

FARWESTERN UNIVERSITY
FACULTY OF ENGINEERING
BACHELOR OF ARCHITECTURE DEGREE
(Course of Study 2075)

Course Title: Basic Design I	Credit: 4
Course Code.:AR 111	Number of lecture/week: 2
Nature of the Course: Practical	Tutorial/week: 6
Year/Semester: I/I	Total hours: 120

Course Introduction:

The studio introduce the meaning of "design" and relate it to "architecture" through an understanding of basic elements of architecture, vocabulary of in visual and basic principles, and analysis of design elements. Thereby, sensitize students to be more observant to their surroundings and promote it as a basic creative instinct in the students. This studio teaches the students to learn the basics of graphic design and three-dimensional composition

Course Objectives:

- To develop the ability to translate abstract principles of design into architectural solutions for simple problems.
- To understand the elements and principles of Basic Design as the building blocks of creative design through exercises that will develop the originality, expression, skill and creative thinking.
- To enable the understanding of 3 D Composition which will help generation of a form from a two dimensional / abstract idea.
- To introduces drawings and models as tools for conceptualization, organisation and furthering of design thought process.

Course Outline:

The course shall be conducted by giving a number of exercises in the form of design studios, seminars and creative workshops that are aimed at teaching the following:

Elements and principles of visual Composition using point, line, shape, volume etc.

Exploring color schemes and their application in a visual composition and in Architectural forms and spaces.

Study of texture and schemes of texture both applied and stimulated and their application

Study of linear and planar forms using simple material like Mount Board, metal foil, box boards, wire string, thermocol etc.

Study of Solids and voids to evolve sculptural forms and spaces and explore the play of light and shade and application of color.

Study of fluid and plastic forms using easily moldable materials like clay, plaster of paris etc.

Analytical appraisal of building form in terms of visual character, play of light and shade, solids and voids etc.

Units	Contents	Allocated hours	Marks distribution
I	<p>Learning sketching, drawing and visual thinking Free-hand drawing appropriate to visual & architectural representation, indoor & outdoor sketching, drawing from observation, terminology, abbreviations and signage used in visualrepresentation, Sheet layouts, art lettering, shading, symbols & scale. Introduction to fundamentals of visual representation: Points, line & shape, tone & texture, figure & ground, Colour& value. Exercises: 1. Dots, lines, shapes & forms 2. Hatching patterns 3. 2D compositions with geometric & organic shapes 4. Colour compositions on 2d compositions. 5. Textures replacing colours.</p>	21	
II	<p>Composition Understanding the principles of design such as Repetition, Harmony, Contrast, Dominance, Balance, Dynamism, etc. Exercise: 1. Make two dimensional and three dimensional compositions involving various elements of design such as Line, Shape, Colour, Texture,</p>	9	

	Transparency, Mass, space etc.		
III	Form building (Models) Students shall be make a vivid video presentation on form building models with ample samples Exercises: 1. 3D sculpture exercises (additive & subtractive forms – solids & voids) 2. Space frame model using a linear module (space creation) 3. Origami models (space creation + solids & voids) 4. Life scale models (group)	18	
IV	Sculptural forms and spaces Explore play of light & shade and application of colour. Introduction to external & internal forms, Concept of space, interrelationship between space, volume and order Variations in forms with planar juxtapositions, understanding the Elementary structural forms. Exercise: 1. Make three dimensional sculptures involving the basic platonic solids and abstract sculptures.	9	
V	Forms in nature Study of forms in nature and analysis with respect to their colour, form, texture and structure. Exercise: 1. Exercises involving these natural forms and various approaches to art such as –Representation, Abstraction and Non-Representational/ Non-Objective compositions.	6	
VI	Scale conversion Measured drawing of familiar objects and spaces for understanding of scale conversion. Exercise: 1. Draw plan, elevations and section of drawing table and tool/chair etc.	9	
VII	Application of basic design Formulate a process of testing the various elements of space making learnt earlier in the semester through a project on an actual site Exercise: 1. Design of simple architectural elements like entrance gates, walls, courtyards, porches, etc.	18	

Evaluation scheme:

The portfolio will cover all the chapters in the syllabus. The evaluation scheme will be as possible as indicated in the table below:

Week/Hrs	Stage	Marks
15/90	The portfolio covering all the assignments shall be submitted at the end of semester.	200

References:

