SYLLABUS

FOR

Bachelor of Vocational Degree, Advance Diploma and Diploma

(Interior Designing)

Under

UGC's National Skill Qualification Framework (NSQF)

At

PDEA's
Prof. Ramkrishna More Arts, Commerce College
Akurdi, Pune (Maharashtra)

Affiliated

To

Savitribai Phule University of Pune.

YEAR 2018-2019

Proposed subjects / papers in the Skill component and General Education component in each of the three years.

COURSE STRUCTURE

Year 1 (Diploma)			
Semester I (Credits 30)			
S. No.	**Subject Code**	**Subject Name**	**Credits**
1	ID 111	Basic Design Theory - I	4
2	ID 112	Construction Tools & Materials - I	4
3	ID 113	History of Interior Design - I	4
4	ID 114	Business Communication Skills	2
5	ID 115	Interior Design Studio-I	4
6	ID 116	Construction Studio-I	4
7	ID 117	Interior Design Graphics I	4
8	ID 118	Interior Services I	4

Semester II (Credits 30)			
S. No.	**Subject Code**	**Subject Name**	**Credits**
1	ID 121	Basic Design Theory II	4
2	ID 122	Construction Tools & Materials II	4
3	ID 123	History of Interior Design II	4
4	ID 124	Computer Skills I	2
5	ID 125	Interior Design Studio - II	4
6	ID 126	Construction Studio - II	4
7	ID 127	Interior Design Graphics - II	4
8	ID 128	Interior Services - II	4

Year 2 (Advance Diploma)			
Semester III (Credits 30)			
Sr No	Code	Name of Subject	Total Credit
1	ID-231	Environmental Studies I	4
2	ID-232	Tools & Materials III	4
3	ID-233	Humanities & Management I	4
4	ID-234	Computer Skills II	2
5	ID-235	Interior Design Studio III	4
6	ID-236	Construction Studio III	4
7	ID-237	Interior Design Graphics III	4
8	ID-238	Interior Services - II	4

Semester IV (Credits 30)

Sr No	Code	Name of Subject	Total Credit
1	ID-241	Landscape I	4
2	ID-242	Tools & Materials IV	4
3	ID-243	Humanities & Management II	4
4	ID-244	Elective	2
5	ID-245	Interior Design Studio IV	4
6	ID-246	Construction Studio IV	4
7	ID-247	Interior Design Graphics IV	4
8	ID-248	Interior Services IV	4

Year 3 (Degree)			
Semester V (Credits 30)			
Sr No	Code	Name of Subject	Total Credit
1	ID-351	Elective	4
2	ID-352	Quantity and Estimation	4
3	ID-353	Professional Practice	4
4	ID-354	Case/Literature study	2
5	ID-355	Interior Design Studio	4
6	ID-356	Working Drawing	4
7	ID-357	Interior Design Dissertation	4
8	ID-358	Advance Services 5	4

Semester VI (Credits 30)			
Sr No	Code	Name of Subject	Total Credit
1	ID-361	Internship (16-18 weeks)	30

GUIDELINES FOR INTRODUCTION OF BACHELOR OF VOCATION (B.VOC.) PROGRAMME IN UNIVERSITIES AND COLLEGES UNDER THE NATIONAL SKILLS QUALIFCATIONS FRAMEWORK (NSQF)

1. Introduction

It has been a long felt necessity to align higher education with the emerging needs of the economy so as to ensure that the graduates of higher education system have adequate knowledge and skills for employment and entrepreneurship. The higher education system has to incorporate the requirements of various industries in its curriculum, in an innovative and flexible manner while developing a holistic and well groomed graduate.

Ministry of HRD, Government of India had issued an Executive Order in September 2011 for National Vocational Education Qualification Framework (NVEQF). Subsequently, Ministry of Finance, in pursuance of the decision of Cabinet Committee on Skill Development in its meeting held on 19th December, 2013, has issued a notification for National Skills Qualifications Framework (NSQF) which supersedes NVEQF.

Under the National Skills Development Corporation, many Sector Skill Councils representing respective industries have/are being established. One of the mandates of Sector Skill Councils is to develop National Occupational Standards (NOSs) for various job roles in their respective industries. It is important to embed the competencies required for specific job roles in the higher education system for creating employable graduates.

