HEC Regional Centre, Lahore. Experts from academia and Research and Development (R&D) Organizations participated in the meeting. Dr. Muhammad Idrees (Director, Academics Division, Higher Education Commission, Pakistan coordinated the meeting. The list of the participants is as under:

S.N	Name & Institution	Position
1	Prof. Ar. Dr. Anis Ahmad Siddiqi Dean, Faculty of Architecture, Art & Design, Humanities and Social Sciences, Imperial College of Business Studies, Lahore and former HEC Foreign Professor	Convener
2	Ar. Zahid Usman Assistant Professor Department of Architecture, National College of Arts, Lahore	Secretary
3	Ar. Sikander Ajam Khan Principal, School of Arts, Design & Architecture, National University of Science & Technology, Islamabad (PCATP Nominee)	Member
4	Ar. Dr. Neelum Naz Professor, Department of Architecture University of Engineering and Technology, Lahore	Member
5	Ar. Dr. Gulzar Haider Professor & Dean, School of Architecture, Beaconhouse National University, Lahore	Member
6	Ar. Dr. Anila Naeem Co-Chairperson/Professor, Department of Architecture & Planning, NED University of Engineering & Technology, Karachi	Member
7	Ar. Dr. Anita Kapadia Associate Professor School of Art Design and Architecture, NUST, Islamabad	Member
8	Ar. Yasira Naeem Pasha HoD, Department of Architecture, Dawood University of Engineering and Technology, Karachi	Member
9	Ar. Azra Zaigham Former Vice President (A&P), NESPAK, Lahore	Member
10	Ar. Dr. Syed Tauseef Ahmad, HoD, School of Architecture, University of Lahore, Lahore. (Nominee of PCATP)	Member

11	Dr. Muhammad Idrees Director Curriculum, Higher Education Commission, Islamabad	Member
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NCRC Agenda:

The agenda of NCRC for M. Arch was as follows:

1. To develop the curriculum of M. Arch Program according to indigenous needs and to bring it at par with international standards.
2. To update/develop preface, mission, vision, preamble, and rationale of Architecture program according to Outcome Based Education (OBE).
3. To develop Program Learning Outcomes (PLOs), Course Learning Outcomes (CLOs), list of contents and assessment criteria (formative & summative).
4. To incorporate/suggest latest reading materials/references (local & international) for every course.
5. To revise/update course contents keeping in view the uniformity across other disciplines and avoiding overlapping.
6. To make recommendations for promotion/development of the discipline, keeping in view the futuristic needs of the society and international trends.

The meeting started with recitation from the Holy Quran. Dr. Muhammad Idrees, Director, Academics Division, HEC, Islamabad welcomed the participants on behalf of Higher Education Commission, Pakistan. All the participants introduced themselves highlighting their qualification, experience and area of expertise within the discipline of Architecture. Keeping with the tradition, Dr. Muhammad Idrees offered the house to nominate a Convener and a Secretary of the NCRC for smooth functioning and working of NCRC. Prof. Dr. Anis Ahmad Siddiqi, HEC Foreign Professor & Dean, Faculty of Architecture, Art & Design, Humanities and Social Sciences, Imperial College of Business Studies, Lahore and Mr. Zahid Usman, Assistant Professor, Department of Architecture, National College of Arts, Lahore were selected unanimously as Convener and Secretary respectively.

Dr. Muhammad Idrees presented the agenda and objectives of the NCRC. He highlighted the importance of this meeting and emphasized for adaptation of general rules of curriculum development and revision like scope of the subject/program, horizontal & vertical alignment, rule of flexibility and adaptability keeping in view the futuristic approach, market value/job market and societal needs. He also shared a template for revising/updating the curricula. The template was unanimously accepted to be followed. It was also agreed to add vision, mission, program learning outcomes (PLOs) and course learning outcomes (CLOs), teaching methodology and assessment segments in course.