- Francis D. K. Ching, 'Architectural Graphics', Wiley, 2009.
 Geoffrey Broadbent 'Design in Architecture' John Wiley and Sons, 1973.
 Simon Unwin, 'Analyzing Architecture', Routledge, 2003.
 Simon Unwin, 'An Architecture Notebook Wall 'Routledge, 2000.
 V.S.Pramar, Design fundamentals in Architecture, Somaiya Publications Pvt. Ltd., New Nelhi, 1973.
 John W.Mills - The Technique of Sculpture, B.T.Batsford Limited, New York - Reinhold Publishing Corporation, London, 1966.
 Charles Wallschlaeger&SynthiaBusic Snyder, Basic Visual Concepts & Principles for artists, architects & designers, McGraw hill, USA, 1992.
 Paul Zelanski& Mary Pat Fisher, Design principles &Problems , 2nd Ed, Thomson & Wadsworth, USA,1996
 Owen Cappleman& Michael Jack Kordan, Foundations in Architecture: An Annotated Anthology of beginning design projects, Van Nostrand Reinhold, New York.
 TrewinCoplestone, Arts in Society, Prentice Hall Inc, Englewoods Cliffs, N. J. 1983. 4. H. Gardner, Art through ages.
 Paul Laseau. (2001). Graphic Thinking For Architects and Designers, John Wiley & Sons, New York
 Ching, F. D. K. (1997). Design Drawing. Hoboken : John Wiley & Sons.
 Ching, F. D. K. (2012). Architecture: Form, Space and Order. 3rd Ed. Hoboken: John Wiley & Sons.
 Broadbent, G. (1973). Design in Architecture - Architecture and Human Science. John Wiley and Sons, New York
 Chauhan, P. (2005). Learning Basic Design. Mumbai : Rizvi College of Architecture.

Far Western University
Faculty of Engineering
Bachelor's Degree in Architecture
Course of Study 2075

Course Title: Engineering Mathematics I	Credit: 3
Course Code: SH 112	Number of lecture/week: 3
Nature of the Course: Theory	Tutorial/week: 1
Year/Semester: I/I	Total hours: 45

1. Course Objectives

This course aims to provide the student a sound knowledge of calculus, analytical geometry, probability and statistics and vector geometry to apply them in their relevant fields.

2. Contents in detail with specific objectives

Specific Objectives	Units/Chapters
<ul style="list-style-type: none"> • Provide the concept of derivative and higher continuity and order derivative • To expand the single valued function in infinite power series • Discuss the term partial derivation and its application. • To explain the concept of curvature and can trace graph of some plane curves • Can evaluate limiting value with the help of L. Hospital theorem 	<p>Unit 1: Derivatives and their applications (12 hrs)</p> <p>1.1 Introduction (Basic concept of limit, derivative.</p> <p>1.2 Higher order derivative (some special functions)</p> <p>1.3 Mean value theorems</p> <p style="padding-left: 20px;">1.3.1 Rolle's theorem</p> <p style="padding-left: 20px;">1.3.2 Lagrange's theorem</p> <p style="padding-left: 20px;">1.3.3 Cauchy's theorem</p> <p>1.4 Power series expansion of single</p> <p style="padding-left: 20px;">1.4.1 Taylor's Series</p> <p style="padding-left: 20px;">1.4.2 Maclaurin Series</p> <p>1.5 Partial derivative and extrema of function of two or three variable</p> <p>1.6 Indeterminate form, L. Hospital rule, tangent and normal curvature ,asymptote and curve tracing</p>
<ul style="list-style-type: none"> • Give the concept of integration • Define improper integral of different types • Discuss the meaning of Beta, Gamma function and its important properties • Derive reduction formula of $\sin^n x$, $\cos^n x$ etc • Discuss the integration in polar co-ordinate • Find the area, volume by help of double integral for Cartesian and Polar curve. 	<p>Unit 2: Integration and its application (10 hrs)</p> <p>2.1 Introduction</p> <p>2.2 Integration as limit of sum</p> <p>2.3 Definite integral and its properties</p> <p>2.4 Improper integral.</p> <p>2.5 Reduction formula and Beta, Gamma function.</p> <p>2.6 Concept of multiple integral (double integral) in Cartesian and Polar Co-ordinate</p> <p>2.7 Application of integration for finding area, length, volume and surface area of solid of revolution to Cartesian and Polar curve.</p>