The University Grants Commission (UGC) has launched a scheme on skills development based higher education as part of college/university education, leading to Bachelor of Vocation (B.Voc.) Degree with multiple exits such as Diploma/Advanced Diploma under the NSQF. The B.Voc. programme is focused on universities and colleges providing undergraduate studies which would also incorporate specific job roles and their NOSs alongwith broad based general education. This would enable the graduates completing B.Voc. to make a meaningful participation in accelerating India's economy by gaining appropriate employment, becoming entrepreneurs and creating appropriate knowledge.

2. Objectives

2.1 To provide judicious mix of skills relating to a profession and appropriate content of General Education.

2.2 To ensure that the students have adequate knowledge and skills, so that they are work ready at each exit point of the programme.

2.3 To provide flexibility to the students by means of pre-defined entry and multiple exit points.

2.4 To integrate NSQF within the undergraduate level of higher education in order to enhance employability of the graduates and meet industry requirements. Such graduates apart from meeting the needs of local and national industry are also expected to be equipped to become part of the global workforce.

2.5 To provide vertical mobility to students coming out of 10+2 with vocational subjects.

3. Levels of Awards

The certification levels will lead to Diploma/Advanced Diploma/B. Voc. Degree in one or more vocational areas and will be offered under the aegis of the University.

Award	**Duration**	**Corresponding NSQF level**
Diploma	1 Year	5
Advanced Diploma	2 Years	6
B.Voc. Degree	3 Years	7

4. Eligibility /Target

All universities and colleges included under Sections 2(f) and 12(B) of the UGC Act, 1956 and receiving plan grant from the UGC are eligible for UGC financial assistance under the scheme.

5. Eligibility for admission in B.Voc.

The eligibility condition for admission to B.Voc.programme shall be 10+2 or equivalent, in any stream.

6. Curriculum

The curriculum in each of the years of the programme would be a suitable mix of general education and skill development components. Curriculum details should be worked before introduction of the courses.

7. Guidelines for credit calculations

7.1 This section contains credit framework guidelines. The university/college should use these guidelines or adapt them.

7.2 The following formula should be used for conversion of time into credit hours.

a) One Credit would mean equivalent of 15 periods of 60 minutes each, for theory, workshops/labs and tutorials;
b) For internship/field work, the credit weightage for equivalent hours shall be 50% of that for lectures/workshops;
c) For self-learning, based on e-content or otherwise, the credit weightage for equivalent hours of study should be 50% or less of that for lectures/workshops.

7.3 The suggested credits for each of the years are as follows:

NSQF Level	**Skill Component Credits**	**General Education Credits**	**Normal calendar duration**	**Exit Points / Awards**
Year 3	36	24	Six Semesters	B.Voc.
Year 2	36	24	Four semesters	Advanced Diploma
Year 1	36	24	Two semesters	Diploma
TOTAL	**108**	**72**		

8. Examination and Assessment

8.1. The assessment for the general education component would be done by the university as per their prevailing standards and procedures.

8.2. The assessment for the skill development components would necessarily focus on practical demonstrations of the skills acquired.

The university has to necessarily establish a credit based assessment and evaluation system for the B.Voc. programme.

Syllabus
For
B.Voc. (Interior Designing)
Three Year degree Program

Semester III

ID 231. Environmental Studies-1		**04credits 60 Hours**
OBJECTIVES To introduce the concept and principles of environment and its impact on interior spaces, including climatic study and parameters of human comfort. Learner should be exposed to use of preliminary analysis tools used during the early planning stages of an interior project.		
1	**Unit I** **Climatic factors** 1.1 Understanding climate / weather and study of 6 climatic zones and its effect on the structure. 1.2 Climatic factors which affect thermal comfort in humans, along with its interface with Interiors.	**15 Hrs**
2	**Unit II** **Introduction to sustainable material** 2.1 Importance of materials in the Interiors. 2.2 Properties of materials and heat transfer. 2.3 Evaluation of materials on environmental aspects.	**15 Hrs**
3	**Unit III** **Importance of day lighting, IAQ its application and ventilations** 3.1 Lighting design and energy usage, conservation of energy.	**15 Hrs**
4	**Unit IV** 4.1 Understanding of LEED, GRIHA. Leadership in energy and environmental design. 4.2 Water and its conservation.	**15 Hrs**

ASSIGNMENTS

1	Continuous assessment of sessional work may consist of project work, case studies, research, etc.
2	Journals, reports, power point presentations etc.
3	Market research and power point presentation on sustainable material are available in market.

