CURRICULUM

Diploma in Interior Design

(Three-year program-semester system)

Council for Technical Education and Vocational Training
Curriculum Development and Equivalence Division
Sanothimi, Bhaktapur

Development: 2078 (2021)

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Introduction

Interior Design is one of the prominent and popular disciplines within Social Sciences. Many people in the developed countries, developing countries and under developed countries have emphasized the broader application of Interior Design because it has been helping the world for decorating and designing physical decorative elements.

This curriculum has been designed with the purpose of producing mid-level technical workforce equipped with knowledge and skills related to the field of designing to meet the demand of such workforce in the market to contribute in the national economic development of Nepal. The knowledge and skills incorporated in this curriculum will be helpful to the students so that they can deliver the decorating and designing services to the society.

The curriculum has been designed to foster knowledge and skills based on the job required to perform by the Interior Design Technicians (Interior Designers/architect) at different levels of public and private sectors for furniture and furnishing designing related works.

Curriculum Title

The title of this curriculur program is Diploma in Interior Design.

Program Aim

The program aims to prepare mid-level technical human resource equipped with knowledge and skills in interior design and allied subjects.

Program Objectives

This curriculum has following objectives:

- Prepare technicians who are capable of undertaking works in interior design.
- Produce mid-level competent technical workforce/human resources those provide designing works and services.
- Prepare technical workforce who will demonstrate proessional integrity and respect for the clients with high socio-cultural values;
- Supply the demand of required designers for the residencial/institutional/commercial buildings.
- Create wage and self-employment opportunities in related discipline.

Program Description

The Diploma in Interior Design program extends over three years. Each year is divided into two semesters. There are altogether six semesters within the period of three years. The foundational subjects of the diploma program like Nepali, English, mathematics applicable for the same area. The disciplinary subjects of Interior Design offered in this programme are included in all semesters including internship in last semester. The curriculum structure and the subject-wise content have been designed based on the academic and professional standards and norms. In brief, this curriculum will be instrumental to its implementers to produce competent and highly employable mid.-level technical workforces and foundation course for higher education in the field of Interior Design.

The contents of each subject prescribed in the curriculum are founded on "must know and must do" principle. The contents of the curriculum are comprehensively described in micro-level.

Program Duration

The total duration of this program is three academic years (six semesters). The program is based on semester system. Moreover, one semester consists of 19.5 academic weeks including evaluation period. Actual teaching learning hours will not be less than 15 weeks in each semester.

Target Location:
The target location is all over Nepal.

Group Size
The group size will be maximum of 48 (forty-eight) students in a section in theory class.

Target Group
The target group for this program will be all the interested youths.

Entry Qualification

- SLC or SEE pass with minimum D^+grade in Mathematics, Science and English or as per provisions mentioned in the admission guidelines of Office of the Controller of Examinations, CTEVT.
- Pre-diploma in Interior Design with minimum 67.00%.
- Pass entrance examination administered by CTEVT.

Medium of Instruction
The medium of instruction will be in English and/or Nepali.

Pattern of Attendance
Minimum of 90% attendance in each subject is required to appear in the respective final semester examination.

Teachers and Students Ratio
The ratio between teachers and students must be:

- Overall ratio of teacher and student must be 1:12 (at the institution level)
- 1:48 for theory and tutorial classes
- 1:12 for practical/demonstration

Qualification of Instructional Staff

- The academic and professional qualification of the program-coordinator and faculty subject teacher should be at least bachlor's degree in the respective subjects.
- The academic and professional qualification of the foundational subject related teacher should be at least master's degree in the respective subjects.
- The professional qualification of evaluators should be at least 5 years working experiences with a degree of Interior Design (minimum 3 years diploma) in respective subjects.

Instructional Media and Materials
The following instructional media and materials are suggested for the effective instruction and demonstration.

- ***Printed Media Materials*** (Assignment sheets, Hand-outs, Information sheets, Individual training packages, Procedure sheets, Performance check lists, Textbooks etc.).
- ***Non-projected Media Materials*** (Display chart, Flip chart, Poster, Writing board etc.).
- ***Projected Media Materials*** (Opaque projections, multimedia, Slides etc.).
- ***Computer-Based Instructional Materials*** (Computer-based training, TLM, Interactive video etc.)
- ***Web-Based Instructional Materials (Online learning)***
- ***Radio/Television/Telephone***

- ***Education-focused social media platform***

Teaching Learning Methodologies

The methods of teachings for this curricular program will be a combination of several approaches:

- **Theory:** Illustrated Lecture, Tutorial, Group Discussion, Assignment, Interaction,
- **Practical:** Demonstration, Observation, Guided practice, Self-practice Seminar, Group work, project work, Practical experiences, Fieldwork, Report writing, Term paper presentation, Case analysis, Tutoring, Role-playing, Heuristic and so on.
- **Internship:** Industrial practice.

Approach of Learning

There will be inductive, deductive and other learner-certered approaches of learning.

Examination and Marking Scheme

a. Internal assessment

- There will be a transparent/fair formative evaluation system for each subject both in theory and practical exposure.
- Each subject will have internal assessment at regular intervals and students will get the feedback about it.
- Weightage of theory and practical marks are mentioned in course structure.
- Formats for continuous assessment will be developed and applied by the evaluators for evaluating student's performance in the subjects related to the practical experience.

b. Final summative evaluation

- Weightage of theory and practical marks are mentioned in course structure.
- Students must pass in all subjects both in theory and practical for certification. If a student doesnot qualify in any subject for final evaluation, s/he will appear in the re-examination administered by CTEVT.
- Students will be allowed to appear in the final examination only after completing the internal assessment requirements.

c. Requirement for final practical examination

- Instructors of respective subject must evaluate final practical examinations.
- One evaluator in one sitting can evaluate not more than 24 students.
- Practical examination should be administered in actual situation on relevant subject with the provision of at least one internal evaluator from the concerned or affiliating institute led by external evaluator nominated by CTEVT.
- Provision of re-examination will be as per CTEVTexamination guidelines.

d. Final practicum evaluation will be based on:

- Institutional practicum attendance - 10%
- Logbook/Portfolio/Practicum diary maintain - 10%
- Spot performance (assigned task/practicum performance/identification/arrangement preparation/measurement) - 40%
- Viva-voce:
  - Internal examiner - 20%
  - External examiner - 20%

e. Pass marks:

- The students must secure minimum 40% marks in theory and 50% marks in practical. Moreover, the students must secure minimum pass marks in the internal

assessment and in the final examination of each subject to pass the respective subject.

