1	Course title	Design & Psychology
2	Course number	0932447
3	Credit hours (theory, practical)	3 credits/theory
	Contact hours (theory, practical)	3 hours
4	Prerequisites/corequisites	
5	Program title	Architectural engineering
6	Program code	2
7	Awarding institution	University of Jordan
8	School	Engineering
9	Department	Architectural engineering
10	Level of course	Second Year second semester
11	Year of study and semester (s)	
12	Final Qualification	
13	Other department (s) involved in teaching the course	
14	Language of Instruction	English
15	Date of production/revision	2018/2019

16. Course Coordinator:

Prof. Saleem M. Dahabreh, Phd
Location: Office 33, faculty of Art and Design
Email: saleem.dahabreh@ju.edu.jo

17. Other instructors:

Office numbers, office hours, phone numbers, and email addresses should be listed.

18. Course Description:

Architecture is created by humans for humans. Further, it reflects and creates human experience, thus a deeper understanding of human nature and the nature of interaction between man and environment becomes essential to the creation of successful built environment. The underlying premise behind this course is that basic and systematic knowledge based social sciences and human psychology, when combined with an understanding of design processes, can contribute to the planning, design, and management of environments that enhance individual and organizational wellbeing and effectiveness. Just as physical and formal sciences inform designs, so can the behavioral sciences, which offer rapidly advancing insight into how people interact with their environments and with each other. This course will enrich the students' design repertoires in unique directions by providing knowledge of basic human psychology, environment, and their interrelation.

19. Course aims and outcomes:

A- Aims:

- Presenting a better understanding of the nature of architecture, architectural theory and design processes.
- Provide students with a better understanding of the nature of the surrounding environment, and a better understanding of the factors underlying the relationship between human behaviour and the designed environment. By providing such an understanding, the amount of uncertainties about many issues of concern to the modern designer and planner will be reduced and accordingly;
- Equip students with the basic knowledge regarding human behaviour and interaction with both the natural and built environment and how to integrate this information in the design process
- The student will be introduced to current issues in environment-behavior research as well as research methods and thus become more aware of the contribution of behavioral approaches to architecture.

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to

- Understand basic terminologies in Human-behavior relationship
- Have a basic understanding of the mutual relationship between Humans and environment
- Better understand the dynamics of human-environment interaction
- Better understanding of how human behavior affects architectural design

C- NAAB Student Performance Criteria:

- A1. Communication Skills: Ability to read, write, speak and listen effectively
- A5. Investigative Skills: Ability to gather, assess, record, apply, and comparatively evaluate relevant information within architectural coursework and design processes.
- A10. Cultural Diversity: Understanding of the diverse needs, values, behavioral norms, physical abilities, and social and spatial patterns that characterize different cultures and individuals and the implication of this diversity on the societal roles and responsibilities of architects.
- C1. Collaboration: Ability to work in collaboration with others and in multidisciplinary teams to successfully complete design projects.
- C2. Human Behavior: Understanding of the relationship between human behavior, the natural environment and the design of the built environment.

20. Topic Outline and Schedule:

Kindly refer to the attached Appendix

The course is divided into four major parts:

- Part one: includes a discussion on the reasons behind the failure of architects and designers to produce a desired built environment; these reasons include nature of architectural theory, the legacy of the Modern Movement, changes in the relations between the architect and the user, and the concept of architectural determinism.
- Part Two: includes a discussion on the nature of architecture, design and architectural theory with the aim of providing a general understanding for the importance of positive substantive and procedural theory in architecture and the role that behavioural sciences can play in creating these theories.
- Part Three: includes the scope of environment-behaviour research and its possible contribution to architecture. In this part, the definition of behavioural sciences and its origins will be presented, a long side major world views and research paradigms, and afterwards, issues regarding humans, the environment, and their interaction will be presented in order to present a deeper understanding of nature of man-environment relationship.
- Part Four: includes some examples of how behavioural issues can affect the design of both residential and institutional environments.

Nature of the problem
- Legacy of the modern movement
- Changing nature of professional-client relationship; changes in researcher/clients/users/designers relationship
- Changes in the architectural context: complex society of today, social distance, administrative distance
- Architectural determinism: form and function

Nature of Architecture and architectural theory
- Utilitas, Venustas, and Firmitas; function, structure, aesthetics
- Nature of design and design problems: design as an activity, object, 'wicked' problems
- Design fields as art and environmental design/ as profession and discipline
- Design process: analysis/synthesis, conjecture/analysis, design as exploration and formulation
- Theory in architecture and design: positive theories: substantive and procedural, normative theories, importance of theory, nature and utility of theory on architecture, need for a positive base for the normative theories of architecture

General characteristics of humans
- Motivations and needs; visceral, somatic, and comprehensive
- Personality traits
- Social systems and cultural systems

Environment and behavior
- Definitions: behavioral sciences, environmental psychology, environment-behavior research.
- Environment-behavior research as setting, phenomena, and groups
- Environment-behavior research within the framework of Rapoport's three questions: characteristics of human's that affect interaction with the environment, characteristics of the environment that affect behavior, and mechanics that link humans and the environment

Environment
- Definition and classifications of the environment: e.g. geographic, animate, cultural and built
- Environmental elements: ambient conditions, stress, noise, crowding, affordances
- Built environment: definition, affordances and effects

Behavioral settings: Barker's model

Social interaction and the environment

Environmental perception
- Psychophysics
- Theories of environmental perception: Gestalt, functionalism, learning

Environmental cognition
- Schemata
- Cognitive maps: characteristics, functions

Meaning in the built environment
- Semiotics and environmental meaning
- Nonverbal communication: Rapoport's model
- Hershberger classification of meaning

Environmental aesthetics, attitudes, and evaluation

Personal space
- Hidden dimension; intimate, personal, social, and public distances
- Functions of personal space
- Factors affecting personal space

Defensible space/ Oscar Newman
- Territoriality, surveillance, image, and location

Privacy
- Functions of privacy
- Privacy Mechanisms

Territoriality
- Functions of territoriality
- Types of territoriality
- Territorial markers

Organization of environment-behavior information
- Broadbent's model
- Veitch and Arkkelin's Model