In next session the house openly discussed the nomenclature of the discipline, preface, vision, mission, objectives of the program, Program Learning Outcomes (PLOs), methods of instruction and learning environment, assessment and operational framework keeping in mind new trends of Outcome Based Education (OBE) being adopted by various institutions. Sample Course Learning Outcomes (CLOs) were also proposed for few subjects. After long deliberation, the committee finalized the above mentioned segments of the curriculum. Similarly, framework/scheme of studies of M. Arch program was discussed keeping in view the duration of the program, number of semesters, number of weeks per semester, total number of credit hours, number of credit hours per semester, weightage of theory and practical. Furthermore, list of courses (core, optional & electives) and semester wise breakup of courses were also discussed thoroughly and the same was unanimously finalized. In the afternoon session, admission criteria/intake criteria was discussed and finalized. After that the list of courses was distributed among the committee members keeping in view the experience and expertise in the field for developing course objectives, adding learning outcomes, updating list of contents, adding teaching-learning methods and assessment, and updating bibliography/ references/ suggested books.

PART-II

M. ARCH PROGRAM (Minimum 3 SEMESTERS)

Vision:

A graduate program in architecture (M Arch) is envisioned to be an important milestone in the life of young architects towards human and material resource development of the nation and all its regions.

Mission Statement:

The proposed M Arch program should correspond to the relevant interests of various stakeholders such as institutions, educators and students, members of the practicing profession (IAP), regulatory and registration body (PCATP), building Industry and the society at large. The program should address environmental issues such as 'Climate Change' and 'Sustainable' approach to human life and material resources.

Objectives:

The M. Arch program should be developed to achieve the following objectives:

1. Fulfill a need for high quality manpower in designing, planning and managing the built environment in Pakistan.
2. Fulfill a need for the training of professionals who are sensitive to the norms, needs and values of the society and the profession.
3. Provide an opportunity for students towards specialized education suited to their interest and needs.
4. Provide students with a broad based foundation concerning the built environment with emphasis on design, context, preservation and technology.
5. To generate a pool of highly trained and skilled practitioners, researchers, educators, regulators and to provide resource to building industry in Pakistan.

Program Requirements:

The M. Arch program is expected to be a measured balance between institutions, students and regulatory bodies such as HEC and PCATP/IAP and should cover studies over a period of minimum three semesters with first two semesters dedicated to 'Core' and 'Optional' courses supported by 'Electives'. The third semester takes the form of an 'Advanced Architectural Design Studio' or a research based 'Thesis'.

Core of the Curriculum:

It is suggested that the main thrust of the program should focus on the multi-faceted architectural design studio aimed at producing architects with higher sensitivity and efficient skills in dealing with designs of buildings and urban stock that addresses national as well as regional issues through input from a variety of specialized subject matter relevant to aspirations of: national, regional, institutional and professional needs and opportunities. Therefore, the proposed M. Arch curriculum is structured in such a manner that the Core subjects focus on many dimensions of an architectural design studio with respect to design development and pedagogy etc. This is to be achieved by making two mandatory (compulsory) design studios spread over two semesters dealing with increasing complexity of architectural design process culminating into the third semester where, depending upon institutional aspirations, directions, expertise etc., can grow into an advanced architectural design studio exercise or a research based thesis. Both the above mentioned directions are to be aptly supported and vitalized by offering specialized courses as per need and availability of institutional resources and expertise.

Specializations:

The proposed M. Arch Curriculum takes note of the diversity of human, spatial, environmental, economic and social resources and aspects of the nation's fabric and aims to weave an integrated course of study to vitalize these resources in order to create a more holistic, vibrant and sustainable environment for future generation. Keeping this in mind, the CNRC suggests that following specialized studies be incorporated into development of M. Arch program by institutions:

1. Urban Design
2. Sustainable Design
3. Heritage Conservation
4. History, Theory & Criticism
5. Architectural Graphics & Visualization
6. Architectural Project Management
7. Architectural Technology

Note: *University/Institution may introduce new or exclude existing specialization as per its needs.*

SCHEME OF STUDIES

Structure of the proposed M. Arch program

First Semester				
No	Course Title	Credit Hours		C. H.
		Theory	Practical	
As per Institutional Format	Advanced Architectural Research Methods	3	0	3
	Advanced Architecture Design Studio-I	1	10	6
	Optional (from list of Specialization)	3	-	3
	Elective I (related to list of Optional)	3	-	3
	Elective II (related to list of Optional)	3	-	3
Semester Total C.H.		13	10	18