<ul style="list-style-type: none"> • To explain plane curves • To derive equation of plane Curves when axes are translated to new position or rotated through a constant angle or both • To derive equation of Conic sections in standard and general form • To derive equation of tangent and normal to parabola and ellipse 	<p>Unit 3: Two dimensional geometry (12 hrs)</p> <p>3.1 Review of plane geometry and plane curve(Cartesian and Polar)</p> <p>3.2 Transformation of Co-ordinates: translation and rotation</p> <p>3.3 Equation of conic section (Parabola, Hyperbola, Ellipse) in Cartesian and Polar form</p> <p>3.4 Equation of tangent and normal to different conics.</p>
<ul style="list-style-type: none"> • To represent the numerical data according as its nature in differential forms • To explain outcome and event of a random experiment • To explain the meaning of Probability distribution and calculate the mean and Variance • To explain normal distribution and its use 	<p>Unit 4: Data analysis and Probability (6 hrs)</p> <p>4.1 Data representation average, spread</p> <p>4.2 Experiments, out come, event</p> <p>4.3 Probability</p> <p>4.4 Random variable and Probability distribution (Binomial, Poission and hyper geometric distribution)</p> <p>4.5 Mean and variance of probability</p> <p>4.6 Normal distribution</p>
<ul style="list-style-type: none"> • To explain vector and scalar quantity • To convert one system of space curve system • To find vector product and scalar product two or more vectors and explain their geometric meaning • To derive vector equation of line and plane 	<p>Unit 5: Vector Algebra (5 hrs)</p> <p>5.1 Review of vector and scalar quantity and plane and space vectors</p> <p>5.2 Space co-ordinates (Cartesian, into another Cylindrical and Spherical)</p> <p>5.3 Product of two or more vectors.</p> <p>5.4 Reciprocal system of vector and its properties</p> <p>5.5 Vector equation of line and plane.</p>

❖ **Note:** The figure in the parenthesis indicates approximate period for respective units.

❖ **Evaluation system:**

Undergraduate Program				
External evaluation	Marks	Internal Evaluation	Weightage	Total
End semester Exam	60	Assignments	10%	40
		Quizzes	10%	
		Attendance	10%	
		Presentation	10%	
		Term papers	10%	

		Mid-term Exam	40%	
		Group Work	10%	
		Total internal	100%	40
Total external	60			60
Full marks	60 + 40			100

❖ **External Evaluation:**

End semester examination: It is a written examination at the end of semester. The questions will be asked covering all units of the course. The question model full marks figure and other will be as per the following grid.

Nature of question	Total questions to be asked	Total questions to be answered	Total marks
Group A Multiple choice	20	20	20X1=20
Group B Short question	8	6	6X8=48
Long question	3	2	2X16=32

Reference books:

1. Calculus and Analytical Geometry, George B. Thomas, Ross L. Finney
2. Advanced Engineering mathematics: Erwin Kreyszig,, John Wiley and Sons Inc
3. Calculus: Santosh Man Maskey, Ratna Pustak Bhandar Nepal
4. M.B. Singh, B. C. Bajrachrya: Differential calculus, Sukunda Pustak Bhandar, Nepal
5. Vectoe analysis: M.B Singh
6. Integral Calculus: G.D. Pant
7. Advanced Engineering mathematics: H.K .Dass

**Far Western University
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Bachelor's Degree in Architecture
Course of Study**

Course Title: Drafting	Credit: 3
Course Code.: AR 113	Number of lecture/week: 1
Nature of the Course: Practical	Practical/week: 5
Year/Semester: I/II	Total hours: 45

1. Course Introduction:

This course incorporates use of drafting instrument and principles of orthographic and parallel projection as well as perspective and sciagraphyto develop drafting skills.

2. Course Objectives:

- To introduce and excercisedrafting tools and graphicaltechniques
- To introduce and excercisedrafting through concepts and principles of orthographic and parallel projection.
- To introduce and exercise drafting of 3d drawings through concepts and principles of perspective and sciagraphy.

3. Specific Objectives and Specific Contents:

Specific Objectives	Specific Contents
In this Unit:various drafting tools and graphical techniques are discussed.	1.UNIT 1: Preliminary Drafting Skills and Projection (4 hrs) 1.1. Introduction of drawing and its classification, Artistic Drawings, Engineering Drawings (Civil Eng. Drawings, Computer Eng. Drawings, Electrical Eng. Drawings, Electronics Eng. Drawings, Mechanical Eng. Drawings),Architectural Drawings, Geometrical Drawing: (a) Plane Geometrical Drawing (b) Solid Geometrical Drawing
In this Unit: Concept, application, types and examples of projection are discussed.	2. UNIT2: Theory of Projections (1hrs) 2.1. Introduction and types of projections (a) Orthographic projection (b) Pictorial projection: Axonometric , Oblique and Perspective
In this unit, Orthographic Projection and its application to various two-dimensional and three-dimensional drawings are discussed.	3. UNIT 3: Orthographic Projection (2hrs) 3.1. Introduction 3.2. System of three planes 3.3. Principles of orthographic projection 3.4. Projection of point in different planes