Environment-behavior information and design
- Zeisel, Veitch and Arkkelin
- Lang's model of the design process

Sample applications of environment-behavior in architecture

Sample guidelines: Deasy and Lasswell (1985)
Residential design
Institutional design

21. Teaching Methods and Assignments:

This course is theoretical in nature, as such, it will be run as a seminar that depends on lectures and literature reviews. Run as a seminar, the delivery is intended to be open-ended, well structured, and directed. Nevertheless, to maximize students benefit of the course, the course will include and application part where students will analyse and present case studies in criticism and morphology. The class will meet twice weekly. In the first third of the semester, lectures will depend on material prepared by the lecturer, which will provide students with basic knowledge required for the second and third parts of the course. During the second third of the semester, lectures will take more the form of a seminar where students will participate more through previously summarized reading material and essays. In the third part of the semester, students will take the lead through presenting a group project. All through the course, students will be encouraged to direct the objects of discussion, to discuss and workshop their own critical writing, and to comment critically on the work of their peers. There will be an emphasis on both writing as a craft, and architectural modelling skills. Discussions will centre around the analysis of texts as well precedents.

Students will be provided with their reading material two weeks before its due time. Students will work in groups of 2-4 starting the second third of the semester.

22. Evaluation Methods and Course Requirements:

For the final grades of this course, active involvement in the course during the seminars, exams and quizzes scores, the quality of the term paper writing, as well as verbal and visual presentation and the will be assessed. Participation therefore does not mean pure presence in the class room but active contributions to the seminar discussions. Students who haven't made any question or comments to the content of the course during the seminars cannot achieve a participation grade of B or above.
The midterm exam as well as the final exam will evaluate factual, procedural, and conceptual knowledge developed by students across the semester. For the term paper, the intellectual strength of the argumentation and the proper structuring of the paper are valued most. Nevertheless, a good or excellent grade (B or above) can only be achieved if the paper is based on a solid research on the specific topic and a professional presentation. Texts which fail to name all sources of their information (incl. image sources) properly will not be considered for grades in the B range or above. To be able to involve in the discussions and get a broader theoretical understanding students are expected to read the seminar texts for each session provided for the students.

ASSESSMENT

Midterm exam 30%
Paper 15%
Quizzes and active participation 5%

Final Paper exam 50%

Grade Scale:

Approximate distribution of students within scale

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
88-100	84-87	79-83	75-78	71-74	66-70	62-65	58-61	54-58	53-50	45-49	0-44
15%		65%						20%			

23. Course Policies:

All university rules and regulations will be strictly followed in evaluating students.

A- Attendance policies:

Absence percentage will not exceed 15% of the total lectures of the semester, which means that by the sixth absence, the student will not attend the final exam. Leaving class before it ends, or taking an extended bathroom or water break that lasts 1/3 of the class time or longer, will be considered an unexcused absence.

B- Absences from exams and handing in assignments on time:

- assignments are to be handed in on the dates and times scheduled
- incomplete work is accepted with the highest grade being at a C
- late work is not accepted
- work submitted by others is not accepted
- extensions are not granted
- make-ups are not granted

If a student is unable to submit a piece of coursework or attend an exam by the published deadline due to circumstances beyond control such as an emergency or other mitigating reasons that is accepted by the University (The circumstances must be fully and officially documented), the student has to hand it in as soon as he/she can after that. There will be no adjustment made for absence, late work, or incomplete work due to controllable events (such as visits to the Student Health Center, job interviews, holiday flights, and work schedules). The grade of I (Incomplete) is assigned ONLY in accordance with the criteria set out in the School of engineering Bulletin and University regulations. A grade of Incomplete may be given only when the work of the course is substantially completed when the student's work is of passing quality.

C- Health and safety procedures:

D- Honesty policy regarding cheating, plagiarism, misbehaviour:

Misbehaviour:

Instructor may refuse a student admission to a lecture, a tutorial or learning activity set out in the course outline because of lateness, misconduct, inattention or failure to meet the responsibilities of the course set out in the course outline. Students who neglect their academic work may be assigned a final grade of N or debarred from final examinations.
Behaviours that inhibits other students' ability to learn and an instructor's ability to teach persistently or grossly interferes with classroom activities is considered disruptive and is subject to disciplinary action. A student responsible for disruptive behaviour may be required to leave class pending discussion and resolution of the problem and may be reported to the Office of Student Judicial Affairs for disciplinary action.
Academic dishonesty includes but is not limited to acts such as cheating on exams or assignments; plagiarizing the words or ideas of others; fabricating material or citations; facilitating acts of academic dishonesty by others; claiming authorship of works done by others whether students or professionals; submitting work completed previous works by self or others; and/or submitting the same work to multiple classes in which a student is enrolled simultaneously. All these cases will be dealt with according to the rules and regulation stated out in the rules and regulations applied at the University of Jordan as posted on the University webpage

E- Grading policy:
See above

F- Available university services that support achievement in the course:

Access to Wi-Fi internet
Proper electronic library
Department library
Main Library