REFERENCE:

1. Rai G.D (1996), Solar Energy Utilization, Khanna Publichsers, Delhi.
2. Riggs, J.R. (1992) Materials and components of Interior Design, Regents Hall, New

Jersey.
3. Faulkner, R., and Faulkner. S, (1987) Inside Today's Home, Rinehart publishing House, Newyork.
4. Roa, M.P. (1998), Interior design, principles and practice, standard publishers, Delhi.
5. Despande, R.S, (1974) Build your own home, United book corporation, Poona.

ID 232. Construction Tools & Materials III 04 credits 60 Hours

OBJECTIVES

Introduction of advanced materials and products that are used in Interior and Architecture in the current day and age. Knowledge of these materials and their implementation will help in the enhancement and upliftment of projects. It will also cater to the specific use of products keeping in mind the final utilization and precautionary measures that need to be consciously considered while designing.

1	**Unit I** **Water proofing** 1.1 Materials used for water-proofing. 1.2 Techniques used for water-proofing.	**15Hrs**
2	**Unit II** **Fire- Protection** 2.1 Fire retardant materials and their applications. 2.2 Fire – resisting properties of materials.	**15Hrs**
3	**Unit III** **Thermal insulation** 3.1 Thermal insulating materials and their applications	**15Hrs**
4	**Unit IV** **Bamboo as a material** 4.1 Introduction to bamboo and its application to interior design. 4.2 Why and how to use bamboo in interior design. 4.3 Innovation in bamboo designs.	**15Hrs**

ASSIGNMENTS

1	Major part of this semester will focus on Market Research and Presentations by students.
2	Continuous assessment of sessional work may consist of project work, sketch books, power point presentations, market surveys, research work etc.
3	Market research and seminar on various waterproofing materials, Fire retardant materials and thermal insulating materials are available in market.

REFERENCE:

1. Bindra, S.P. and Arora, S.P. Building Construction: Planning Techniques and Methods of Construction, 19th ed. Dhanpat Rai Pub., New Delhi, 2000.
2. Moxley, R. Mitchell‟ s Elementary Building Construction, Technical Press Ltd.
3. Rangwala, S.C. Building Construction 22nd ed. Charota Pub. House Anand, 2004.
4. Sushil Kumar. T.B. of Building Construction 19th ed. Standard Pub. Delhi, 2003.
5. Chowdary, K.P. Engineering Materials used in India, 7th ed. Oxford and IBH, New Delhi,1990.
6. Rangwala, S.C. Building Construction: Materials and types of Construction, 3rd ed. John Wiley and Sons, Inc., New York, 1963.
7. Francis D. Ching, Building Construction Illustrated, Wiley publishers, 2008.

ID 233. Humanities & Management 1 — 04 credits 60 Hours

OBJECTIVES

The study of Humanities and Management intends to provide general knowledge and intellectual skills based on humanistic discipline.

1	**Unit I** **Basics of Management:** 1.1 Modern scientific management(Contribution by Fayol , F.W. Taylor , Mayo), Management Functions, Management Styles, SWOT Analysis in construction.	**15 Hrs**
2	**Unit I** **Project Management:** 2.1 Basic forms of organization with emphasis on Project and matrix structures; project life cycle, planning for achieving time, cost, quality, project feasibility reports based on socio-techno-economic environmental impact analysis, project clearance procedures and necessary documentation for major works like dams, multistoried structures, ports, tunnels, Qualities, role and responsibilities of project manager, Role of Project Management Consultants, Enterprise Resource Planning (ERP). 2.2 Types of project management.	**15 Hrs**
3	**Unit III** **Project Scheduling:** 3.1 Construction Scheduling, Work break down structure, activity cost and time estimation in CPM, PERT, RPM (Repetitive Project Modeling) techniques. LOB technique, Mass haul diagrams. Precedence Network Analysis, software in Construction scheduling (MSP, primavera, Construction manager). 3.2 Project Controlling : Monitoring and Control, Crashing, Resource Leveling, Updating.	**15 Hrs**
3	**Unit III** **Site management** 3.1 Site management for professional Interior designer	**15 Hrs**

REFERENCES

1. Project Management – Ahuja H.N. – John Wiely, New York.
2. Project Management-Planning and Control---Rory Burkey 4th ed.—Wiley,India.
3. Construction Project Management Planning, Scheduling and Controlling-Chitakara- Tata McGraw Hill, New Delhi
4. Construction Project planning & Scheduling By Charles Patrick, Pearson, 2012
5. Construction Management – O'Brien.