	<p>3.5. Projection of lines of different position in relation to the projection planes</p> <p>3.6. Projection of rectangular surfaces of different position in relation to the projection planes</p> <p>3.7. Projection of solids (cube, hexagonal prism, cylinder, cone, pentagonal pyramid and sphere) in different projection planes</p> <p>3.8. Projection of point and lines on the surface of solid figures</p> <p>3.9. Projection of three dimensional objects in different planes (conversion of isometric views into orthographic projection)</p>
This unit deals with meaning of colors in architectural graphics and their appropriate use.	<p>4. UNIT 4: Pictorial Projection- 3D drawing (2hrs)</p> <p>4.1. Isometric Projection: Isometric scale, isometric axes, isometric lines, isometric planes</p> <p>4.2. Conversion of orthographic views into isometric projection and drawing</p> <p>4.3. Conversion of geometrical and architectural drawing into axonometric projection 45° – 45°, 30°-60° (Metric projection)</p>
This unit deals with use of various mediums of graphics for detailing as well as rendering architectural drawings.	<p>5. UNIT 5: Different views sections and surfaces. (3hrs)</p> <p>5.1. Auxiliary views and its type and projection</p> <p>5.2. Sectional views and its types and projection (section of solids)</p> <p>5.3. Intersection of surfaces and its methods of projection</p> <p>5.4. Development of surfaces and its methods of projection</p>

4. Practicals, Class Hours and Evaluations:

	Title	Quantity	Hour	Total Marks
1.	Introductory Sheet of Art and Sketching	1	6	
2.	Exercise of Solid Forms	1+1		
3.	Exercise in Man-made, Natural and Geometrical Objects	1		
4	Exercises in interpenetration of Geometrical Forms: <ul style="list-style-type: none"> • Prismatic and Pyramidal Form • Cylinder and Conical Form • Spherical and Other Forms 	1 1 1	10	

	<ul style="list-style-type: none"> • Design Building, forms 	1		
5.	Exercise on basic principle and composition using compositional properties based on model making	1 model	12	
6.	Exercise on Tonal Chart	1 +1		
7.	Exercise on Textures	1		
8.	<p>Exercise on entourage like trees, human figures, vehicles, water bodies, ground, walkways, roadways, cloud, etc.</p> <p>(a) Trees: drawing 2D trees in different sizes and types (top view and front view), also drawing 3D sketches of trees</p> <p>(b) Human figures: drawing human figures in various positions like standing, sitting, moving, single, dual and group of people with different activities in different scales.</p> <p>(c) Vehicle: drawing vehicle using box method, different designs and directional movement in different scales.</p> <p>(d) Others: drawing waterbodies, ground, bacd hatching, walk ways, road ways, cloud, etc</p>	1 1 1 1		
9.	<p>Exercise on 2D/3D compositions</p> <p>(a) Collage/ Mural</p> <p>(b) Event Poster or magazine cover</p>	1 1		
10.	<p>Exercise on Color.</p> <p>(a) Color Wheel: Prang system of Color (12 Nos.)</p> <p>: Munsell System of Clor (10 Nos.)</p> <p>: Classical system</p> <p>Intermediate Color</p> <p>(b) Related color scheme</p> <p>(c) Contrast color scheme</p> <p>(d) Neutral color scheme</p>	1 1 1 1 1 1	16	

	(e) Tints and Tones	1		
11.	Execises on rendering techniques in different media (Pencil, Water Color, Pen and Ink) Building elevations with trees, people vehicles and clouds Building plans with furniture layout/sectional plan with furniture elevations Site plan/ Landscape	1 1 1	10	
12.	Delineate a set of simple residence with sciagraphy in different media	1	18	
13.	Delineate a perspective view (angular exterior view) of a set of simple residence in any medium	1		
14.	Delineate an interior perspective view (parallel perspective) of living space of a simple building in any medium including flooring, furnishing and fixtures	1		
Total		30	72	80
Internal Assessment (Attendance+Class Performance+Assessment)		-	-	20
Grand Total		-	-	100

Internal evaluation:

Assignment: Each student must submit the assignment individually. The stipulated time for submission of the assignment will be seriously taken.

Attendance in class: Students should regularly attend and participate in class discussion. Eighty percent class attendance is mandatory for the students to enable them to appear in the end semester examination. Below 80% attendance in the class will signify NOT QUALIFIED (NQ) to attend the end semester examination.