G-Lecture room courtesy

- Academic and social manners and civility are not trivial; they help to establish and maintain the quality of relationships between individuals involved in the academic experience and they inform proper everyday behaviors. To that end, kindly observe the following guidelines for maintaining a civil educational environment (adopted from copyright 2004 Janet L. Hartranft):
- Punctuality in attendance and leaving: It's courteous to be on time and to not leave class early. Students who arrive late disrupt class unnecessarily. Students who walk out of class early risk giving an unintentionally negative impression by exiting unexpectedly. If circumstances require you to be late for class, or require you to leave early, please alert the instructor either before or after class. Punctuality is highly appreciated; habitual lateness is likely to have a negative impact on one's grade.
- In deciding whether or not to attend class: Please do not ask your instructor if she is covering anything "important" on that day. This course is carefully planned out – every lecture is important.
- Respect for others: treating opinions and ideas with respect is a basic courtesy that is appreciated by all. It's important that each of us extend this courtesy to each other as part of our everyday class interactions. Respectful behaviors include listening carefully and attentively to what others have to say, offering comments and challenges to ideas in ways that address issues rather than personalities, coming to class on time, being prepared for the day's readings and activities, and refraining from talking or reading while others are speaking.
- Class Rules: lecture halls are communal spaces. All students are expected to be respectful to others who share the space, no beverages or food is allowed into the lecture room. Keep the room tidy and clean, and give utmost care to the equipment.
- Working on the lab computers during presentations: all students are expected to pay attention and take notes during lectures. Please refrain from working on the individual computers during class, presentations or discussions unless you take permission or doing so is an explicit component of the class exercise. Working on anything not related to lecture topic will lead to immediate dismissal from class. Repeating such actions will eventually affect the final grade
- Mobile phones: the use of phones in any manners is strictly prohibited. All Please make certain that all electronic devices are turned off before class begins.
- Bringing a newspaper or study materials (from other classes) to class: do not study material from other classes during this class. If you feel that you must spend our class time studying or doing homework, please go to the library.
- The content of the syllabus, lectures, and presentations; the design of the assignments; and calculation of the grade you earn are not starting points for negotiation. While the instructor is always willing to work with students on a one-on one-basis, individual terms cannot be negotiated with each student.
- Bringing guests to class: If you wish to bring a guest to class e.g. friend, relative, siblingplease consult with the instructor prior to the visit. Visitors are generally welcome in class; however, the instructor does reserve the right to decline accommodating requests for visits.
- The instructor reserves the right to request that a student (or visitor) leave the classroom in the event that his or her behaviour becomes unduly distracting or disruptive to the purposes of the class or to maintaining the civility of the classroom environment.

24. Required equipment: (Facilities, Tools, Labs, Training….)

Properly equipped lecture/seminar room
Data show
laptops/workstation

25. References:

- Almaani, M. S., Malkawi, F. 1993. Community Discourse and Designer's Responsibility. Proc. of Annual Conference of American Society of Engineering Education. On Shaping our World: Century II, University of Illinois at Urbana-Champaign, pp. 1449-54.
- Almaani, M. S. 1997. E-B Research and architectural Education. Proc. of International Conference. On Cultural Heritage & Architectural Education, MIU, International Union of Architects, Cairo 27-29 Dec., part 7.
- Altman, I. 1975. THE ENVIRONMENT AND SOCIAL BEHAVIOR. Monterey, California: Brooks/Cole.
- Altman, I. 1976. Privacy: A Conceptual Analysis. Environment and Behavior, Vol. 8, No. 1, pp. 7-29.
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- Bell, P., Baum A., Fisher, J., and Greene, T. 1990. ENVIRONMENTAL PSYCHOLOGY 3rd ed.. Harcourt Brace Jovanovich Publishers, USA.
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- Broadbent, Geoffrey. Bunt. Richard., & Liorens, Tomas. 1980. MEANING AND BEHAVIOR IN THE BUILT ENVIRONMENT. Jon Wiley and Sons, Chichester.
- Bustami, Leila H. 1997. Integrating Environment-Behavior Research Into Architectural Pedagogy: Applicability and Limitations. Proc. of International Conference. On Cultural Heritage & Architectural Education, MIU, International Union of Architects, Cairo 27-29 Dec., part 5.
- Chadirji, R. 1983. The Identification of Architectural Needs in the Middle East, lecture at RIBA, London, on the 11th January.
- Calhoun, J. & Acocella, Joan Ross. 1991. PSYCHOLOGY OF ADJUSTMENT AND HUMAN RELATIONSHIPS. McGraw-Hill, Inc., USA.
- Chen, Ke. 1993. Environmental Affordance: A Theoretical Framework for Incorporating some Behavioral Considerations in Residential Environments. Forum, Vol. 2, pp. 57-64.
- Deasy, C. M., Lasswell, T. E., 1985. DESIGNING PLACES FOR PEOPLE: A Handbook on Human Behavior for Architects, Designers, and Facility Managers. Whitney Library of Design, New York.
- Edney, Julian. 1976. Human Territories. Environment and Behavior, vol. 8, No. 1, pp. 31-47.
- Fehr, Lawerence A. 1983. INTRODUCTION TO PERSONALITY. Macmillan Publishing Company Inc., New York.
- Groat, Linda N. & Derspres, Carole. 1991. The Significance of Architectural Theory For Environmental Design Research. In: Zube, Ervin & Moore, Gary T. (editors), ADVANCES IN ENVIRONMENT, BEHAVIOR, AND DESIGN vol. 3. Plenum Press, New York & London, pp. 3-52.
- Gutman, Robert. 1982. The social Function of the Built Environment. In: Rapoport, Amos. 1982. THE MUTUAL INTERACTION OF PEOPLE AND THEIR BUILT ENVIRONMENT. Mouton Publishers, The Hague, Paris.
- Hall, E. T. 1966. THE HIDDEN DIMENSION. Doubleday, New York.
- Havilalnd, William A. 1993. CULTURAL ANTHROPOLOGY, 7th edition. Holt, Rinehart, and Winnston,

Inc., USA.

- Hershberger, Robert G. 1974. Predicting the Meaning in Architecture. In: Lang, J., and Burnette, C., and Moleski, W., and Vachon, D. (editors), DESIGNING FOR HUMAN BEHAVIOR: Architecture and the Behavioral Sciences, Dowden, Hutchison & Ross, Inc., pp. 147-156.
- Jomah, Hisham A. S. 1991. Architects, Clients, and Their Relationship. Edinburgh Architecture Research, Vol. 18, pp. 71-85.
- Kalat, James W. 1993. INTRODUCTION TO PSYCHOLOGY. Brooks, Cole Publishing Company, Pacific Grove, California.
- Kaplan, Stephen. 1988. Perception and Landscape: conceptions and misconceptions. In: Nasar, Jack L. (ed.), ENVIRONMENTAL AESTHETICS: Theory, Research, & Applications. Cambridge University Press, New York.
- Katzer, Cook, Crounch. 1982. EVALUATING INFORMATION. Addison-Wesly Publishing Company, London.
- Koontz, A. & Weihrich, H. 1990. ESSENTIALS OF MANAGEMENT. McGraw-Hill Publishing Company, USA.
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- Environmental Psychology An Introduction, Second Edition by Linda Steg Judith I. M. de
- Lang, J. 1987. CREATING ARCHITECTURAL THEORY: The Role of Behavioral Sciences in Environmental Design. VNR, New York.
- Lang, J. 1981. The Nature of Theory for Urban Design and Architecture. Urban Design International Vol. 1, No. 2 (Jan./Feb. 1980), p. 42.
- Lang, Jon. 1991. Design Theory from an Environment Behavior perspective. In: Zube, Ervin & Moore, Gary T. (editors), ADVANCES IN ENVIRONMENT, BEHAVIOR, AND DESIGN vol. 3. Plenum Press, New York & London, pp. 53-101.
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- Moore, Gary T. 1979a. Environment-Behavior Studies. In: Snyder, James C., and Catanese, Anthony. (editors), INTRODUCTION TO ARCHITECTURE. McGraw-Hill Book Company, USA, pp. 46-71.
- Moore, Gary T. 1979b. Knowing about Environmental Knowing: The Current State of Theory and