ID 234. Computer 02 credits 30 Hours

OBJECTIVES

To introduce basic understanding of other software like Architectural Desktop, Revit, Archicad etc. including 3D modeling (creating shades and shadows, attaching materials and rendering), CAD customization for different project types. Learner will be required to apply all the above skills learned during this semester on the design assignments prepared in the previous / current semester and present it for assessment.

1	**Unit I** **Introduction** 1.1 Introduce basic understanding of 3D - software like Autocad, sketchup etc including 3D modeling.	**5 Hrs**
2	**Unit II** **Introduction to 3D – sketchup** 2.1 Introduction to basic 3D sketchup.	**10 Hrs**
3	**Unit III** 3.1 **Drawing Commands :** line, circle, rectangle, arc, polygon. 3.2 **Manipulation Commands :** push/ pull, offset, rotate, move, follow me, scale. 3.3 **Applying Materials :** paint bucket (B). **Modifying an Existing Drawing**	**10 Hrs**
4	**Unit IV** **Formatting of drawings for taking prints and plots.**	**5 Hrs**

REFERENCES

1. AutoCAD Manual
2. IntelliCAD Manual
3. AutoCAD Bible Series by Ellen Finkelstein.
4. Sketchup keystroke shortcuts, https://pages.uoregon.edu>downloads
5. https://mastersketchup.com

ID 235. Interior Design Studio III 04 credits 60 Hours

OBJECTIVES

In this semester the learner is expected to apply advanced skills to planning of residential interior spaces with clear understanding and usage of contemporary materials, construction techniques and services required for the design project. The design exercise may include large multilevel luxury residence such as a Penthouse, Bungalow etc.

1	**Unit I** Large multilevel luxury residence such as a Penthouse, Bungalow etc. (Carpet Area between 200.00 to 300.00 sq.mts)	**20Hrs**
2	**Unit II** The design exercise may include medium fine-dining restaurant with partly open-air area with due importance to differently abled user(Universal design), for a realistic site. (Carpet Area not less than 150.00 sq.mts).	**20Hrs**
3	**Unit III** Design activity based small to medium sized commercial interior spaces such as branch office of Bank, with due importance to differently abled user.(Universal design).(Carpet Area not less than 150.00 sq.mts)	**20Hrs**

ASSIGNMENTS

1	Case study sheets/power point presentation on residence such as a Penthouse, Bungalow etc.
2	Sheets on Designing of a residence such as a Penthouse, Bungalow etc.
	Case study sheets/ power point presentation on restaurant.
3	Sheets on Designing of a restaurant.
4	Case study sheets/ power point presentation on commercial interior spaces such as branch office of Bank, Branch office of Multi National Corporation.
5	Sheets on Designing of office.

REFERENCE:

1. Karlen Mark, Space planning Basics, Van Nostrand Reinhold, New York, 1992.
2. Joseph D Chiara, Julius Panero, & Martin Zelnick, Time Saver standards for Interior Design & space planning, 2nd edition, Mc-Graw Hill professional, 2001.
3. Francis.D. Ching & Corky Bingelli, Interior Design Illustrared, 2nd edition, Wiley publishers, 2004.
4. Julius Panero & Martin Zelnick, Human Dimension & Interior Space : A source book of Design Reference standards, Watson – Guptill, 1979.
5. Karlen Mark, Kate Ruggeri & Peter Hahn, Space Planning Basics, Wiley publishers, 2003.

ID 236. Construction Studio III 04 credits 60 Hours

OBJECTIVES

To equip the learner with various structural systems, Floor system, Roofing systems and means of construction, assembly and joinery through detailed working drawings.

1	**Unit I** **Structural system** 1.1 Introduction to different structural systems for buildings:- Load bearing brick/stone masonry - its application in interior field. 1.2 RCC frame structure with column, beam, slab, cantilevers etc. – Its application in interior field. 1.3 Steel framed construction with different rolled sections - its application in interior field.	**15Hrs**
2	**Unit II** **Floor Systems** 2.1 Single floor in wood and steel with different floor finishes. 2.2 Introduction to double floor in steel.	**15Hrs**
3	**Unit III** **Stairs** 3.1 Single flight wooden staircase 3.1 Dog-legged RCC. 3.3 Metal staircase. 3.4 Principles of steel spiral stairs.	**15Hrs**
4	**Unit IV** **Roofing Systems** 4.1 Pitch roof/lean-to roof in steel with coated metal sheets, colour clay tiles and water proofing of flat terrace and toilet.	**15Hrs**

ASSIGNMENTS

1	Continuous assessment of sessional work should consist of drawing plates, journals, visit reports, sketch books, power point presentations etc.
2	Scaled drawing on structural systems
3	Scaled drawing on floor systems
4	Scaled drawing on single flight wooden staircase, dog- legged RCC staircase, Metal staircase.
5	Scaled drawing on Roofing systems.