Discussion and participation: Students will be evaluated on the basis of their active participation in the classroom discussions.

References:

1. D. K. Ching, "Architectural Graphics
2. Michael E. Doyle, "Color and Drawing"
3. Robert W. Gill, "Rendering with Pen and Ink"
4. Rovert W. Gill, "Rendering"
5. O. Halse, "Rendering Techniques"
6. Mike W. Lin, Asla, "Drawing and Designing with Confidence"

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(Course of Study 2075)

Course Title: Introduction to Architecture	Credit: 3
Course Code : AR 114	Number of lecture/week: 3
Nature of the Course: Theory	Tutorial/week: 0
Year/Semester: I/I	Total hours: 45

Course Introduction:

Architecture constitutes a central theme in the history of society, culture, and human sensitivity. Built spaces define who we are, where we are, and who we want to be. This introductory course surveys the history of architecture from beginning to the present. Student will come away from this course with an understanding of the vocabulary of architectural field and should become a prelude to learning the History of Architecture and culture of civilizations.

Course Objectives:

- To give an insight to the students about understanding and analyzing architecture as a curious craft and its timeless ways of existence.
- To lay a foundation for a general understanding of architecture through analyzing the fundamental terms spanning the education, society, the science, and ecology.
- To understand the profession of architecture and its relation with allied professions.
- To understand the role of architecture in Nepal and the career opportunities scene.

Course Outline:

Units	Contents	Duration (Time allocated)
1	Origin of architecture, etymology of the word "Architecture", understanding the architecture as identification of place.	3
2	Brief surveys of the field of architecture- from beginning to present times.	3
3	Architecture education and its feature under Nepalese Universities.	3
4	Links between architecture, built environment and society.	5
5	Social, cultural and religious context of architecture.	5
6	Role of construction technology and material an architecture.	5
7	Hierarchical context of site, city and ecology an architecture.	3
8	The architecture profession and its interactive relationship with allied professionals such as sociologists, geographers, planners, engineers, landscape architects etc.	5
9	The profession of architecture of Nepal- its practice both public and private career opportunities.	3
10	Role and responsibilities among architect, client and builder.	5
11	Planning and building controls in force and regulations (Bye-laws and Codes).	5
Total		45

Evaluation scheme:

The questions will cover all the chapters in the syllabus. The evaluation scheme will be as possible as indicated in the table below:

Chapters	Hours	Marks distribution* (Tentative)
1,2 & 3	9	12
4,5 & 6	15	20
7	3	5
8	5	6
9	3	5
10	5	6
11	5	6
Total	45	60

* There may be minor variation in marks distribution

References:

- Gympel J (2013). The Story of Architecture: From Antiquity to the Present. H.F. Ullmann Publishing GmbH.
- Rudofsky B (1964). Architecture without Architect. Doubleday & Company, Inc., Garden City, New York.
- Conway H and Roenisch R (2005). Understanding Architecture: An introduction to architecture and architectural history. Routledge Taylor & Francis Group.
- Snder JC and Catanese (1979). Introduction to Architecture. McGraw-Hill, New York.
- Unwin S (2014). Analyzing Architecture. Routledge Taylor & Francis Group.

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Course of Study 2075

Course Title: Building Materials I	Credit: 3
Course Code.:AR 115	Number of lecture/week:3
Nature of the Course: Theory	Tutorial/week: 2
Year/Semester: I/I	Total hours: 45

5. Course Introduction:

This course introduces various types of building materials and its importance in architecture and engineering.

6. Course Objectives:

- To familiarize with commonly used building materials enabling to select proper building materials, and have knowledge of different building materials.
- To develop understanding of building properties.
- To know quality and uses of materials and their testing methods to determine their qualities.

7. Specific Objectives and Contents:

Specific Objectives	Contents
This unit covers the general overview of Building materials	4. UNIT 1: Introduction to Building Materials available in Nepal (1 hrs)
In this unit, it covers the sources of Stone.	5. UNIT 2: General Knowledge of types of rocks according to geological formation;(10 hrs) 2.1 Igneous Rock 2.2 Sedimentary Rock 2.3 Metamorphic Rock 2.4 Types of rocks by physical properties 2.5 Types of rocks by hardness 2.6 Quarrying of Stone 2.6.1 Types of quarrying 2.6.1.1 Quarry by hand 2.6.1.2 Quarry by Machine 2.6.1.3 Quarry by blasts 2.7 Seasoning and Preservation of Stone 2.8 Dressing of Stone 2.8.1 Hammer Dressing 2.8.2 Chisel drafted margin 2.8.3 Tooling and Axing 2.8.4 Fine Tooling 2.8.5 Rubbed and Polished Work 2.9 Stone Masonry 2.9.1 Types 2.9.2 General Principles to be observed in the construction 2.9.3 Comparison between Brick and Stone Masonry