Second Semester				
No	Course Title	Credit Hours		C. H.
		Theory	Practical	
As per Institutional Format	Advanced Architecture Design Studio-II	1	10	6
	Optional II (Minor - from list of Optional)	3	-	3
	Elective III (related to list of Optional)	3	-	3
	Elective IV (related to list of Optional)	3	-	3
Semester Total C.H.		10	10	15

Third Semester				
Course No	Course Title	Credit Hours		C. H.
		Theory	Practical	
As per Institutional Format	Advanced Architecture Design Studio-III	1	12	7
	Or			
	Thesis based on Institutional Preferences			
Semester Total C.H.		1	12	7
Total C.H. for M. Arch Program				40

Optional (Specialization) Courses:

Students can take TWO courses from following list – One as Major and another as Minor – All courses to carry a load of 3 C.H. Load in terms of Theory and Practical can be decided as per Institutional needs/plans. Total C.H. for Optional Courses = 6 C.H.

No.	Course Title
As per Institution Format	Urban Design
	Sustainable Design
	Heritage Conservation
	Architectural Theory & Criticism
	Architectural Graphics & Visualization
	Architectural Project Management
	Architectural Technology

NOTE: More Topics can be added

Elective Courses

Four Elective Courses (Two in each semester) to be taken from the following related to the Optional chosen – Major and Minor – All courses to carry a load of 3 C.H. each. Load in terms of Theory and Practical to be decided as per Institutional needs/plans). Total C.H. for Optional Courses = 12 C.H.

S. No.	Course Title
URBAN DESIGN COURSES	
1	Urban Design Studio I
2	Urban Design studio II
3	History & Theory of Urban Design
4	Built Form and Regulation
5	Experimental Urban Works
6	Urban Conservation
7	Urban Form Study
8	Urban Ecology and Sociology
9	Urban Management systems
10	Neighborhood Revitalization
11	Urban Economics
12	Urban area conservation
SUSTAINABLE DESIGN COURSES	
1	Sustainable Design: Theory & Orientation
2	Sustainable Design: Case Studies
3	Sustainable Systems & Processes
4	Sustainable Development
5	Sustainability Management
6	Sustainable development

CONSERVATION STUDIES	
1	Conservation Studio I
2	Conservation studio II
3	Case Studies in Conservation
4	Architectural Conservation
THEORY, HISTORY AND CRITICISM	
1	Meaning in the Built Environment
2	History, Theory & Criticism studio I
3	History, Theory & Criticism studio II
4	Key Text & History
5	Contemporary architectural Historiography
6	Case Studies in Architectural Analysis
7	Mapping Methodologies & Strategies
ARCHITECTURAL GRAPHICS & VISUALIZATION	
1	Parametric Design & Fabrication
2	Architectural Construction & Industrialization
3	Design Value & Architecture
4	Advanced Presentation and Visualization Techniques
ARCHITECTURAL PROJECT MANAGEMENT	
1	Strategic Management
2	Forecasting and Risk Management
3	Project Management Leadership
4	Professional Communication
5	Agile Project Management
6	Program and Portfolio Management
7	Critical Thinking & System Assessment
8	Organizational Project Management
9	Portfolios and program Management
10	Risk Management
11	Project planning and Management
12	Strategic Change Implementation
13	Form Finding & Fabrication
14	Advance Technology

Courses can be added as per requirement and Institutional strength

Minimum Credit Hours for the M. Arch Degree = 40

SPECIAL TOPICS:

Students may study the topics of interest related to their research individually. However, the topics must be approved by the faculty supervisor / board of study prior to registration for this course.