REFERENCES

1. Bindra, S.P. and Arora, S.P. Building Construction: Planning Techniques and methods of Construction, 19th ed. Dhanpat Rai Pub., New Delhi, 2000.
2. Moxley, R. Mitchell‟ s Elementary Building Construction, Technical Press Ltd. Rangwala,

S.C. Building Construction 22nd ed. Charota Pub. House Anand, 2004.
3. Sushil Kumar. T.B. of Building Construction 19th ed. Standard Pub. Delhi, 2003.

ID 237. Interior Design Graphics-III 04credits 60 Hours

OBJECTIVES

Introduction to graphical language and representation techniques in form of technical drawings to enable learner to visualize the design in effective manner.

1	**Unit I** **Sketching** 1.1 Introduction to live Sketching.	**15 Hrs**
2	**Unit II** **Block models** 2.1 Block model making. 2.2 Model making of interior scheme.	**15 Hrs**
3	**Unit III** **Presentation drawings with different media.** 3.1 water color rendering. 3.2 color pencil rendering. 3.3 soft pastels rendering. 3.4 Inking. 3.5 Rendering in 2D & 3D	**15 Hrs**
4	**Unit IV** **Proficiency in 3D drawings**	**15 Hrs**

ASSIGNMENTS

1	Assignment will be in the form of sketches/ models covering all the topics mentioned above with suitable examples and supportive material.
2	Study model in various materials.
3	Presentation drawings with different media.
4.	Hand drawn sheets on 2D and 3D rendering.

REFERENCE:

1. Sketchbook by Milind Mulik
2. Colour Pencil by Rahul Deshpande & Gopal Nandurkar
3. Pencil Sketching - Vyaktichitre by Pundalik Vaze
4. Stephen Kliment, Architectural Sketching and Rendering: Techniques for Designers and Artists, Watson Guptill, 1984.
5. Ivo.D. Drpic, Sketching and Rendering of Interior Space, Watson- Guptill, 1988.
6. Maureen Mitton, Interior Design Visual Presentation: A Guide to graphics, models and presentation techniques, 3rd edition, wiley publishers, 2007

ID 238. Interior Services-III 04 credits 60 Hours

OBJECTIVES

To equip the learner with concept and principles of natural and mechanical ventilation and air-conditioning.

1	**Unit I** **Introduction to HVAC.** 1.1 HVAC Common Symbols- equipment symbols, duct work, heating piping, air-conditioning piping, refrigeration symbols.	**15 Hrs**
2	**Unit II** **Air conditioning** 2.1 Introduction to air conditioning systems methods of air conditioning, equipment and components used in air conditioning. 2.2 Selection criteria for air conditioning systems. 2.2 Ducting principles, layout schemes and placement of air conditioner outlets in central air conditioning systems.	**15 Hrs**
3	**Unit III** **Natural ventilation** 3.1 Introduction to Natural ventilation. 3.2 Principles of natural ventilation.	**15Hrs**
4	**Unit IV** **Mechanical ventilation** 4.1 Introduction to Mechanical ventilation. 4.2 Mechanical ventilation and its application.	**15Hrs**

ASSIGNMENTS

1	Hand drawn sheets on HVAC common symbols.
2	Hand drawn sheets on duct work, heating and air- conditioning piping.
3	Case study on office air conditioning system.
4	Scaled drawings on ducting works for office.
5	Seminar and power point presentation for various equipment and components used in Air conditioning system available in market.

REFERENCE

1. Norbert Lechner, Heating, cooling, Lighting Design, Library of congress Cataloguing in Publication Data.
2. Donald Hoff, Building services and equipments, Library of congress Cataloguing in Publication Data.

3. Ernest Tricomi, ABC of Air-conditioning, D. B. Taraporevala & sons.
4. Madan Mehta & James Johnson, Architectural Acoustics, Principles and Design.
5. Frank and John Walk, Noise and vibration, British Library Cataloguing in Publication Data.