Provision of Back Paper

There will be the provision of back paper but a student must pass all the subjects of all semesters within six years from the enrollment date; however, there should be provision of chance exam for final semester students as per CTEVTexamination guidelines.

Disciplinary and Ethical Requirements

- Intoxication, insubordination or rudeness to peers will result in immediate suspension followed by the review of the disciplinary review committee of the institute/school.
- Dishonesty in academic or practical activities will result in immediate suspension followed by administrative review, with possible expulsion.
- Illicit drug use, bearing arms in institute/school, threats or assaults to peers, faculty or staff will result in immediate suspension, followed by administrative review with possible expulsion.

Grading System

The grading system will be as follows:

Grading	**Overall marks**
• Distinction:	80% and above
• First division:	65% to below 80%
• Second division:	50 % to below 65%
• Pass division:	Pass marks to Below 50%

Certificate Awarded

- Students who pass all the components of all subjects of all 6 semesters are considered to have successfully completed the program.
- Students who successfully complete the program will be awarded with a degree of **"Diploma in Interior Design"**.

Career Path

The graduates will be eligible for the position equivalent to non-gazetted 1st class/Level 5 (technical) as prescribed by the Public Service Commission of Nepal and other concerned agencies.

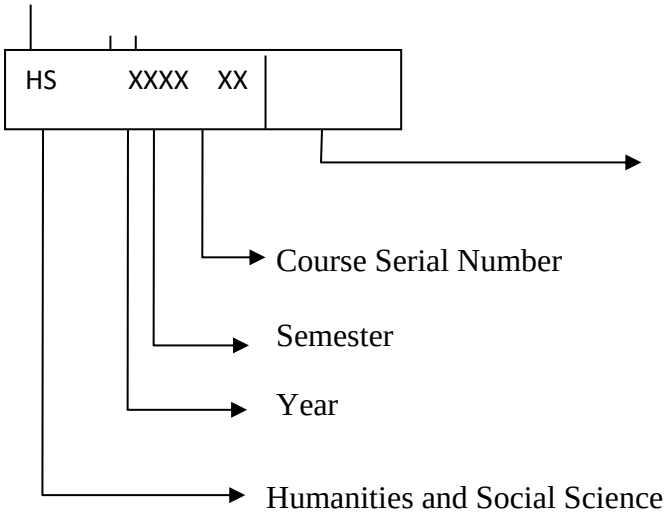
General Attitudes Required

A student should demonstrate following general attitudes for effective and active learning.

Acceptance, Affectionate, Ambitious, Aspiring, Candid, Caring, Change, Cheerful, Considerate, Cooperative, Courageous, Decisive, Determined, Devoted, Embraces, Endurance, Enthusiastic, Expansive, Faith, Flexible, Gloomy, Motivated, Perseverance, Thoughtful, Forgiving, Freedom, Friendly, Focused, Frugal, Generous, Goodwill, Grateful, Hardworking, Honest, Humble, Interested, Involved, Not jealous, Kind, Mature, Open minded, Tolerant, Optimistic, Positive, Practical, Punctual, Realistic, Reliable, Distant, Responsibility, Responsive, Responsible, Self-confident, Self-directed, Self-disciplined, Self-esteem, Self-giving, Self-reliant, Selfless, Sensitive, Serious, Sincere, Social independence, Sympathetic, Accepts others points of view, Thoughtful towards others, Trusting, Unpretentiousness, Unselfish, Willingness and Work-oriented.

Subjects Codes

Each subject is coded with a unique number preceded and followed by certain letters as mentioned in following chart:



Offering Departments:

AR: Architecture

CT: Computer Engineering

CE: Civil Engineering

SH: Science and Humanities

MG: Management

ID: Interior Design

HS: Humanities and Social Science

Curriculum Structure of Diploma in Interior Design

Year: I **Semester: I**

Teaching Scheme								Examination Scheme							Total Marks	Remarks
Course Code	Subject	Mode				Weekly Hours	Credit Hours	Theory			Practical					
		L	T	P	Lab			Assmt. Marks	Final		Assmt. Marks	Final				
									Marks	Time (Hrs)		Marks	Time (Hrs)			
1101 SH	Nepali	4				4	4	20	80	3	-	-	-		100	*Continuous assessment
1102 SH	English I	4				4	4	20	80	3	-	-	-		100	
1103 SH	Mathematics I	5	1			6	6	20	80	3	-	-	-		100	
HS1101ID	Introduction to Interior Design	2		2		4	3	10	40	1.5	30	20	3		100	
HS1102 ID	Arts and Graphics I	2		4		6	4	10	40	1.5	60	40	4		150	
HS1103 ID	Model Making, I	2		4		6	4	10	40	1.5	60	40	4		150	
HS 1104 ID	History of Art and Interior Design	4				4	4	20	80	3	-	-	-		100	
Total		**23**	**1**	**10**		**34**	**29**								**800**	

Year: I **Semester: II**

Teaching Scheme								Examination Scheme							Total Marks	Remarks
S.N.	Subject	Mode			Weekly Hours	Credit Hours		Theory			Practical					
		L	T	P	Lab			Assmt. Marks	Final		Assmt. Marks	Final				
									Marks	Time (Hrs)		Marks	Time (Hrs)			
1201SH	English II	4				4	4	20	80	3	-	-	-		100	*Continuous assessment
1202SH	Mathematics II	5	1			6	6	20	80	3	-	-	-		100	
HS1201ID	Arts and Graphics II	2		4		6	4	10	40	1.5	60	40	4		150	
HS1202ID	Model Making II	2		4		6	4	10	40	1.5	60	40	4		150	
HS1203ID	Basic design	2		4		6	4	10	40	1.5	60	40	4		150	
HS1204ID	Visual Art I	2		4		6	4			1.5	60	40	4		150	
EG1211CT	Computer Application	2		2		4	3	10	40	1.5	30	20	3		100	
Total		**19**	**1**	**18**		**38**	**26**	**170**	**560**		**60**	**60**			**900**	