RESEARCH THESIS (Opted by the Institution):

Thesis proposal shall be prepared by the student during the Second Semester using techniques acquired in the subject of Advanced Architectural Research Methods. The proposal shall be considered by the Post Graduate Board of

Studies and student shall be informed. The students are expected to work on data collection and literature review during part of the second Semester in their own time. However, in the Final (3rd) Semester, the students shall be required to concentrate wholly on their research thesis. A timetable (weekly schedule) for the thesis may be prepared with the help of the concerned supervisor and followed in letter and spirit. The Departmental administration and Post Graduate Board of Studies shall be kept informed in this regard. Other meetings may be arranged according to mutually agreed time between the supervisor and the supervisee. Students are strongly advised to submit their thesis at the end of the final semester

DETAILS OF COURSES

Course Name:

Advanced Architectural Research Methods

Credit hours: 3 (3+0)

Prerequisites: Research Methodology Courses in B. Arch

Course Objectives:

To study academic research methods and techniques in the discipline of architecture. Focus shall be laid on specialized area of architectural research.

Learning Outcomes:

(As per six levels of cognitive domain of Bloom's Taxonomy)

After studying this course, the learners will be able to:-

1. To introduce students to the theoretical issues of research methods.
2. To introduce students to process of research including conceptualization, information searching, evaluation, analysis, report-writing and presentation.
3. Enable students to develop skills to write a research proposal for grant application.
4. Provide a framework for successful development of written and oral presentations.
5. To build a strong basis for successful thesis and academic research.
6. To make students familiar with ethical issues in the conduct of research.

Content List (in hierarchical order)

- Introduction to fundamentals of Research: definition, characteristics, objectives, etc.
- Different research methods (such as qualitative, quantitative, mixed)
- The Research Process
- Selection of an appropriate / acceptable Research Topic.
- Sample and Sampling Techniques
- Literature Review

- Research Conduct Issues
- Analysis of data and formulations of conclusions
- Parts of a Technical Report.
- Research Communication: Academic/Technical writing.
- Writing a good Research Paper and get it published in a journal.

Practical:

- Daily and periodic assignments. Daily assignments will require the student to read the assigned readings and be prepared to participate in a seminar discussion of those readings. The intent of the discussion assignments is to introduce a rigor of efficient reading, to learn skills in paraphrasing the ideas of others, and to interpret these ideas into use within their own research. The students should be able to concisely summarize key points of the readings and writings.
- Periodic assignments are cumulative and meant to produce a concise proposal for their subsequent research Abstract etc.

Teaching Methodology:

- Lecturing and hand outs
- Guest Speaker
- Field Visits
- Group discussions
- Written Assignments
- Videos

Assessment:

Mid Term (40%)

- Written (Long Questions, Short Questions, MCQs) 40%
- Presentation 15%
- Assignments 15%
- Report Writing 10%

Final Term (60%)

- Written (Long Questions, Short Questions, MCQs) 60%
- Presentation 20%
- Assignments 20%
- Report Writing 20%

Recommended Books:

1. Practical Research: Planning and Design. Seventh Edition. Upper Saddle River (NJ): Prentice-Hall, Inc. 2001
2. Inquiry by Design: Tools for Environment-Behavior Research. Monterey: Brooks/Cole Publishing Co., 1981.
3. Blake, G. and Bly, R.W. 1993."The elements of technical writing." Longman, NY.
4. Fowler, F.J. 2001. "Survey Research Methods." Sage Publications, Inc.

5. Singleton, R.A. Jr. and Straits, B.C. 2005. "Approaches to Social Research." Oxford University Press, Oxford.
6. Kumar, Ranjit. Research Methodology: A step by Step Guide for Beginners, 3rd Edition. Sage Publication. 2007.

Course Name:

Advanced Architectural Design Studio I and II

Credit hours: 6 (1+5) each

Prerequisites: PCATP Accredited B. Arch. degree

Course Objectives:

1. To inculcate advanced architectural design skills within the program. The translation from conceptual to physical design needs to demonstrate intricate and enhanced understanding of architectural pragmatic factors.
2. To develop capacity building within design domain.