Semester IV

ID 241. Landscape 1		**04credits 60 Hours**
OBJECTIVES Evolving further from course content of semester 1, the focus of study shall be based on application of the observational and creative skills to Design and planning process.		
1	**Unit I** **Landscape Architecture** 1.1 Introduction to Landscape Architecture	**12Hrs**
2	**Unit II** **Landscape Elements** 2.1 Studying elements of landscape design 2.2 Use of landscape elements in the design of outdoor spaces.	**12Hrs**
3	**Unit III** **Landscape Services** 3.1 Outdoor lighting 3.2 Introduction to water feature systems in designed landscape such swimming pools, fountains, etc.	**12Hrs**
4	**Unit IV** **Environment and Landscape** 4.1 Understanding of landscape elements with respect to microclimate and introduction to their quantification, Introduction to Climate types and zones in India.	**12Hrs**
5	**Unit V** **Materials used in landscapes** 5.1 Introduction to construction of hardscape and materials used in designed landscapes.	**12Hrs**

ASSIGNMENTS

1	Assignment will be in the form of notes/ assignments covering all the topics mentioned above with suitable examples, sketches and supportive material.
2	Study model in various materials
3	Journals, reports, case study, power point presentations etc.

REFERENCE:

1. Harris.C.W and Dine.N.T ; (1997) Time Saver Standards For Landscape Architecture, Mcgraw – Hill International Edition, Arch. Series
2. Storm.S and Kurt Nathan P.E;(1985) Site Engineering for Landscape Architects, AVI Publishing Company

3. Landphair H C; (1984) Landscape architecture construction. Elsevier
4. Christensen A J; (2005) Dictionary of Landscape Architecture And Construction .McGraw-Hill
5. Thomas J. R. Hughes;Site Engineering for LandscapeArchitects
6. Untermann, R. (1973) Grade Easy: an introductory course in the principles and practices of grading and drainage, Landscape Architecture Foundation.

ID 242. Construction Tools & Materials IV 04 credits 60 Hours

OBJECTIVES

To give an overview of the basic materials those are used in Interior and Architecture with reference to the material properties, feasibility, availability, durability and sustenance to climatic conditions.

1	**Unit I** **Fibres and fibre – reinforced products** 1.1 fibre – reinforced composites. 1.2 glass fibre reinforced gypsum 1.3 glass fibre reinforced cement / concrete. 1.4 glass fibre reinforced polymer. 1.5 steel fibre reinforced concrete 1.6 Polymer fibre reinforced concretes	**15Hrs**
2	**Unit II** **Plumbing** 2.1 Introduction to material used for plumbing	**15Hrs**
3	**Unit III** **Hard ware:** 3.1 Introduction to hard ware 3.2 Types and application	**15Hrs**
4	**Unit IV** **Furnishing Materials** 4.1 Introduction to home furnishing. 4.2 Fabric for interior textiles. 4.3 Soft Furnishings – curtains and draperies, loose covers, cushions, bedspread.	**15Hrs**

REFERENCES

1. Bindra, S.P. and Arora, S.P. Building Construction: Planning Techniques and Methods of Construction, 19th ed. Dhanpat Rai Pub., New Delhi, 2000.
2. Moxley, R. Mitchell‟ s Elementary Building Construction, Technical Press Ltd.
3. Rangwala, S.C. Building Construction 22nd ed. Charota Pub. House Anand, 2004.
4. Sushil Kumar. T.B. of Building Construction 19th ed. Standard Pub. Delhi, 2003.
5. Chowdary, K.P. Engineering Materials used in India, 7th ed. Oxford and IBH, New Delhi,1990.
6. Rangwala, S.C. Building Construction: Materials and types of Construction, 3rd ed. John Wiley and Sons, Inc., New York, 1963.
7. Francis D. Ching, Building Construction Illustrated, Wiley publishers, 2008.
8. Homescience.weebly.com

ID 243. Humanities & Management II 04 credits 60 Hours

OBJECTIVES

The student should be able to interpret the different market conditions from the practical point of view. Understand the meaning and importance of Humanities and Management in current globalized scenario.

1	**Unit I** **Marketing management** 1.1 Introduction to Marketing 1.2 Difference between Marketing & Selling 1.3 Concepts, Philosophies, Process & Functions	**15Hrs**
2	**Unit II** **Marketing Environment** 2.1 Internal Environment 2.2 External Environment	**15Hrs**
3	**Unit III** **Marketing Research** 3.1 Meaning 3.2 Procedure 3.3 Importance	**15Hrs**
4	**Unit IV** **Direct Marketing** 4.1 Introduction 4.2 Importance 4.3 Direct Marketing Mix	**15Hrs**

REFERENCES

1. Marketing management : planning, implementation and control, Ramaswamy V.S. and Namakumari S.
2. Fundamentals of marketing (Mc Graw Hill), Stanton William J.
3. Philip Kotler and Kevin Keller, Marketing Management, Pearson Education, 14th Edition (2012).
4. Ramaswamy, V.S. and Namakumari S., Marketing Management, Macmillan India, New Delhi (2010).