	2.10 Selection and uses of stone for engineering and Architectural works: Granite, Sandstone, Limestone, Marble and Slate
This unit deals with the use of bricks, its constituents of brick sizes of brick, its characteristics of good brick and sizes and testing of Brick	3 UNIT 3: Brick (6 hrs) 3.1 Introduction, Constituents of brick, sizes of brick 3.1.1 Brick Making Process 3.1.2 Hand making Process 3.1.3 Machine making Process 3.2 Characteristics of Good Bricks and Sizes; A Class Brick, B Class Brick, C Class Brick 3.3 Testing of Brick 3.3.1 Water absorption test 3.3.2 Sandiness test 3.3.3 Compressor Strength test 3.3.4 Tensile Strength
In this unit, Lime and its uses	4 UNIT 4: Lime (2 hrs) 4.1 Introduction, Constituents of lime, 4.2 Classification of lime 4.3 Comparison between different types of lime 4.4 Uses-Lime Plaster, Lime Punning, Lime Painting
This unit deals with Cement, its properties, manufacturing process, testing of cement, storage of cement included in this unit.	5 UNIT 5: Cement (12 hrs) 5.1 Introduction, constituents of Cement 5.2 Properties 5.3 Manufacturing process of cement; Mixing, Burning, Grinding 5.3.1 Dry Process (Flow Chart diagram) 5.3.2 Wet Process 5.4 Testing of Cement 5.4.1 Fineness 5.4.2 Soundness 5.4.3 Tensile Strength 5.4.4 Compressive Strength 5.4.5 Test for Chemical Composition 5.4.6 Rough and ready method of examining Cement 5.5 Properties of cement mortar, types and uses, Cement Plaster and Cement Paints 5.6 Storage of Cement
This unit deals with Sand, its classification, characteristics and its substitutes	6 Unit 6: Sand (3hrs) 6.1 Introduction as building material 6.2 Classification and uses of sand 6.3 Bulking of Sand 6.4 Characteristics of good sand 6.5 Substitutes of sand
This unit deals with Cement Concrete	7 Unit 7 : Cement Concrete (10 hrs) 7.1 Introduction and constituents and mixture ratios 7.2 Aggregates 7.2.1 Fine aggregates-Sand, Stone Screening 7.2.2 Coarse aggregates derived from rock, bricks, slag and pebbles. 7.3 Water-Quality, Water Cement Ratio 7.4 Workability of concrete, Slump test 7.5 Concrete Mixing- Hand Mixing, Machine Mixing

	and Batch Mixing 7.6 Transportation and Placing of Concrete 7.7 Compacting of Concrete 7.8 Concrete Admixtures and Water Profing
This unit deals with Mud and its products	8 Mud and Mud Products(2 hrs) 8.1 Mud , Different types of Mud
This unit deals with Field works	9 Field Works(9 hrs) 9.1 Visit to ongoing project site 9.2 Market survey of different building materials
This units deals with Laboratory Exercises	10 Laboratory Exercises (5hrs) 10.1 Compressive strength of Concrete Cubes 10.2 Water absorption value of bricks 10.3 Grain size distribution of sand by Sieve analysis 10.4 Grain size distribution of Course aggregate by sieve analysis 10.5 Properties of cement.specific gravity,setting time

Evaluation System

Undergraduate Programs			
External Evaluation	Marks	Internal Evaluation	Marks
End semester examination	60	Individual Assignments, Attendance, Class Progress, Project Work, Assessments	40

External evaluation

End semester examination

It is a written examination at the end of the semester. The questions will be asked covering all the units of the course. Each student must secure at least 45% marks in internal evaluation in order to appear in the end semester examination. Failed student will not be eligible to appear in the end semester examinations.

Internal evaluation:

Assignment: Each student must submit the assignment individually. The stipulated time for submission of the assignment will be seriously taken.

Attendance in class: Students should regularly attend and participate in class discussion. Eighty percent class attendance is mandatory for the students to enable them to appear in the end semester examination. Below 80% attendance in the class will signify NOT QUALIFIED (NQ) to attend the end semester examination.

Discussion and participation: Students will be evaluated on the basis of their active participation in the classroom discussions.