Learning Outcomes:

(According to six levels of cognitive domain of Bloom's Taxonomy)

As core course the outcome is directly linked to overall programs expertise and direction;

1. **Define** the advanced learning skills within studio culture.
2. **Understand** the interlinking of various architectural domain and bringing it together within studio pedagogy
3. **Discuss** the architectural landscape of the country and its enhancement through contemporary design understanding. The architectural texts have to be taken into account.
4. **Apply** advanced design analysis methods and contemporary techniques.
5. **Compare** theoretical rationale and its relationship with design
6. **Evaluate** the design outcome along with self evaluatory process within design development.

Content List (in hierarchical order)

- Understand the explorations within the contemporary design development studies.
- Inter-relate the architectural texts relevant with the expertise of program within studio learning.
- Interlinking theory based learning with spatial articulation.
- Cohesive integration of multiple architectural pragmatic factors to produce design decisions based on programs ideology.
- Self evaluatory knowledge of architectural design outcome. Understanding of design analytical techniques.

Studio Work

- Intensive studio based learning, where one on one tutor and student interaction is pertinent to functioning of studio.
- Exercises/assignments to be designed keeping in view parent institutes ideology. The exercises need to incorporate intricate skill sets in comparison to Bachelors program delineated by HEC.

Teaching Methodology

- Studio Based learning (at least 80% time to be consumed within studio)
- Lecture
- Reading Assignments
- Guest Speaker
- Field Visits
- Writing Assignments
- Seminar based learning

Assessment

Theory Assessment: all percentages to be derived with respect to Institutes pre-determined policies. Following heads to be considered for

- Presentations
- Assignments
- Written Exams
- Report Writing

Studio Assessment:

All percentages to be derived with respect to Institutes pre-determined policies. Following heads to be considered for

- Studio based grading
 - Jury Evaluation
 - Pin-ups
 - Desk Critique
- Portfolio

Recommended Reference Material (Books, On-line Material)

Selections from the works of following authors and other theoreticians, practitioners to be taken into consideration:

- Aldo Rossi
- Christopher Alexander
- Keith Crislow
- Nader Ardalan
- Manfredo Tafuri
- Rem Koolhaus
- Neil Leach
- Hussain Nasr
- Laila Bakhtiar

- Eba Koch
- Bow Wow
- Hasan Fathy
- Geoffery Bawa
- Vibhuti Chakrabarti
- Farshad Moussavi
- Andrea Palladio
- Denis Scott Brown
- Robert Venturi

Course Name:

Architectural Project Management

Credit hours: 3 (2+1)

Prerequisites: B. Arch Courses on Practice and Management

Course Objectives

1. To familiarize students with dynamics of a project, indicators of its success/failure.
2. To discover the phases of a project and what deliverables are expected.
3. To identify a project's key stakeholders.
4. To learn to be prepared for the unexpected by utilizing risk management and change control;
5. To learn various tools to organize project activities and progress;
6. To learn PM Skills in architectural and construction scenario.

Learning Outcomes:

(According to six levels of cognitive domain of Bloom's Taxonomy)

After studying this course, the learners will be able to:-

- **Define** and describe the basic theories of Project Management and the qualities of an effective project manager.
- **Understand** the PMBOK, basic concepts, practices and strategic issues related to Architectural Project Management.
- **Discuss** Architectural Construction & Industrialization, Design Value and Architecture.
- **Apply** management techniques & bring agility in managing projects.
- **Compare** traditional and contemporary management models.
- **Evaluate** strategic framework of management paradigm in architectural context.

Content List (in hierarchical order)

- Introduction to Project Management Body of Knowledge.
- SMART Goals.
- Framework for Project Management.
- Functions of Management.

- Project Planning, Scheduling, Network Diagrams & Budgeting.
- Critical Thinking and System Assessment.
- Organizational Project Management.
- Portfolios and program Management.
- Risk Management.
- Strategic Change Implementation.
- Sustainability Management.
- Management Tools/ Project Manager's Toolkit & Apps.