ID 244. Elective 02 credits 30 Hours

OBJECTIVES

The topic for elective courses shall be developed based on the current trends in the practice and availability of resource persons. However, few topics are suggested for the elective course.

1.	**Set Design** 1.1 Introduction to set design 1.2 Design process 1.3 Famous set designers 1.4 Materials 1.5 Models	**30Hrs**
2.	**Product Design** 2.1 Introduction to product design 2.2 Design process. 2.3 Famous product designers 2.4 Materials 2.5 Products 2.6 Awareness of the role of multiple functions in creating a new product (e.g., marketing, finance, industrial design, production).	**30Hrs**

REFERENCES

1. Product Design and Development, Book by Karl and Steven D. Eppinger.
2. Process: 50 Product Designs from Concept to Manufacture by Jennifer Hudson.
3. Sketching: Drawing Techniques for Product Designers by Koos Eissen and Roselien Steur.
4. Behind the Scenes Contemporary Set Design by Phoebe Adler.

ID 245. Interior Design Studio IV 04 credits 60 Hours

OBJECTIVES

In this semester the learner is expected to apply individual professional design acumen with enhanced skills of planning interior spaces related to commercial activity with use of eco-friendly materials and practices. Learner will provide due emphasis to the relationship of space to the contextual environment, achieving individual interpretations through client profiling, case studies and framing of requirements. The subject further explores application of advanced knowledge to materials used, construction techniques, modular furniture and services.

1	**Unit I** The assignment may include large commercial projects like corporate office of a Multi-National corporation.(The carpet area of the project should not be less than, 300.00 sq.mts)	**20Hrs**
2	**Unit II** Designing activity based small to medium sized Public spaces such as Art Gallery, Convention centers, Multiplexes etc.	**20Hrs**
3.	**Unit III** SPA/ Saloon/ Therapy Centre	**20Hrs**

ASSIGNMENTS

1	Literature and Case studies, visit reports, power point presentations.
2	Sketches, scaled drawings, study models in various materials
3	Design portfolio consisting of Project Brief, Theme Sheet, Measurement Plan/, Furniture Layout Plan/ Flooring Layout/ Reflected Ceiling Layout/ Basic Electrical Layout, Lighting plan, sections, elevations, Sectional Elevations.
4	Computer Aided Drawings are expected in this Semester.

REFERENCES

1. Karlen Mark, Space planning Basics, Van Nostrand Reinhold, New York, 1992.
2. Joseph D Chiara, Julius Panero, & Martin Zelnick, Time Saver standards for Interior Design & space planning, 2nd edition, Mc-Graw Hill professional, 2001.
3. Francis.D. Ching & Corky Bingelli, Interior Design Illustrared, 2nd edition, Wiley publishers, 2004.
4. Julius Panero & Martin Zelnick, Human Dimension & Interior Space : A source book of Design Reference standards, Watson – Guptill, 1979.
5. Karlen Mark, Kate Ruggeri & Peter Hahn, Space Planning Basics, Wiley publishers, 2003.

ID 246. Construction Studio IV 04credits 60 Hours

OBJECTIVES

To equip the learner with various systems of partitioning and paneling with appropriate means of construction, assembly and joinery through detailed working drawing and to make student aware of future trends in furniture design.

1	**Unit I** **Advance Partition Systems:** 1.1 Sliding folding partition in metal and glass. 1.2 Thermal/Acoustical partition and paneling in metal frame finished in various materials, movable partitions	**20Hrs**
2	**Unit II** **False Ceiling Concepts Systems:** 2.1 Gypsum board ceiling. 2.2 Modular ceiling systems in various materials.	**20Hrs**
3	**Unit III** **Raised flooring Systems :** 3.1 Raised floor for commercial spaces and I.T. rooms.	**20Hrs**

ASSIGNMENTS

1	Scaled drawing on Advance partition systems.
2	Scaled drawing on Gypsum ceiling and modular ceiling system.
3	Scaled drawing on Raised flooring system.
4	Case study and market survey for Modular ceiling system.
5	Power point presentation Market survey report on Modular ceiling system.