Instructional Techniques: All topics are discussed with emphasis on real-world application. List of instructional techniques is as follows:

- Lecture and Discussion
- Group work and Individual work
- Assignments
- Presentation by Students
- Guest Lecture

Students are advised to attend all the classes and complete all the assignments within the specified time period. If a student does not attend the class(es), it is his/her sole responsibility to cover the topic(s) taught during that period.

Text books:

1. Singh, Gurucharan, Building Materials, Standing Publication; New Delhi, 1996

References:

7. Kumar, Sushil, “ Building Materials”
8. D.N. Ghose, Materials of Construction, Tata Mc Graw Hill Publication
9. S.K. Duggal, Building Materials

Far Western University
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Bachelor's Degree in Architecture
Course of Study 2075

Course Title: Free Hand Sketching I	Credit: 3
Course Code.: AR 116	Number of lecture/week:
Nature of the Course: Practical	Practical/week: 4
Year/Semester: I/I	Total hours: 45

8. Course Introduction:

Free Hand Sketching I introduces various techniques of free hand sketching through the use of pencil, colour, pen, and brush. It also introduces about free hand sketching of architectural elements and their compositions.

9. Course Objectives:

- To introduce fundamentals of Free Hand Sketching techniques, and impart knowledge and skill of free hand sketching with free hand perspectives, basic exercise in colour, pencil, pen and brushes.
- To introduce Free Hand Sketching as means of visual communication.

10. Specific Objectives and Specific Contents:

Specific Objectives	Specific Contents
In this Unit: Course introduction and its scopes and importances are discussed.	6. UNIT 1: Introduction (2 hrs) 6.1. History of Free Hand Sketching with reference to Architecture. 6.2. Relevance of Free Hand Sketching in architectural design 6.3. General Knowledge of Sketching materials such as pencil, paper, colour, brush, pen etc.
In this Unit: Basic Principles of Free Hand Sketching and their applications in architectural graphical presentation are discussed.	7. UNIT 2: Basic Principle of Free Hand Sketching (4 hrs) 7.1. Formal, Informal balance, Rhythm, Harmony, Contrast, Gradation 7.2. Shade and Shadow
In this unit, different techniques of free hand sketching with different materials and instruments are conducted and their relevance in architectural graphical	8. UNIT 3: Practices in Free Hand Sketching (8 hrs) 7.1. Line exercise in pencil, colour, and ink (straight, curve, zigzag etc) 7.2. Tone exercise with pencil, colour and ink (tint and tones)

presentation are discussed.	7.3. Texture exercise in pencil, colour and ink. 7.4. Pencil, pen, and colour exercise
This unit deals with the appropriate uses of pencil, ink and colour in the sketching of natural and man made objects both simple and complex objects	8. UNIT 4: Free Hand Skecthing of Still life in Studio Condition (10 hrs) 8.1. Free hand skecthing of still life in studio with simple objects in pencil,ink and colour 4.1.1 Nature related objects: Flower and Fruits 4.1.2 Man made objects:Cube/sphere/pyramid/cuboids 8.2. Free Hand Skecthing of Still Life in Studio with complex objects in pencil, ink and colour 4.2.1 Natre related objects: Combination of flower and fruits 4.2.2 Man made objects: Combination of solid objects (Cube/sphere/pyramid/cuboids)
This unit deals with use of free hand skecting in pencil, ink and colour with the example of tress, door and windows.	9. UNIT 5: Free Hand Skecting of Tree, Door and Window (Classical) in Pencil,Ink and Colour (4 hrs)
This unit deals with fast use of pencil in free hand skecthing of different objects in indoor and outdoor condition.	10. UNIT 6: Free Hand Fast Skecthing with Pencil (10 hrs) 10.1. Different objects such as tree, human figures, vehicles, perspective views,cloud, furniture etc in both indoor and outdoor condition
This unit deals with application of different mediums such as pencil, colour and pen in skecthing of different objects in indoor and outdoor condition	11. Unit 7: Application of different mediums such as pencil, colour and pen in interior and exterior (6 hrs)

Internal evaluation:

Assignment: Each student must submit the assignment individually. The stipulated time for submission of the assignment will be seriously taken.

Attendance in class: Students should regularly attend and participate in class discussion. Eighty percent class attendance is mandatory for the students to enable them to appear in the end semester examination. Below 80% attendance in the class will signify NOT QUALIFIED (NQ) to attend the end semester examination.

Discussion and participation: Students will be evaluated on the basis of their active participation in the classroom discussions.

Students are advised to attend all the classes and complete all the assignments within the specified time period. If a student does not attend the class(es), it is his/her sole responsibility to cover the topic(s) taught during that period.