Year: II **Semester: I**

Teaching Scheme								Examination Scheme							Total Marks	Remarks
Course Code	Subject	Mode				Weekly Hours	Credit Hours	Theory			Practical					
		L	T	P	Lab			Assmt. Marks	Final		Assmt. Marks	Final				
									Marks	Time (Hrs)		Marks	Time (Hrs)			
HS2101ID	Design Studio I	2		4		6	4	10	40	1.5	60	40	4		150	*Continuous assessment
HS2102ID	Anthropometrics	2		4		6	4	10	40	1.5	60	40	4		150	
EG2107CE	Building materials	4		2		6	5	20	80	3	30	20	3		150	
EG2108CE	Building services I	4		4		8	6	20	80	3	60	40	4		200	
HS2103ID	Visual Arts II	2		4		6	4	10	40	1.5	60	40	4		150	
EG2101AR	Computer Aided Drafting (CAD-basic) I	2		4			4	10	40	1.5	60	40	4		150	
Total		**16**		**22**		**38**	**27**								**950**	

Year: II **Semester: II**

Teaching Scheme								Examination Scheme							Total Marks	Remarks
Course Code	Subject	Mode				Weekly Hours	Credit Hours	Theory			Practical					
		L	T	P	Lab			Assmt. Marks	Final		Assmt. Marks	Final				
									Marks	Time (Hrs)		Marks	Time (Hrs)			
EG2206CE	Building Construction	4		4		8	6	20	80	3	60	40	4		200	*Continuous assessment
HS2201ID	Economics	4				4	4	20	80	3					100	
EG2207CE	Building services II	4		4		8	6	20	80	3	60	40	4		200	
EG2202ID	Design Studio II	2		4		6	4	10	40	1.5	60	40	4		150	
HS2203ID	Interior Design in Nepal	4		2		6	5	20	80	3	30	20	3		150	
EG2201AR	Computer Aided Drafting (CAD-Advanced) II	2		4		6	4	10	40	1.5	60	40	4		150	
Total		**20**		**18**		**38**	**29**								**950**	

Year: III **Semester: I**

Teaching Scheme								Examination Scheme						Total Marks	Remarks
Course Code	Subject	Mode				Weekly Hours	Credit Hours	Theory			Practical				
		L	T	P	Lab			Assmt. Marks	Final		Assmt. Marks	Final			
									Marks	Time (Hrs)		Marks	Time (Hrs)		
HS3101ID	Design Studio III	2		4		6	4	10	40	1.5	60	40	4	150	*Continuous assessment
HS3102ID	Furniture Designing	2		4		6	4			1.5	60	40	4	150	
EG3108CE	Working Drawing	1		6		7	4	-	-	-	90	60	4	150	
HS3103ID	Sociology	4				4	4	20	80	3	-	-	-	100	
EG3109CE	Estimating and costing	2		4		6	4	10	40	1.5	60	40	4	150	
EG3101MG	Entrepreneurship Development	3		2		5	4	20	60	3	10	40	1.5	100	
Total		**14**		**20**		**32**	**22**							**800**	

Year: III **Semester: II**

Teaching Scheme								Examination Scheme						Total Marks	Remarks
Course Code	Subject	Mode				Weekly Hours	Credit Hours	Theory			Practical				
		L	T	P	Lab			Assmt. Marks	Final		Assmt. Marks	Final			
									Marks	Time (Hrs)		Marks	Time (Hrs)		
HS3201ID	Internship/Practicum			585		39	15					300			*Continuous assessment
Total															

First Year/ First Semester

नेपाली

११०१ एस.एच.

वर्षः प्रथम | जम्माः ४ घण्टा/हप्ता

खण्डः प्रथम | प्रवचनः ४ घण्टा/हप्ता

कोर्षको परिचयः

यस विषयमा विद्यार्थीहरूले भावी व्यावसायमा प्रभावकारी ढङ्गले सञ्चार गर्नका लागि आवश्यक पर्ने ज्ञान र सीपसँग सम्बन्धित नेपाली सञ्चारात्मक भाषा, लेखन सीप अन्तर्गतका शीर्षक र कृति परिचयको ढाँचा गरी जम्मा ८ वटा एकाइहरू समावेश गरिएका छन्।

कोर्षको उद्देश्यः

यस पाठ्यांशको अध्ययनबाट विद्यार्थीहरूले निम्न लिखित भाषिक क्षमता विकास गर्न सक्नेछन्:-

१. आफ्नो व्यावसायिक कार्य क्षेत्रमा प्रभावकारी सञ्चार गर्न
२. आफ्नो व्यावसायसँघ सम्बन्धित विविध लेखन सीप प्रदर्शन गर्न
३. कार्य सम्पादनमा आवश्यक परिस्थितिजन्य संवाद गर्न।

एकाइ १: संचारात्मक नेपाली भाषा र नेपाली व्याकरण — **१४ घण्टा**

१.१ भाषिक भेदको परिचय — **३ घण्टा**

- मौखिक र लिखित
- औपचारिक र अनौपचारिक
- अमानक र मानक
- सामान्य र प्रयोजनपरक (विशिष्ट) भेदको सोदाहरण परिचय

१.२ वर्णको परिचय — **२ घण्टा**

- नेपाली वर्णहरूको पहिचान
- ध्वनि र वर्ण
- स्वर वर्ण
- व्यञ्जनवर्ण

१.३ वर्ण विन्यास — **२ घण्टा**

- ह्रस्व र दीर्घ हुने नियम
- हलन्त र अजन्तको प्रयोग सम्बन्धी नियम
- शिरबिन्दु र चन्द्रबिन्दु सम्बन्धी नियमहरू
- पदयोग र पद वियोग सम्बन्धी नियम
- लेख्य चिह्नहरुको परिचय र प्रयोग सम्बन्धी नियमहरू