Research on Environmental Cognition. Environment and Behavior, Vol. 11, No. 1, pp. 33-71.

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- Walmsley, DJ. & Lewis GJ. 1993. PEOPLE AND ENVIRONMENT: Behavioral Approaches in Human Geography. Longman Scientific & technical, United Kingdom.
- Zeisel, John., 1981. INQUIRY BY DESIGN: Tools for Environment-Behavior Research. Brooks/Cole Publishing Company, California,
- Zube, Ervin & Moore, Gary T. (editors). 1991. ADVANCES IN ENVIRONMENT, BEHAVIOR, AND DESIGN vol. 3. Plenum Press, New York & London.

26. Additional information:

Name of Course Coordinator: ----------Signature: ---------- Date: ----------

Head of curriculum committee/Department: ---------- Signature: ----------

Head of Department: ---------- Signature: ----------

Head of curriculum committee/Faculty: ---------- Signature: ----------

Dean: ---------- -Signature: ----------

Appendix A

Week 1: Course Introduction

The aim of the course is to shade light on the integration of behavioral sciences in design with the aim of providing a good base from which architects could benefit in creating a responsive environment. The first week of the course will give a brief introduction on what is meant by theory, architecture and design, and behavioral approaches or sciences. These concepts will be discussed in depth in the following weeks.

- **Lecture 1: Introduction to the course**

  This lecture will include the introduction to the course, course outline presentation and overall structure of the course
- **Lecture 2: theory, architecture and design, behavioral sciences**

  Theory, architecture, behavioral sciences are ambiguous words; everybody knows more or less what they are but no one exact definition can be given to them. As such, the aim of this lecture is to give a general understanding of is meant by each of these terms so as to form a common base of understanding through out the rest of the semester.

Readings

Lang, J. (1987). Creating Architectural Theory: The Role of Behavioral Sciences in Environmental Design. VNR, New York. Pp. 13-31

Rapoport, Amos. (1979). Cultural Origins of Architecture. In: Snyder, James C., and Catanese, Anthony. (editors), Introduction To Architecture. McGraw-Hill Book Company, USA, pp. 2-20

Moore, Gary T. (1979). Environment-Behavior Studies. In: Snyder, James C., and Catanese, Anthony. (editors), Introduction to Architecture. McGraw-Hill Book Company, USA, pp. 46-48

Week 2: Part One the nature of the problem

Much can be said about the public dissatisfaction with contemporary architectural product as it fails to serve the client's pre-eminence and thus produce a discrepancy between the architects' intentions and their achievements and the catering for human needs. The reasons for such a failure are diverse but can be traced back to one or more of the following reasons (Lang, 1987); the legacy of the modern movement, the changing nature of the professional-client relationship resulting in the deficiency of communication between the architect and his client, the deeply rooted belief in architectural determinism, and the theoretical nature of architecture whether in education or practice.

- **Lecture 3: Legacy of the modern movement and architectural theory**

  Architectural designs of modern architecture were mostly judged upon the fulfillment of functional requirements through technology and thus emphasizing the technological and aesthetical aspects of design. Architects and designers thought that by satisfying aesthetic of form, they satisfy social and psychological needs. This was furthest from

truth, and accordingly, many of the designs of the modern movement i.e. international style failed to satisfy their intended human purpose due to the insufficient understanding of people, environment and behavior.

Readings

Lang, J. (1987). Creating Architectural Theory: The Role of Behavioral Sciences in Environmental Design. VNR, New York. Pp. 3-12

Wolfe, Tom. (1986). From Bauhaus to Our House. Washington Square Press, USA.

Jacobs, Jane. 1961. The Death and Life of Great American Cities. Random House Ltd., Canada.

Lipman, Alan. (1974). The architectural belief system and social behavior. In: Lang, J., and Burnette, C., and Moleski, W., and Vachon, D. (editors), Designing for Human Behavior: Architecture and the Behavioral Sciences. Dowden, Hutchison & Ross, Inc., pp. 23-30.

- **Lecture 4: the changing nature of professional-client relationship and architectural determinism**

  There is a gap in communication between architects and clients accompanied with a lack of information and understanding of human needs and behaviors. This is due to the professional-client relationship, and the concept of architectural determinism. The former results in a communication gap between users and architects due to social and administrative distances, the complexity of the society today, and type of training architects receive. The later indicates a misunderstanding of human behavior due to the problem of architectural role definition and the understanding of the word “Function”, where architects thought, in most cases, that the satisfaction of a given program and the satisfaction of aesthetics lead to the satisfaction of human needs and functioning

Readings

Mitchell, Howard E. (1974). Professional and client: An Emerging collaborative Relationship. In: Lang, Jon., Burnette, Charles., Moleski, Walter, and Vachon, David. (editors), Designing for Human Behavior: Architecture and the Behavioral Sciences. Dowden, Hutchison & Ross, Inc., pp. 15-22.

Jomah, Hisham A. S. (1991). Architects, Clients, and their Relationship. Edinburgh Architecture Research, Vol. 18, pp. 71-85.