References:

- 1.0 Bernard Durstan: "Starting to Paint Still Life"
- 2.0 Leon Franks:"How to do Still Life"

3.0 Prof. S.K. Luthra: "Applied Art Handbook"

4.0 Herbert Parrish: "Flower and Still Life"

5.0 Ray Smith: "The Artists Hand Book"

**Far Western University
Faculty of Engineering
Bachelor's Degree in Architecture
Course of Study 2075**

Course Title: Communication Skills (English)	Credit: 3
Course Code: SH 117	Number of lecture/week: 3
Nature of the Course: Theory	Tutorial/week: 1
Year/Semester: I/I	Total hours: 45

1. Course Introduction

This course is designed for the students of Architectural Engineering with the objective of developing all four skills of communication useful for their professional career.

2. Course Objectives

This course has the following objectives: After going through the course the students will be able to

- a. Comprehend the authentic reading materials
- b. Make students critical readers
- c. Help students' critical readers
- d. Help students to develop strategies of communication in speaking and writing.
- e. Develop grammatical competence to communicate their ideas and messages in English
- f. Write notice, agenda and minutes
- g. Write proposals
- h. Write reports
- i. Write research articles with appropriate references
- j. Develop Presentation and orator skills

3. Contents

Unit One: Listening (8 hours)

- 1.1. Listening for gist – skimming
- 1.2. Listening for specific information- scanning
- 1.3. Listening for detail understanding
- 1.4. Making inferences and forming opinions from listening
- 1.5. Summarizing what was listened
- 1.6. Listening for comprehension

Unit 2: Reading (8 hours)

- 2.1. reading for main ideas.

- 2.2. reading for details
- 2.3. use graphic organizer to understand reasons
- 2.4. use compare and contrast organization to examine similarities and differences between two subjects
- 2.5. identify counter arguments and refutations to better evaluate ideas in a text
- 2.6. reading for central theme

Unit Three: Speaking (9 hours)

- 3.1. Use repetition and signal words
- 3.2. Take notes to prepare for a presentation
- 3.3. Giving advice
- 3.4. Ask open ended and follow up questions
- 3.5. Use of discourse markers and fillers in conversation
- 3.6. Use persuasive language to encourage positives attitudes
- 3.7. Interview others to discover the information
- 3.8. Talk about real and unreal conditions
- 3.9 Take notes to prepare for a presentation or group discussion

Unit Four: Grammar (10 hours)

- 4.1. Tenses
- 4.2. Modals
- 4.3. Determiners pronouns and noun phrases
- 4.4. Prepositions, adjectives and adverbs
- 4.5. Verb structures
- 4.6. Word formation
- 4.7. Conditionals, clauses, questions, indirect speech
- 4.8. Sentences and varieties of English

Unit Five: Writing (10 hours)

- 5.1. Analyzing and writing paragraphs
- 5.2. Writing Proposal: parts of proposals
- 5.3. Summary writing
- 5.4. Letter writing (formal)
- 5.5. Responding to the texts in writing
- 5.6. Writing Notices with agenda and minutes
- 5.7. Writing reports: formal, informal and field reports (parts and components of the reports)

Unit Six: Writing Research Articles (3 hours)

- 6.1. Introductions
- 6.2 Procedures

4. Methodology and Techniques

- Class presentation
- Discussion

- Group work/pair work
- Project work
- Self-study

5. Evaluation Scheme

- Internal 40%
- External 60%
- The internal examination will be conducted based on the following criteria:

a) Attendance	10%
b) Speaking test (unit 3)	30%
c) Assignment	10%
d) Paper presentation	10%
e) Mid-term exam	40%

- External Evaluation (Final Examination) 60%

Office of the Controller of Examination will conduct semester/ final examination at the end of each semester. The distribution of points for the types of questions to be asked in final examination is as follows:

1) Objective type question (Multiple choice items 20 x 1)	20 points
2) Short answer questions (6 questions x 8 points)	48 points
3) <u>Long answer questions (2 questions x 16 points)</u>	<u>32 points</u>
<u>Total</u>	<u>100 points</u>

Prescribed Books

1. Daise, D., Norloff, C. and Carne, P. (2011) .*Q: Skills for Success (Reading and Writing) – 4*. New York. Oxford University Press. (Unit I, II and VI)
2. Freire, R. and Jones, T. (2011). *Q: Skills for Success (Listening and Speaking) – 4*. New York. Oxford University Press.
3. Kumar Ranjit. *Research Methodology*: Pearson Education
4. Lloyd, M. and Day, J. (2011). *Active Grammar, Level 3*. Cambridge. Cambridge University Press. (*Unit IV*)