REFERENCES

1. Joseph De Chaira Jullius Panero Martin Zelnik, Time Saver Standard for Interior Design & Space Planning, Mcgraw Hill New York
2. John Pile, Interior Design, Harry N. Adry Publishers
3. Ahmed Kasu, Interior Design, TWAIN Pub. Bombay
4. Jullius Panero Martin Zelnik, Human Dimensions and Interior Spaces, Whitney Library New York
5. Phillis Sleen Allen, Beginning of Interior Environment, New York
6. Shirish Bapat, Basic Design of Anthropometry, Bela books Publishers
7. Shirish Bapat Living Area (Interior Space) Bela books Publishers
8. Francis D K Ching, Interior Design Illustrated, Van Norstrund, New Delhi
9. V. S. Parmar, Design Fundamental in 1st architecture, Somaiya Pub. Pvt. Ltd.
10. Francis D. Ching, Building Construction Illustrated, Wiley publishers,

ID 247. Interior Design Graphics IV 04credits 60 Hours

OBJECTIVES

The learner will be introduced to the basic principles of perspectives and sciography and its application to the field of interior design and drawings.

1	**Unit I** **Introduction Advanced Autocad** 1.1 Preparation of two dimensional interior drawings (including plans, elevations and sections), incorporating layers, line-weights, texts, scale, dimensioning, Autocad rendering.	**12 Hrs**
2	**Unit II** **Creating and organizing 2D drawings :** 2.1 Creating and organizing 2D drawings. All 2D dimensional drawing commands - All 2D dimensional edit commands - Inquiry commands - Settings for drawing - Concept of layers, line types - Dimension - Drawing and different scales - Introduction to block and its applications. - Text and fonts - Output of the drawing through printers or plotters (Print :Plot) - Different setting of drawing and mode etc. - Hatch, its patterns.	**12 Hrs**
3	**Unit III** **Modifying an Existing Drawing:** 3.1 Redraw and regen all. Regen auto. Undo Redo/loops. Trim. Move. Offset. Rotate, Array. Stretch. Divide, Chamfer. Erase and Break. Copy, multiple copy. Mirror.	**12 Hrs**
4	**Unit IV** **Dimensioning, Text and scale:** 4.1 Dimension type, style, units. Dimension utilities and variables. Dimensioning of different elements like (Horizontal, vertical, inclined, Arc. Circle, Radius, diameter), continuous dimensioning etc. Editing dimension text and updating (adding new text and editing existing text). Text style font types, height, width etc. Text commands like M-text and D-text.	**12 Hrs**

ASSIGNMENTS

1	Project Working drawings.
2	Drawing plan, elevation & section using scale.
3	Presentation of interior views (drafted) with CAD rendering.

REFERENCE:

1. AutoCAD Manual
2. IntelliCAD Manual
3. AutoCAD Bible Series by Ellen Finkelstein.

ID 248. Interior Services IV 04 credits 60 Hours

OBJECTIVES

In this semester the learner will be introduced to the principles of Acoustics, fire fighting system as applicable interior spaces

1	**Unit I** **Acoustics** 1.1 Criteria in Acoustical Design & Acoustical Characteristics 1.2 Problems in Acoustical Design 1.3 Classification of Sound, sound reflection, sound absorption, transmission and reverberation time. 1.4 Sound insulation of Wall and floor. 1.5 Filling and Surfacing Material.	**20Hrs**
2	**Unit II** **Fire protection** 2.1 Introduction 2.2 Fire Protection :Definition, structural fire precaution, rules, fire resistance, fire fighting, equipments and detection alarms, sprinklers etc. Fire resisting, retarding materials, means of escape, staircase lifts. 2.3 Fire – resisting properties of material 2.4 Fire resistant construction 2.5 Fire detecting and extinguishing system	**20Hrs**
3	**Unit IV** **Provisions of standards and energy codes related to interior electrical services.**	**20Hrs**

Assignments:

1	Case study of acoustical design of auditorium.
2	Seminar and power point presentation for various fire detecting and extinguishing system.
3	Market survey of acoustical / sound insulating materials.
4	Market survey of Fire retardant materials.
5	Market survey reports.

REFERENCE:

1. Building construction, Shushil kumar, standard publishers distributors.
2. Derek Clements-Croome, Derek J. Croome, Intelligent buildings: Design, Management and Operation, Thomas Telford Books, London, 2004.

3. Albert Ting-pat So, Wai Lok Chan, Intelligent Building Systems, Kluwer Academic Publishers, 1999.