Practical:

- Class exercises on critical thinking, brainstorming, Network Diagrams
- SPSS

Teaching Methodology:

- Lecturing
- Class exercises/ & Group Presentation
- Guest Speaker
- Field Visits
- Report Writing

Assessment:

Mid Term (40%)

- Written (Long Questions, Short Questions, MCQs) 50%
- Presentation 20%
- Assignments 20%
- Report Writing 10%

Final Term (60%)

- Written (Long Questions, Short Questions, MCQs) 50%
- Presentation 20%
- Assignments 20%
- Report Writing 10%

Recommended Books (latest, local + foreign)

1. F. Lawrence Bennett, *The Management of Construction: A Project Life Cycle Approach*. 2003, Butterworth Heinemann, 1st Edition
2. George J. Ritz, *Total Construction Project Management*. 1994, McGraw-Hill
3. Phillip Joseph, *Project Management: on Track from start to finish*. 2004, McGraw-Hill Osborne, 2nd Edition *Project Management: The Complete Idiot's Guide*
4. Heerkens, Garry R, *Project Management*. 2002, McGraw-Hill Boston
5. Cotrell, Stella. *Critical Thinking Skills: Developing effective Analysis and Argument*. 2011. Palgrave, 2nd Edition.
6. *Project Management: The Complete Idiot's Guide*

Course Name:
Directed Studies In History, Theory And Criticism
Credit hours: 3 (2 +1)

Prerequisites: (History, Theory and Criticism for B. Arch Degree)

Course Objectives:

- To introduce and mentor students through selected historical, theoretical and critical texts relevant to the chosen focus of their M. Arch work.
- To develop students' critical writing and verbal expression.

Learning Outcomes:

According to six levels of cognitive domain of Bloom's Taxonomy). After studying this course, the learners will be able to:-

- **Define** the relevance and value of history, theory and criticism.
- **Understand** the mutually essential relationships among history, theory and criticism relevant to the chosen focus of their M. Arch.
- **Discuss** the state of architectural discourse in Pakistan relevant the chosen focus of their M. Arch
- **Apply** comparative analysis methods on historical realizations and develop reasoned positions.
- **Compare** historical awareness, theoretical reasoning and critical judgments as ways of understanding history as both information and precedent.
- **Evaluate** different theories as alternative ways of traversing the landscapes of history and critical writings as guide-posts and warning-signs along the exploratory journeys of architects

Content List (in hierarchical order)

- Definitions of Architecture both as an individual and societal aspiration as well as professionally disciplined process.
- Introduction to expanded vocabularies in architectural discourse rooted in the interwoven pursuits of History, Theory and Criticism.
- Arguments in defense of judgmental cynicism against History, Theory and Criticisms' value as contributors to overall quality of architectural quality both as an educational and/or as a professional enterprise.
- Comparative analysis of some of the key developments in historiography, theoretical prepositions, and criticisms offered in voice, word or market reactions.
- Exercises aimed hypothesizing theories of architecture especially with reference to Pakistan and the region.
- Scope, nature and purpose of physical planning. Types of theorized constructs about architecture from fiction to measurable physical realities.
- Architecture and its relationship with other professions impacting upon built urban environment. .

- New trends in architecture and their underlying causalities, aspirations and quality assurance systems especially with reference to Pakistan.
- Continuous and easy access to role-model work and critically analyzed and communicated case studies of important architects locally, globally and historically.

Practical:

- Awakening to the silent eloquence of historically linked, inspirationally thought out and critically sustained architecture.
- Experiential understanding of carefully selected accessible works of architecture and training of students in verbal, drawn and photographic communication of their assets and deficiencies.

Teaching Methodology:

- Lecturing
- Reading Assignments
- Guest Speaker
- Field Visits
- Writing Assignments

Assessment:

Mid Term (40%)

- Written (Long Questions, Short Questions, MCQs) 50%
- Presentation 20%
- Assignments 20%
- Report Writing 10%

Final Term (60%)

- Written (Long Questions, Short Questions, MCQs) 50%
- Presentation 20%
- Assignments 20%
- Report Writing 10%

Recommended Reference Material (Books, On-line Material)

Selections from the works of following authors and other theoreticians, practitioners should be available for assignments to students for directed readings, writing and criticisms. Assignments should be relevant to the M. Arch focus of the student group.