१.४ शब्द भण्डार — **३ घण्टा**

- स्रोतका आधारमा शब्दको वर्गीकरण
- बनोटका आधारमा
- कार्यका आधारमा

१.५. शब्द रूपायन — **२ घण्टा**

- रूपायनको परिचय
- नामको रूपायन
- सर्वनामको रूपायन
- विशेषणको रूपायन
- क्रियापदको रूपायन

१.६ वाक्य संश्लेषण र वाक्य विश्लेषण — **१ घण्टा**

- वाक्य संश्लेषण
- वाक्यविश्लेषण

१.७ पदसङ्गति — **१ घण्टा**

- पदसङ्गतिको परिचय
- पदसङ्गतिका प्रकार

एकाइ दुईः लेखन सिप **२२ घण्टा**

२.१ लेखन सिप **६ घण्टा**

- बोधको ज्ञान र अभ्यास

२.२ लेखन सिप **३ घण्टा**

- बुँदाटिपोट
- सारांश लेखन

२.३ लेखन सिप **३ घण्टा**

- संवाद लेखन
- अनुच्छेद लेखन

(कुनै एक)

२.४ लेखन सिप **४ घण्टा**

- निमन्त्रणापत्र
- सूचना
- सम्पादकलाई चिट्ठी
- निवेदन
- विज्ञापन
- बधाई ज्ञापन

(कुनै एक)

२.५ लेखन सिप **४ घण्टा**

- निबन्ध लेखन

२.६ लेखन सिप **२ घण्टा**

- प्रतिवेदन लेखन

एकाइ ३ः कृति/पाठ परिचय र कृति समीक्षा **२४ घण्टा**

३.१ निम्नलिखित ढाँचामा तलका कृति/पाठको परिचय लेख्ने अभ्यास **६ घण्टा**

क) कृतिहरूः

- म कसरी हार्छु (नाटक) गोविन्दबहादुर मल्ल गोठाले
- माइतघर (उपन्यास) लैनसिंह वाङ्देल
- राष्ट्रनिर्माता (खण्डकाव्य) माधवप्रसाद घिमिरे

ख) कृति परिचयको ढाँचा

- कृति/पाठको नामः
- कृति/पाठको रचनाकारको नामः
- कृति/पाठको मुख्य विषयः (एक अनुच्छेद)
- कृति/पाठको महत्वः (एक अनुच्छेद)
- कृति/पाठले आफूलाई पारेको प्रभावः (छोटो एक अनुच्छेद)
- कृति/पाठको भाषाशैलीः (छोटो एक अनुच्छेद)
- कृति/पाठको कमी, कमजोरी र सुझावः (छोटो एक अनुच्छेद)

३.२ कृति समीक्षा **१८ घन्टा**

क) कथाखण्ड **५ घण्टा**

- हरिदत्तः विश्वेश्वरप्रसाद कोइराला
- बितेका कुराः रुपनारायण सिंह
- मृगतृष्णाः माया ठकुरी

ख) निबन्ध खण्ड **५ घण्टा**

- पहाडी जीवनः लक्ष्मीप्रसाद देवकोटा

- एक पत्र— सम्पादकलाईः शङ्कर लामिछाने
- भान्सा भो हजुरः भैरव अर्याल

ग) कविता खण्ड **४ घण्टा**

- साहित्य सुधाः धरणीधर कोइराला
- हामीः भूपी शेरचन
- नचिनिने भएछौः अगमसिंह गिरी

घ) एकाङ्की **४ घण्टा**

- भावनाः भीमनिधि तिवारी

सिकाइ सामग्रीहरू

- कृष्णप्रसाद पराजुलीः राम्रो रचना मीठो नेपाली, सहयोगी प्रेस
- दयाराम श्रेष्ठ र मोहनराज शर्माः नेपाली साहित्यको सङ्क्षिप्त इतिहास, साझा प्रकाशन
- डा. मोहन बिक्रम थापाः साहित्य परिचय, साझा प्रकाशन
- विश्वेश्वरप्रसाद कोइरालाः दोषी चस्मा कथा सङ्ग्रह, साझा प्रकाशन
- माधवप्रसाद घिमिरेः राष्ट्र निर्माता खण्डकाव्य, साझा प्रकाशन
- लैनसिंह वाङ्देलः माइतघर उपन्यास, रत्न पुस्तक भण्डार
- गोविन्दबहादुर मल्ल गोठालेः भोको घर एकाङ्की सङ्ग्रह, साझा प्रकाशन
- व्यावहारिक नेपाली, टीकाहरि बराल, अस्मिता बुक्स पब्लिसर्स एण्ड डिस्ट्रिब्युटर्स प्रा.लि.पुतलीसडक काठमाडौं
- गोरखापत्र, कान्तिपुर आदि पत्रिका सम्पादकीय, टिप्पणी र लेखहरू
- प्रशिक्षकहरूले आफ्नो पुस्तक तयार गर्न वा बजारमा पाइने सामग्री छानेर पढाउन सक्ने