Lipman, Alan. 1974. The architectural belief system and social behavior. In: Lang, J., and Burnette, C., and Moleski, W., and Vachon, D. (editors), Designing for Human Behavior: Architecture and the Behavioral Sciences. Dowden, Hutchison & Ross, Inc., pp. 23-30.

Week 3: Part two Nature of Architecture and architectural theory

- **Lecture 5: Definition of Architecture, Design Fields as Art and as Environmental Design, Design Fields as Profession and as Discipline.**

  Architecture can be understood through the understanding of its three main concerns; commodity, firmness, and delight. These concerns are related to the need to build or why do we build? Technology or how do we build? And aesthetics or our relation to what we build. Through design architecture creates built environment.

Readings

Rapoport, Amos. 1979. Cultural Origins of Architecture. In: Snyder, James C., and Catanese, Anthony. (editors), Introduction to Architecture. McGraw-Hill Book Company, USA, pp. 2-20

Jomah, Hisham A. S. 1991. Architects, Clients, and Their Relationship. Edinburgh Architecture Research, Vol. 18, pp. 71-85.

Chadirji, R. 1983. The Identification of Architectural Needs in the Middle East, lecture at RIBA, London, on the 11th January.

- **Lecture 6: concept of theory in design and architecture, normative theory, positive theory, substantive and procedural theory**

  Architectural theory is normative in nature; it deals with what ought to be or what should happen and how. It puts emphasis on the historical development of architecture and on aesthetic rules of composition. The positive base of architectural theory is poor. In order to develop a solid positive data base for architecture, and to shift the attention from the designed artifact to human's needs and values, substantive theory has to be developed.

Readings

Zube, Ervin & Moore, Gary T. (editors). 1991. Advances in Environment, Behavior, nnd Design vol. 3. Plenum Press, New York & London. pp.vii-ix

Lang, J. (1987). Creating Architectural Theory: The Role of Behavioral Sciences in Environmental Design. VNR, New York. Pp. 13-21

Lang, Jon. 1991. Design Theory from an Environment Behavior perspective. In: Zube, Ervin & Moore, Gary T. (editors), Advances in Environment, Behavior, and Design vol. 3. Plenum Press, New York & London, pp. 53-101.

Week 4: Design, Design Problems, and Design Methodology

- **Lecture 7: Design and Design Problems**

  Design is an activity that is not limited to fields as architecture and urban design; lawyers design a strategy for the defense of their client, team coaches design a plan to win games. *"Every designer devises courses of action aimed at changing existing situations into preferred ones"* (Simon, 1969, p.50) (cited in Zeisel, 1981). Within this lecture, a closer look about what is meant by design and design problems will be given

Readings

Rosenman, MA, Gero, JS, 1998. Purpose and Function in Design; from the socio-cultural to the techno-physical. In Design Studies Vol. 19 Number 2 pp. 161-187

Simon, Herbert A. (1977). Models of Discovery and Other topics in the Methods of Design. D. Reidel Publishing Company, Boston-U.S.A.

Simon, Herbert A. (1996). The Sciences of the Artificial. 3rd ed. MIT Press. Cambridge. Part 1 (pp. 1-24) & part 5 (pp. 111-138)

Goel, Vinod, Pirolli, Peter. (1992). The Structure of Design Problem Spaces. In Cognitive Science 16. pp. 395-429.

Rittle, Horst W.J. (1986). Some Principles for the Design of an Educational System for Design. In Design Methods and Theories, Volume 20. Number 1. pp. 359-375

- **Lecture 8: Models of Design Process: analysis/synthesis, conjecture/analysis, production/deduction/induction, and design as exploration**

  Design as a cognitive activity aims at altering a present unsatisfactory state of affairs into a desirable one. As such, there are phases through which the design process goes through. There are many accounts for what design methodology, some of which are covered here.

Readings

Bamford, Greg. (2002). From Analysis/synthesis to Conjecture/analysis: a review of Karl Popper's Influence on Design Methodology in Architecture. In Design Studies. Volume 23. pp. 245-261.

Cross, Nigel. (1986). Understanding Design: The Lessons of Design Methodology. In Design Methods and Theories. Volume 20. Number 2. pp.409-438.

March, Lionel. (1976) (Ed.). The Architecture of Form. Cambridge University Press. Cambridge. The Introduction

Robinson, J. W. (1986). Design as Exploration. In Design Studies. Volume 7. Number 2 April 1986. pp. 67-79

Week 5: Part Three Environment-Behavior Research

- **Lecture 9: environment behavior research definition, origins of the field, areas of concern**

  Environment-behavior research is a multidisciplinary field that deals with the mutual relation and interaction between people and the environment. Any environment-behavior research can be couched in terms of the three dimensions of place/setting, people/user groups, and behavior within a temporal framework.

Readings

Moore, Gary T. 1984. New Directions for Environment-Behavior Research in Architecture. In: James Snyder (Ed.). Architectural Research. VNR Int., New York. Pp. 95-112

Moore, Gary T. (1979). Environment-Behavior Studies. In: Snyder, James C., and Catanese, Anthony. (editors), Introduction to Architecture. McGraw-Hill Book Company, USA, pp. 46-71

McAndrew, Francis T. (1993). *Eenvironmental Psychology*. Brooks/Cole Publishing Company, California. Chapter 1 pp. 1-9

- **Lecture 10: Environment-Behavior Research and Architecture; the three basic questions**

  In this part of the course, substantive concepts concerning environment-behavior research will be presented within the framework of Rapoport's (1976, 1977) three questions: the first identifies characteristics of humans that affect their relation with the environment; the second deals with the environment, the built environment and its affordances and effects on humans; and the third deals with the mechanisms that link humans and the environment together.

Readings

Lang, J. (1987). Creating Architectural Theory: The Role of Behavioral Sciences In Environmental Design. VNR, New York. Pp. 73-108

Rapoport, Amos. (1976). The MUTUAL INTERACTION OF PEOPLE AND THEIR BUILT ENVIRONMENT. Mouton Publishers, The Hague, Paris.

Rapoport, Amos. (1977). HUMAN ASPECTS OF THE URBAN FORM: Towards a Man-Environment Approach to Urban Form and Design. Pergamon Press, Oxford, England.