Nikolaus Pevsner
 Sigfried Giedion
 Leonardo Benevelo
 Reyner Banham
 Manfred Tafuri
 Le Corbusier
 Hans Scharoun
 Walter Gropius
 Alvar Aalto
 D'ArcyW. Thompson

John Ruskin
 Bruno Zevi
 H-R Hitchcock
 Peter Collins
 Frank Lloyd Wright
 Hugo Haering
 Bruno Taut
 Mies van der Rohe
 Gunar Asplund
 Antonio Gaudi

Eduardo Torroja
Fazlur Khan
Carlo Scarpa
Buckminster Fuller

Klaus Herdig
Walter Netsch
John Summerson
Christian-Norberg Schultz

REFERENCE MATERIAL:

1. Cities by Design, The Social life of Urban form. Fran Tonkiss, 2013.
2. Mega cities: Urban Form, Governance and sustainability. Sorensen, Andre Okata, Junichiro
3. Achieving sustainable urban form. Katie Williams and Micheal Jenks.
4. Emerald Cities: Urban Sustainability and Economic Development. Joan Fitzgerald. Oxford University Press 2011
5. Urban Ecology. Micheal J. White and Ann H. Kim. 2007
6. Methods and Techniques in Urban Engineering: *Edited by Armando Carlos de Pina Filho and Aloisio Carlos de Pina, ISBN 978-953-307-096-4, 270 pages, Publisher: InTech, Chapters published May 01, 2010 under CC BY-NC-SA 3.0 license*
7. Andersson, H. (ed.).1997. *Cities and Communities*. A Sustainable Baltic Region. Session 7. Baltic University Press, Uppsala.
8. Rydén, L. 2008. *Tools for Integrated Sustainability Management in cities and towns*. Baltic University Press, Uppsala.
9. Rydén, L. (ed.). 2002. *Basic Patterns of Sustainability*. Superbs Case Studies Volume I. Baltic University Press, Uppsala.
10. Rydén, L. (ed.). 2003. *Public Participation and Democracy*. Superbs Case Studies III. Baltic University Press, Uppsala.
11. Rydén, L. (ed.). 2003. *Urban Environmental Management*. Superbs Case Studies IV. Baltic University Press, Uppsala.
12. *Neighborhood Revitalization: Theory And Practice* by Roger S. Ahlbrandt
13. Rydén, L., Migula, P. and M. Andersson (eds). 2003. *Environmental Science - understanding, protecting and managing the environment in the Baltic Sea region*. Baltic University Press. Uppsala, Sweden.
14. Weiß, P. and J. Bentlage. 2006. *Environmental Management Systems and Certification*. Book 4 in a series on Environmental Management. Baltic University Press, Uppsala.
15. *Neighborhood as Refuge*
Community Reconstruction, Place Remaking, and Environmental Justice in the City: By Isabelle Anguelovski
16. *Conservation for Cities*
How to Plan & Build Natural Infrastructure
By Robert I Macdonald
17. *Urban Carnivores*
Ecology, Conflict, and Conservation, edited by Stanley D. Gehrt, Seth P. D. Riley, and Brian L. Cypher

RECOMMENDATIONS/SUGGESTIONS

The meeting made the following recommendations:

1. Architecture should be included in the list of subjects/branches for all foreign and local M. Arch/PhD scholarships awarded through HEC.
2. Special attention may be given to higher education in Architecture under HEC faculty development program.
3. In view of rapid urbanization and economic development, there is a need to rationalize/develop appropriate institutional framework for architecture profession in the country.
4. The courses should incorporate contemporary educational approaches in the curriculum;
5. Institutes need to develop comprehensive plans for faculty training in architectural education supported by HEC;
6. Development of human and material resources should be undertaken by each institutions on modern/ contemporary lines supported by HEC;
7. HEC Digital Library should include a database related to Architecture, Urban Design and Planning;
8. All institutions should maintain maximum teacher student ratio of 1:8 in studio subjects.

General Recommendations for the Discipline

1. The program should be in-line with the guidelines of NCRC;
2. The courses should be in line with the vision and mission of the respective institution. However, the electives component may vary depending on the level of expertise and resources available in individual academic institution and allied industry;
3. Faculty development should be facilitated through trainings, seminars, meetings and conferences in their subject areas.