विशिष्टीकरण तालिका

एकाइ	शीर्षक	समय	पूर्णांक
१	**संचारात्मक नेपाली भाषा र नेपाली व्याकरण**	**१४ घण्टा**	**पूर्णाङ्क (२४)**
	१.१ भाषिक भेदको परिचय	३ घण्टा	पूर्णाङ्क (४)
	१.२ वर्णको परिचय	१ घण्टा	पूर्णाङ्क (२)
	१.३ वर्णविन्यास	३ घण्टा	पूर्णाङ्क (४)
	१.४ शब्द भण्डार	३ घण्टा	पूर्णाङ्क (२)
	१.५ शब्द रुपायन	२ घण्टा	पूर्णाङ्क (४)
	१.६ वाक्य संश्लेषण र वाक्य विश्लेषण	१ घण्टा	पूर्णाङ्क (४)
	१.७ पदसङ्गति	१ घण्टा	पूर्णाङ्क (४)
२	**लेखन सीप**	**२२ घण्टा**	**पूर्णाङ्क (३२)**
	२.१ लेखन सीप (बोधको ज्ञान)	६ घण्टा	पूर्णाङ्क (८)
	२.२ लेखन सीप (बुँदा लेखन, सारांश लेखन)	३ घण्टा	पूर्णाङ्क (४)
	२.३ लेखन सीप (संवाद लेखन, अनुच्छेद लेखन)	३ घण्टा	पूर्णाङ्क (४)
	२.४ लेखन सीप (निमन्त्रणा पत्र, सूचना, सम्पादकलाई चिठ्ठी, निवेदन, विज्ञापन, बधाई ज्ञापन)	४ घण्टा	पूर्णाङ्क (४)
	२.५ लेखन सीप (निबन्ध लेखन)	४ घण्टा	पूर्णाङ्क (८)
	२.६ लेखन सीप (प्रतिवेदन लेखन)	२ घण्टा	पूर्णाङ्क (४)
३	**कृति/पाठको परिचय लेख्ने अभ्यास**	**२४ घण्टा**	**पूर्णाङ्क (२४)**
	३.१ कृति/पाठको परिचय लेख्ने अभ्यास	६ घण्टा	पूर्णाङ्क (८)
	३.२ कृति समीक्षा	१८ घण्टा	पूर्णाङ्क (१६)
	क. कथा खण्ड	५ घण्टा	पूर्णाङ्क (४)
	ख. निवन्ध खण्ड	५ घण्टा	पूर्णाङ्क (४)
	ग. कविता खण्ड	४ घण्टा	पूर्णाङ्क (४)
	घ. एकाङ्की	४ घण्टा	पूर्णाङ्क (४)

English I
1102 SH

Year: I **Total: 4 hours /week**
Semester: I **Lecture: 4 hour/week**
Practical: hours/week

Course Description:
This course is designed with a view to provide students techniques in using English for academic and communicative purposes, train them in the comprehending varieties of texts, terminologies, grammatical and communicative areas of English language, make them see the relationship between structure and meaning. This guides the students from general to comprehensive understanding of language.

Course Objectives:
On completion of the course the students will be enabled to:

1. Construct sensible sentences applying the grammatical structures.
2. Answer the questions given after the comprehension passage.
3. Use terminologies vocabularies to construct sensible sentences.
4. Perform the communicative functions in given situation.
5. Write paragraphs on people, place and events correctly and meaningfully.
6. Analyze the literary texts.

Section One: Language Development **40 Hrs.**

Unit 1: Critical thinking **4 Hrs.**

1.1 Reading Comprehension: Know Thyself
  1.1.1 Terminologies of thinking skills
  1.1.2 Question – answer
1.2 Writing Email
1.3 Question Tag
1.4 Dialogue: Expressing disappointment.
1.5 Project Work

Unit 2: Family **4 Hrs.**

2.1 Reading Comprehension: Family
  2.1.1 Family related terminologies.
  2.1.2 Root words and prefixes
  2.1.3 Question - answer
2.2 Writing Essay
2.3 Modal Verbs
2.4 Arguing /defending a point
2.5 Project Work

Unit 3: Sports **4 Hrs.**

3.1. Reading Comprehension: Euro 2020
  3.1.1 Use of sports related terminologies
  3.1.2 Pronunciation
  3.1.3 Question- answer
3.2. Writing a news story
3.3. Determiner and Quantifier
3.4. Asking for and giving reason
3.5. Project Work

Unit 4: Education **4 Hrs.**

4.1 Reading Comprehension: A Story of My Childhood
- 4.1.1 Use of terminologies of Education.
- 4.1.2 Intonation
- 4.1.3 Question- answer

4.2 Writing a biography
4.3 Connectives
4.4 Expressing the degrees of Certainty
4.5 Project Work

Unit 5: Humor **4 Hrs.**

5.1 Reading Comprehension: Why do we laugh inappropriately?
- 5.1.1 Synonyms and antonyms of verb: 'laugh'
- 5.1.2 Verbs of emotions
- 5.1.3 Question -answer

5.2 Describing a favorite person
5.3 Adverbs of Frequency
5.4 Expressing feelings, emotions and attitudes
5.5 Project Work

Unit 6: Hobbies **4 Hrs.**

6.1 Reading Comprehension: On Walking
- 6.1.1 Finding meaning in dictionary
- 6.1.2 Question- answer

6.2 Writing an essay
6.3 Passive voice
6.4 Dialogue on Reminding
6.5 Project Work

Unit 7: Animal World **4 Hrs.**

7.1 Reading Comprehension: The Medusa and the Snail
- 7.1.1 Finding meaning in dictionary
- 7.1.2 Question-answer

7.2 Writing Essay
- 7.2.1 Independence vs. Interdependence.
- 7.2.2 Increasing individualism in the modern Nepali society.

7.3 Passive Voice
7.4 Expressing counter arguments
7.5 Project Work

Unit 8: History **4 Hrs.**

8.1 Reading Comprehension: After the World Trade Centre
- 8.1.1 Definition of Professional words
- 8.1.2 Question- answer

8.2 Description of an event
8.3 Preposition
8.4 Simple future, future continuous, future perfect and future perfect continuous
8.5 Pair work: Speculation
8.6 Project Work

Unit 9: Leisure and Entertainment **4 Hrs.**

9.1 Reading Comprehension passage: A Journey Back in Time

9.1.1 Content Words
9.1.2 Question - answer
9.2 Business letter
9.3 Miscellaneous agreements
9.4 Pair work: Expressing indifference
9.5 Project Work

Unit 10: Fantasy **4 Hrs.**

10.1 Reading Comprehension: The Romance of a Busy Broker
10.1.1 Finding meaning in a dictionary
10.1.2 Terminologies used in the stock market
10.1.3 Question - answer
10.2 Writing Summary
10.3 Relative Clause
10.4 Describing process
10.5 Project Work