Week 6: question one

Within the framework if this week, lecture will deal with the first question of Rapoport "*What are the characteristics of people as members of various groups which affect how the built environment is shaped?"* To answer the previous question, one would require knowledge about the background of man, his social and cultural environment. In order to provide this knowledge, we will talk about

humans in terms of motivations and needs, personality, and social and cultural aspects for the two lectures within this week.

- **Lecture 11: Human motivation, needs, personality,…**

  In order to better understand why humans undertake any activity whether in their behaviors or in their interaction with the environment, a better understanding of what drives humans in their actions is needed. Human behavior is motivated by the desire to accomplish something. Thus, one way of understanding humans is an understanding their motives, needs, personalities.

Readings

Chadirji, R. 1983. The Identification of Architectural Needs in the Middle East, lecture at RIBA, London, on the 11th January.

Lang, J. 1987. Creating Architectural Theory: The Role of Behavioral Sciences in Environmental Design. VNR, New York. pp. 84-108

Kalat, James W. 1993. Introduction to Psychology. Brooks, Cole Publishing Company, Pacific Grove, California.

Calhoun, J. & Acocella, Joan Ross. (1991). Psychology of Adjustment and Human Relationships. McGraw-Hill, Inc., USA.

Lang, J. 1987. Creating Architectural Theory: The Role of Behavioral Sciences in Environmental Design. VNR, New York. pp. 84-108 pp. 157-178

- **Lecture 12: continued; humans in social systems and culture**

  Humans don't live in isolated by themselves; they live in communities where they directly or indirectly interact with each other forming social systems that consciously or unconsciously affect their behaviors. Furthermore, one of the greatest achievements of humans is culture. Culture is the general framework for human behavior

Readings

Rapoport, Amos. (1977). Human Aspects Of The Urban Form: Towards a Man-Environment Approach to Urban Form and Design. Pergamon Press, Oxford, England.

Havilalnd, William A. 1993. Cultural Anthropology, 7th edition. Holt, Rinehart, and Winnston, Inc., USA.

Week 7: Question two

In this part we will deal with issue of *"What are the effects of the environment on human behavior and what does it afford them?"* in order to achieve that, we must define what is meant by the word environment;

- **Lecture 13: what do we mean by the 'environment? Environmental affordances, environmental factors; noise, stress, and crowding**

  There are many classifications and definitions of the environment; environment refers to what surrounds us. For Rapoport, it is *"as any condition or influence outside the organism, group, or what ever system is being studied"* the aim of this lecture is to give a breath survey of the meaning of the environment as it has been defined by different authors. Further, elements such as stress, crowding, and noise will be discussed as part of the cotemporary environment.

Readings

Lang, J. 1987. Creating Architectural Theory: The Role of Behavioral Sciences in Environmental Design. VNR, New York. pp. 77-83

McAndrew, Francis T. (1993). *Eenvironmental Psychology*. Brooks/Cole Publishing Company, California. Chapters 3,4,7

- **Lecture 14: the built environment**

  The way people arrange and structure the surfaces around them whether natural or artificial affects the way people interact with each other and to some extent it can change or results from the change in the social and cultural environment. Since architects and urban designers are responsible for much of these structures a better understanding of what it is, and how it affects human behavior is needed

Readings

Rapoport, Amos. (1979). Cultural Origins of Architecture. In: Snyder, James C., and Catanese, Anthony. (editors), Introduction to Architecture. McGraw-Hill Book Company, USA, pp. 2-20

Gutman, Robert. (1982). The social Function of the Built Environment. In: Rapoport, Amos. The Mutual Interaction of People and Their Built Environment. Mouton Publishers, The Hague, Paris.

Calhoun, J. & Acocella, Joan Ross. 1991. Psychology of Adjustment and Human Relationships. McGraw-Hill, Inc., USA.

Week 8

- **Lecture 15: The Concept of behavioral setting**

  Barker (1968) presented the concept of behavioral setting that consists of an activity, a layout in the environment, a congruent relationship between the activity and the lay out i.e. synomorphy, and a specific time period. The concept of behavioral setting can be very useful as a unit for analysis and design of the environment.

Readings

Barker, Roger. (1968). Behavioral setting: Defining Attributes and Varying Properties. In Ecological Psychology: Concepts and Methods for Studying the Environment of Human Behavior. Stanford University Press. Stanford. Ca. pp. 183-193.

Lang, J. 1987. Creating Architectural Theory: The Role of Behavioral Sciences in Environmental Design. VNR, New York. pp. 113-125

Kaminshi, Gerhard. (1989). The Relevance of Ecologically Oriented Theory Building in Environment and Behavior Research. In Zube, Ervin & Moore, Gary T. (editors), Advances in Environment, behavior, and Design vol. 2. Plenum Press, New York & London, pp. 3-36

- **Lecture 16: Social Interaction and the environment**

  The need to belong to a group comes in the middle range of the hierarchy of human needs as defined by Maslow. Social interaction and integration is one of the means through which membership to a group can be achieved. As such, many buildings are designed with the intention of promoting human interaction. Thus lecture aims at presenting a better understanding of social interaction and its relation to the built environment.

Readings

Giddens, Anthony. (1997). *Sociology*. 3rd edition. Oxford: Blackwell Publishers Ltd.

Lang, J. 1987. Creating Architectural Theory: The Role of Behavioral Sciences in Environmental Design. VNR, New York. pp. 157-165

Campbell, David & Campbell Toni A. (1988). A New Look at Informal Communication: The role of the Physical Environment. Environment and Behavior. Volume 20. Number 2. March. Pp 211-226

Goffman, Ervin. (1963). Behavior in Public Spaces. Free Press. New York.

Week 9

This question in this part is *"What are the mechanisms that link people to their environment?"* In order for humans to act in the environment, they need to acquire environmental information and use it in a form of a decision making process, and this serves as a prelude for overt behavior. Thus, essential to our understanding of environment-behavior interaction is the understanding of environmental perception, environmental cognition, and evaluation.

- **Lecture 17: Environmental Perception and Environmental Cognition: perception, psychophysics, theories of environmental perception, cognition, cognitive maps**

  In order to understand the mechanics that link people and the environment and their mutual interaction, we need an understanding of how people obtain environmental information through perception, how people organize and understand this information through cognition.

Readings

Moore, Gary T. 1979b. Knowing about Environmental Knowing: The Current State of Theory and Research on Environmental Cognition. Environment and Behavior, Vol. 11, No. 1, pp. 33-71.

Veitch, R & Arkkelin, D. (1995). *Environmental Psychology: An Interdisciplinary Perspective*. Prentice-Hall, Englewood Cliffs, NJ. Chapter 4(pp. 75-116)

McAndrew, Francis T. (1993). *Environmental Psychology*. Brooks/Cole Publishing Company, California. Chapter 10 (pp. 205-230)

- **Lecture 18: environmental meaning: Semiotics, Hershberger's Model, environmental attitudes, preferences and evaluation**

  After people read and understand environmental information they act. Their action depends on the meaning the environment has for them, and on the manner in which they evaluated the environment. This lecture will tackle the issues of understanding environmental meaning, environmental attitudes, preferences, and evaluation.

Readings

Hershberger, Robert G. 1974. Predicting the Meaning in Architecture. In: Lang, J., and Burnette, C., and Moleski, W., and Vachon, D. (editors), Designing for Human Behavior: Architecture and the Behavioral Sciences, Dowden, Hutchison & Ross, Inc., pp. 147-156.

Rapoport, Amos. 1982. The Meaning of The Built Environment: A Nonverbal Communication Approach. SAGE Publications, California.

Krampen, Martin. (1991). Environmental Meaning. In: Zube, Ervin & Moore, Gary T. (editors), Advances in Environment, Behavior, And Design vol. 3. Plenum Press, New York & London, pp. 231-268.

Bell, P., et. al., (1990). Environmental Psychology. 3rd ed. Harcourt Brace Jovanovich Publishers, USA.

Week 10

The study of person-environment spatial relations is known as proxemics. It was introduced in the work of Hall (1966) *The Hidden Dimension.* It includes the concepts of territoriality, personal space and privacy. These issues are of an extreme importance to the design of the built environment for

they affect the way humans act and react towards each other and towards the social and physical environment.

- **Lecture 19: Personal space, Defensible space, and Privacy**

  People attempt to maintain varying distances between themselves and the others as if there is a hidden dimension that is to be kept among them among interaction. The interpersonal distance and the regulation of the space around us can be seen as non-verbal communication or a silent language as Hall (1966) stated. In order to better understand this hidden dimension, the concepts of personal space, privacy, and defensible space will be introduced.

Readings

Hall, E. T. (1966). The Hidden Dimension. Doubleday, New York.

Sommer, R. (1969). Personal Space: The Behavioral Basis for Design. Princeton-Hall, Englewood Cliffs, NJ.

Newman, Oscar, (1972). Defensible Space: Crime Prevention through Urban Design. Macmillan, New York.

Altman, I. (1976). Privacy: A Conceptual Analysis. Environment and Behavior, Vol. 8, No. 1, pp. 7-29.

- **Lecture 20: territoriality,**

  Territoriality can be defined as the action by which organism lays claim to an area, personalizes it, and defends it against members of his or her own species. If a territory is thought of as the space around an individual or a group that the individual or the group thinks of it as its own and therefore distinguishes it from others, then this concept has an appeal in the study of human affairs an is of particular interest to designers

Readings

Altman, I. (1975). The Environment and Social Behavior. Monterey, California: Brooks/Cole

Bell, P., et al., (1990). Environmental Psychology. 3rd ed. Harcourt Brace Jovanovich Publishers, USA.

Week 11

- **Lecture 21: The Place of Environment-Behavior Information in the Design Process**

  Environment-behavior research can contribute in many ways to the building up of architectural theory; either in the form of substantive knowledge i.e. information, theories and models regarding the nature of the relation between humans and the built environment.

Readings

Zeisel, John., 1981. Inquiry by Design: Tools for Environment-Behavior Research. Brooks/Cole Publishing Company, California

Lang, J. 1987. Creating Architectural Theory: The Role of Behavioral Sciences in Environmental Design. VNR, New York. pp. 31-65

- **Lecture 22: Integration of Environment-Behavior Research into Architecture; A Proposed Model**

  Environment-behavior information stem from various disciplines and they have to be organized in a manner to be used by designers and architects. We proposed to organize the information in three systems of building, environment, and people as proposed by Broadbent. The interaction of these systems and their subsystems can be

studied through an environment-behavior model, and its results can be incorporated in the design process mainly the program development phase and the evaluation phase.

Readings

Broadbent, Geoffrey. (1988). Design in Architecture: Architecture and the Human Sciences. David Fulton Publishers, London

Veitch, R & Arkkelin, D. 1995. Environmental Psychology: An Interdisciplinary Perspective. Prentice-Hall, Englewood Cliffs, NJ. Chapter 2 pp. 15-46

Week 12

- **Lecture 23: World Views in Psychology: Trait, Interactional, Organismic, and Transactional Perspectives**

  Research in any field is influenced by both explicit and implicit world-views and underlying philosophical assumptions. These world-views illuminate different ways of thinking about a certain phenomenon and different underlying assumptions; they can create different visions of the same phenomenon and accordingly very different research questions and expectations. Thus, the general theme of this week will be on the origins, world views, and paradigms of environment-behavior research.

Readings

Altman, Erwin, Rogoff, Barbra. World Views in Psychology: Trait, Interactional, Organismic, and Transactional Perspectives.

Morgan, Gareth, Smirich, Linda. (1980). The Case for Qualitative Research. In Academy of Management Review. Vol. 5. N0. 4. pp. 491-500

- **Lecture 24: Paradigms In Environment-Behavior Research: Phenomenology, Positivism, and Structuralism**

  Research in any field has a framework that can be either personal or paradigmatic. Paradigms frames the researcher's perspective about how things fit together and affects his/hers choice of the nature of the phenomena being investigated and the methods. Each of the different paradigms has a different way of looking at phenomena, and as a result, a different interpretation of it.