Section Two: Literature **20 Hrs.**

Unit One: Short Stories

1. Neighbors - Tim Winton
2. A Respectable Woman - Kate Chopin
3. A Devoted Son - Anita Desai 189

Unit Two: Poems

1. A Day - Emily Dickinson
2. Every Morning I Wake - Dylan Thomas
3. I Was My Own Route - Julia de Burgos

Unit Three: Essays

1. On Libraries - Oliver Sacks
2. Marriage as a Social Institution - Stephen L. Nock

References:

1. Panday, Ram Kumar. *Yeti Tells.* SajhaPrakashan.3rd edition. Kathmandu, 2050.
2. Ancient Tales.Ed, Lohani, Shreedhar P, Adhikari Rameshwar P and Subedi, Abhi N. Educational Enterprises Pvt Ltd: Kathmandu,1996.
3. Grade 12 English. Centre for Curriculum Development, GoNl: Sano Thimi, 2077.
4. Poudel, R.C., A Manual to Communicative English, K.P. Pustak Bhandar, Kathmandu, 1956/57.
5. Shah, B.L., A text book of writing skills in English, Hira Books Enterprises, Kathmandu,
6. Fruehling, R. T. and Oldham N. B., Write to the point, McGraw- Hill, Inc. New York NY
7. Tayior, G., English conversation practice, 1975.
8. Maharjan L. B., A textbook of English sounds and Structures, Vidyarthi Pustak Bhandar Kathmandu,2000.
9. Blundell, Jon, Higgens, Jonathan & Middlemiss, Nigel, Function of English, Oxford University Press
10. Better English Pronunciation, Cambridge University Press, New edition
11. Link English, Central Department of English, Tribhuvan University
12. References to be selected by the related lecturer(s) from among the texts available in the market that meet the content needs of this subject.
13. The related institute may develop its own textbook and approve from the related authority so as to have a prescribed textbook of this subject.

Evaluation Scheme

Units	Title	Hours	Mark distribution*
Language Development			
1.	Critical thinking	4	5
2.	Family	4	5
3.	Sports	4	5
4.	Education	4	5
5.	Humor	4	5
6.	Hobbies	4	5
7.	Animal World	4	5
8.	History	4	5
9.	Leisure and Entertainment	4	4
10.	Fantasy	4	4
Total		**40**	**48**
Literature			
1.	Neighbors - Tim Winton	3	7×2
2.	A Respectable Woman - Kate Chopin	3	
3.	A Devoted Son - Anita Desai	3	
4.	A Day - Emily Dickinson	1	6×1
5.	Every Morning I Wake - Dylan Thomas	1	
6.	I Was My Own Route - Julia de Burgos	1	
7.	On Libraries - Oliver Sacks	4	6×2
8.	Marriage as a Social Institution - Stephen L. Nock	4	
Total		**20**	**32**

Mathematics I
(1103SH)

Year: I **Total: 6 hours /week**
Semester: I **Lecture: 5 hours/week**
Tutorial: 1 hour/week
Practical: hours/week
Lab: hours/week

Course description:
This subject consists of four units related to trigonometry, co-ordinate geometry, algebra and calculus necessary to develop mathematical background helpful for the understanding and practicing the related works.

Course objectives:
After the completion of this course, student will be able to explain the concepts of the followings and apply them in the field of related area.

- Familiarize with the real number system and functional relation between parameters
- Explain the terms: Trigonometric equations, inverse circular functions and properties of triangles Progressions, permutations and combinations, binomial theorem, exponential and logarithmic series
- Define Straight lines, pair of lines and circle,
- Explain Sets, Limit and continuity, derivatives and anti-derivatives.

Course Contents:

Unit: 1: Set, Relation and Function **10 Hrs.**

1.1. Set, set notation, operation on sets
1.2. Venn diagram
1.3 Relation between sets
1.4 Real number system, absolute value of a real number
1.5 Functions and its types
1.6 Algebraic and transcendental function

Unit: 2: Trigonometry **15 Hrs.**

2.1. Review of trigonometrical functions
2.2. General solution of the equations sin x = k, cos x = k and tan x = k
2.3. Inverse circular function
2.4. Properties of triangles:

- The sine law, cosine law, tangent law, projection law
- The half formulae
- The area of triangle

2.5. Solution of triangle

Unit: 3: Algebra **10 Hrs.**

3.1 Progressions:

- A.P, G.P and H.P

3.2 Means

- A.M, G.M and H.M

3.3 Sum of infinite geometric series
3.4 Sum of natural number

3.5 Polynomial equations:

- Quadratic equation
- Nature of roots of quadratic equations
- Relation between roots and coefficients
- Formation of quadratic equation

Unit: 4: Co-ordinate Geometry **15 Hrs.**

4.1 Straight lines:

- Three standard forms of equation of straight lines
- Linear equation $Ax + By + C = 0$
- Any line through the intersection of two lines
- point of concurrencies

4.2 Pair of straight lines:

- The homogeneous equations of second degree representing a pair of straight lines through the origin
- Angle between two lines
- Bisector of the angles between two lines
- Condition that the general equation of second degree may represent a line pair
- Lines Joining the origin to the intersection of a line and a curve

4.3 Circle

- Equation of circle in standard forms
- Equation of tangent and normal

Unit: 5: Calculus **25 Hrs.**

5.1 Limits and continuity

5.2 Derivatives:

- By first principle or definition
- By power, sum, product, quotient rule, parametric and implicit function

5.3 Indefinite integrals:

- General or simple integral
- Integration by substitution method
- Integration by trigonometrical substitution method
- Integration by parts

5.4 Definite integral

Recommended textbooks:

- Basic mathematic for grade XI and XII
  By: B.C Bajracharya
- Fundamental of mathematics for grade XI and XII
  By: P.M Bajrachraya

Evaluation Scheme

Unit wise Marks division for Final Exam

S. N.	Units	Short questions (2 marks)	Long questions (4 marks)	Total Marks
1.	Set, Relation and Function	2x2 = 4	1x4=4	8
2.	Trigonometry	3x2 = 6	2x4=8	14
3.	Algebra	3 x 2 = 6	3 x 4 = 12	18
4.	Coordinate Geometry	2 x 2 = 4	3 x 4 = 12	16
5.	Calculus	4 x 2 = 8	4 x 4 = 16	24
		14 x 2 = 28	**13 x 4 = 52**	**80**

Introduction to Interior Design
HS1101ID

Year: I **Total: 4 hours**
Semester: I **Lecture: 2 hours**
Practical:2 hours

Course description:

This course is designed to give the students introduction about interior design field. It also gives techniques and materialistic knowledge of interior design.

Course objectives:

After completion of this course students will be able to:

1. Define the interior design.
2. Identify the design elements.
3. Differentiate between Interior decorators and interior designers
4. Describe the carrerprespective of interior design.

Course Contents

Theory

1. **Unit: Interior design** **12 Hrs.**
   - 1.1 Introduction
   - 1.2 Scope
   - 1.3 Evolution
   - 1.4 Difference between Interior decorators and interior designers.
   - 1.5 Roles of interior designers.
   - 1.6 Types of interior design /areas of specialization
   - 1.7 Focus of interior designers.
   - 1.8 Quality of good interior designers.

2. **Unit: Interior Designers** **6 Hrs.**
   - 2.1 World first interior designer (**Elsie de Wolfe)**
   - 2.2 Top 10 world's famous interior designer
     - 2.2.1 Introduction
     - 2.2.2 Collect the reference pictures.

3. **Unit: interior Brands** **12 Hrs.**
   - 3.1 5 Famous international interior brands and their best product.
     - 3.1.1 introduction
     - 3.1.2 Collect the reference pictures.
   - 3.2 Brands in Nepal.
     - 3.2.1 Paints
       - 3.2.1.1. Introduction
       - 3.2.1.2. Importance.
       - 3.2.1.3. Uses
       - 3.2.1.4. Top paint brand available in Nepal

3.2.2 Furniture and furnishing
3.2.2.1. Introduction
3.2.2.2. Importance.
3.2.2.3. Uses
3.2.2.4. Top furniture brand available in Nepal
3.2.3 Lights
3.2.3.1. Introduction
3.2.3.2. Importance.
3.2.3.3. Uses
3.2.3.4. Top lights brand available in Nepal

Practical: **30 Hrs.**

Perform the following tasks:

1. Conduct field visit, collect the data, prepare the report and presentation of any types of interiors designing spaces on: **10 Hrs.**
    - Living room
    - Bed room
    - Kitchen and dinning
    - Rest room
2. Prepare the report and present famous international interior designers:
3. Prepare the report and present interior brands on: **8 Hrs.**
    - Paint (any two)
    - Furniture and furnishing (any two)
    - Lights (any two)
4. Conduct a questionare, prepare report and present any one interior design firm of Nepal in given format. (Introduction, history, organo structure, portfolio) **12 Hrs.**

References:

1. Sloan, A. (1988), The Complete Book of Decorative Paint Techniques, Ebury Press & London.
2. 2.Larsen, J. L, (1989), Furnishing Fabrics, Thames 81 Hudson, London.
3. 3.Riggs, J.Rosemary (1989), Materials & Components of Interior Design, Prentice Hall, New Jersey.
4. "Color Wheel, Color Schemes, Color Therapy, Colors by Interiordezine". *www.interiordezine.com*. Retrieved 2016-10-19.
5. *"History". Archived from the original on 2013-09-08. Retrieved 2012-12-17*

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	**Title**	**Hours**	**Mark distribution**
1	Introductory Interior Design	22	34
2	Interior Designers	10	12
3	Interior Brands	28	34
		60	**80**

Arts and Graphics I
HS1102ID

Year: I **Total: 6 hour /week**
Semester: I **Lecture: 2 hour/week**
Practical: 4 hours/week

Course description
This course is designed to provide knowledge and skills on geometrical shapes, and its construction procedure, interpretation of the views of objects by orthographic projection, and drawing of different objects in different scale (use of different scales).

Course objectives
After the completion of this course students will be able to:
1. Handle drawing instruments and materials.
2. Identify geometrical construction and shape.
3. Describe the scale and its type and construction.
4. Draw and interpret the multi view of solids with scale and dimensioning.

Course Contents
Theory
Unit 1: Introduction to Arts and Graphics **2 Hrs.**
1.1 Drawing materials: drawing as drawing paper, drawing board, adhesive tape, pencil, eraser, sharpener etc.
1.2 Drawing tools: set square, compass, divider etc.
1.3 Conventional line, its types, their uses and line weight.
1.4 Drawing paper size and simple graphical building symbols (at least 10 symbols).

Unit 2: Lettering, scales and dimensions **2 Hrs.**
2.1 Lettering
- 2.1.1 Introduction
- 2.1.2 Stroke letter and their ratio between height and breadth.
- 2.1.3 Upper- and lower-case letter.
- 2.1.4 Vertical and inclined (*italic*) letter (with inclined angle).

2.2 Scale 2 Hrs.
- 2.2.1 Introduction
- 2.2.2 Scale and its importance
- 2.2.3 Types of scale: full reducing and enlarge
- 2.2.4 Construction of scale using the representative factor.