Readings

Seamon, David. (1987). Phenomenology and Environment Behavior Research. In Zube, Ervin & Moore, Gary T. (editors), **Advances in Environment, behavior, and Design** vol. 1. Plenum Press, New York & London, pp. 3-27

Winett, Richard A. (1987). Empirist-positivist Theories of Environment and Behavior: New Directions for Multilevel Frameworks. In Zube, Ervin & Moore, Gary T. (editors), **Advances in Environment, behavior, and Design** vol. 1. Plenum Press, New York & London, pp. 29-57

Franck, Karen A. (1987) Phenomenology, Positivism, and Empiricism as Research Strategies in Environment-Behavior Research. In Zube, Ervin & Moore, Gary T. (editors), **Advances in Environment, behavior, and Design** vol. 1. Plenum Press, New York & London, pp. 59-67

Lawrence, Roderick J. (1989). Structuralist Theories in Environment-Behavior-Design Research: Application for Analyses of People and the Built Environment. In Zube, Ervin & Moore, Gary T. (editors), **Advances in Environment, behavior, and Design** vol. 2. Plenum Press, New York & London, pp. 37-70

Week 13

- **Lecture 25: Research Methodology: quantitative and qualitative research, and standards of quality**

  The word methodology means the study of a particular method to reach a desired end. All research methodology rests on the axiom: *The nature of the data and the problem for research dictate the research methodology.* Furthermore, the type of research carried dictates the standards of quality within that research's framework.

Readings

Leedy, Paul. (1995). Practical Research: Practice and Design. Macmillan Publishing Company, New York. Chapter 6 pp. 137-148

Groat, Linda, Wang, David. (2002). Architectural Research Methods**.** John Wiley and Sons, Inc. Chapters 1&2 (pp. 1-45)

- **Lecture 26: Methods of Collecting Data: Questionnaire, Interviews, Observation, Literature Review.**

Readings

Leedy, Paul. (1995). Practical Research: Practice and Design. Macmillan Publishing Company, New York. Chapters 8,9,10,11 pp. 183-312

Marans, Robert A., Ahrentzen, Sherry. (1987). Developments in research Design, Data Collection, and Analysis: Quantitative methods. In Zube, Ervin & Moore, Gary T. (editors). 1991. Advances in Environment, Behaviour, And Design vol. 1. Plenum Press, New York & London. Pp. 251-278

Low, Setha M. (1987). Developments in research Design, Data Collection, and Analysis: Qualitative methods. In Zube, Ervin & Moore, Gary T. (editors). 1991. Advances in Environment, Behaviour, And Design vol. 1. Plenum Press, New York & London. Pp. 279-307.

Week 14: Part 4

The course has shade light on the amount of information that can be contributed from environment-behavior studies to the design fields. In other words, within the coming two lectures we will see how the information supplied through environment-behavior research was transformed into a set of guidelines for the design of a better built environment or was integrated into design to produce environment that are more responsive to the needs of users. This will be carried away in both residential design and institutional design of health care facilities and work place design.

- **Lecture 27: Residential Design; guidelines for building better homes**

  When we think of living, the first thing that comes to our minds is homes and apartments. Homes are the centers of living and the place where one should feel most comfortable. As such, the design of residential design should cater the most for the needs, goals, and aspirations of its inhabitants. This lecture will tackle the following issues in relation to residential design; friendship formation, group membership, personal space and territoriality, communication and cue searching, and personal safety in the design of the residential environment..

Readings

Deasy, C. M., Lasswell, T. E. (1985). Designing Places for People: A Handbook on Human Behavior for Architects, Designers, and Facility Managers. Whitney Library of Design. New York. Pp. pp.

- **Lecture 28: Residential design cont.: single family housing, apartments, and public housing, dormitories, housing for the elderly**

  There is a diversity of residential housing; single family housing, apartments and public housing, dormitories, housing for the elderly. People are attached to their housing, and further, people express themselves, define group membership and declare status. This lecture will give an understanding of each the different types of housing and how people relate to them

Readings

McAndrew, Francis T. (1993). *Eenvironmental Psychology*. Brooks/Cole Publishing Company, California. Chapter 10 (pp. 205-230)

Week 15

The efficiency with each the humans functions is related to how good the built environment is designed-goodness of design is a relative issue that can be discussed separately-. In lectures for this week we will look at public built environments e.g. hospital and workplaces and a number of issues that are important for the design of such public institutions.

- **Lecture 29: Institutional design: what is institutional design, health care facility design**

  Health care facilities are some of the most complex buildings that architects have to deal with because of the advancement of technology, and expanded need for such facilities. Further the design of such facilities caters for the needs of a variety of users: health care staff, patients, and visitors along may others. this lecture will give a general overview related to the design of health care facilities.

Readings

Shumaker, Sally A., Pequegnat, Willo. (1989). Hospital design, Health Providers, and the Delivery of Effective Health Care. In, Zube, Ervin & Moore, Gary T. (editors), Advances in Environment, Behavior, and Design vol. 2. Plenum Press, New York & London, pp. 161-202

Deasy, C. M., Lasswell, T. E., 1985. Designing Places for People: A Handbook on Human Behavior for Architects, Designers, and Facility Managers. Whitney Library of Design. New York. Pp. 112-119

- **Lecture 30: Institutional design cont…: the design of the work place; rooms and furniture, performance and arousal, job satisfaction…**

  Next to homes, work places are where most humans spend most of their time; to support themselves and their families. Nature of work and workplace varies between different professions; nevertheless, there are common characteristics that are common to most workplaces that affect workers comfort and productivity, and job satisfaction. This lecture will look at the design of the office work place as an example in order to exemplify how environment-behavior information can benefit the design of the workplace.

Readings

Becker, Franklin. 1991). Workplace Planning, Design, and Management. In, Zube, Ervin & Moore, Gary T. (editors). Advances in Environment, Behavior, and Design. vol. 3. Plenum Press, New York & London. (pp. 115-152)

McAndrew, Francis T. (1993). *Eenvironmental Psychology*. Brooks/Cole Publishing Company, California. Chapter 8 (pp. 163-184)