2.3 Dimensioning 2 Hrs.
- 2.3.1 Introduction
- 2.3.2 pictorial views and orthographic view

Unit 3: Convention of material **4 Hrs.**
3.1 Introduction
3.2 Uses
3.3 Types:
- Brick
- Stone
- Aggregate
- Concrete
- Wood

- Plywood
- Grass
- Gravel
- Paving
- Sand
- Stone
- Floor tiles
- Earth compact

Unit 4: Geometrical constructions **4 Hrs.**

4.1 Geometric primitives (line, triangle, quadrilateral, regular polygons and circle and name of its parts).

4.2 Division

4.2.1 Division of line: Bi-section of line, tri-section of line, division of line in any number ofParts and division of the line in proportionally

4.2.2 Division of circle: Division of circle in three, four, five and six parts.

4.2.3 Division of angle: bi-section and trisection.

4.2.4 Division of triangle and trapezium in any number of equal parts of area.

4.3 Construction of triangle, square and regular polygons.

4.4 Inscribing and describing of circle in/on triangle or polygons.

4.5 Tangency: open and crossed line tangent, Arc tangent - internal, external and combined Arc tangent.

Unit 5: Curves **2 Hrs.**

Introduction of following curves

5.1 Introduction

5.2 Types

5.2.1 Involutes

5.2.2 Spiral

5.2.3 Cycloid

5.2.4 Helices

Unit 6: Conic- section **2 Hrs.**

6.1 Definition

6.2 Parts of cone

6.3 Sectional plane

6.4 Terminology of conic section after the cut by sectional plane: ellipse, Parabola and Hyperbola.

Unit 7: Orthographic projection **4 Hrs.**

7.1 Introduction

7.2 Theory of projection

7.3 Four quadrants

7.4 Co-ordinate or three-dimensional axis

7.5 System of orthographic projection

7.6 Orthographic view (cube, cuboid, pyramid, cylinder, hexagon, cone and line.)

7.7 Analysis of object and its view

Unit 8: Point and line projection **4 Hrs.**

8.1 Introduction

8.2 Theory of projection

8.3 Notation system on HP, VP and PP

8.4 Location of point /line i, e. where it is and projection

8.5 Position of line: Perpendicular to one plane and parallel to the other, parallel to both Plane and inclined to one or both planes.

Unit 9: Plane projection **2 Hrs.**

9.1 Perpendicular to one plane and parallel to the other,

9.2 Perpendicular to both planes,

9.3 Perpendicular to one plane and inclined to the other.

Unit 10 Projection of solids **2 Hrs.**

10.1 Introduction

10.2 Theory of projection

10.3 Orthographic projection of geometrical solid I, e. cube, cuboid, pyramid, cylinder, hexagon and cone in simple Position. (simple position means axis- perpendicular to one plane and parallel to other, axis parallel to both planes.

10.4 Orthographic projection of different model or work pieces. (at least 10 to 15 model Pieces)

Practical Exercise (Class worksheet) **60 Hrs.**

1. Draw the lines **9 Hrs.**

1.1 **Sheet No: 1:** Draw the horizontal, vertical, inclined (45°, 30°,60°,120° degree) line and circle using the drawing toolsand free handhorizontal, vertical, inclined (45°,60°,120° degree) line.

1.2 **Sheet No: 2:** visible (boarder), construction line, dashed line, center line, and continuous line.

1.3 **Sheet No: 3:** section line, wavy line, break line, leader line, dimension, extension.

2. Write architectural Lettering **5 Hrs.**

Sheet No: 4

2.1. Draw free hand lettering exercise on upper- and lower-case vertical letter using horizontal and vertical guide line (at least one set) and using instruments.

2.2. Draw free hand lettering exercise on upper- and lower-case inclined letter with numerical using the horizontal and vertical guide line (at least one set)

2.3. Draw free hand lettering exercise of upper-case letter using horizontal guide line of different height letter of 10 to 3mm height and using instruments.

3. Draw the dimension and scale: **6 Hrs.**

3.1. Sheet No: 5: Aligned, unidirectional and base line dimension

3.2. Sheet No 6: Scale construction

4. Draw the convention of material:

4.1. **Sheet No: 7:** Brick, Stone, Aggregate, Concrete, Sand, Grass, Glass, Wood

4.2. **Sheet No: 8:** Gravel, Parquet, Tiles, Earth compact, mirror, Plywood.

5. Draw the construction of line and geometrical shape **25 Hrs.**

5.1 **Sheet No: 9:** bisection, trisection, line division any number of parts with proportional division.

5.2 **Sheet No: 10:** circle division in three, four five and six parts, area of triangle and trapezoid division any number of equal parts.

5.3 **Sheet No: 11:** Construct triangle by given side, making the equilateral triangle, square and (Regular Polygons pentagon, hexagon, heptagon etc.)

5.4 **Sheet No: 12:**

5.4.1. Describe the circle on triangle, inscribing the circle in right angle triangle, Equilateral triangle, and scalene triangle,

5.4.2. Inscribe the circle in a sector.

5.5 **Sheet No: 13**

5.5.1. Determine the length of a given arc

5.5.2. Draw an arc of a given radius touching two given line which sustains any angle between them.

5.5.3. Draw the center of arc of circle finding the center of Arc, Making the circle touching the three points.

5.6 **Sheet No: 14**

5.6.1. Draw a line parallel to a given distance from a given line.

5.6.2. Find the centre of the given line.

5.6.3. Draw a perpendicular to a given line

5.6.4. Draw an arc of a given radius touching two given straight line at right angle.

5.7 **Sheet No: 15**

5.7.1. Tangent from any point on circle, open and crossed line (belt) tangent. Arc tangent-Internal, External and combined.

5.8 **Sheet No: 16**

5.8.1. Oblate ellipse: concentric circle method

5.8.2. Parabola: Rectangle, offset, Tangent and Eccentricity method.

5.8.3. Hyperbola: Rectangle method.

6. Orthographic projection 15 Hrs.

6.1 Sheet No: 17: Point projection- Point projection by given location by first and third angle projection.

6.2 Sheet No: 18: Line projection-perpendicular to one plane and parallel to other plane, parallel to both planes, parallel to both planes inclined to one or both plane

6.3 Sheet No: 19: Plane of projection-Perpendicular to one plane and parallel to other, perpendicular to both the planes, perpendicular to one plane and inclined to other.

6.4 Sheet No: 20: Solid projection/Orthographic projection of simple geometrical solid objects in first and third angle projection.

References:

- Luzzadar W. I Fundamental of Engineering drawing. Prentice-Hall of India
- S. Bogolyubov and A. Voinov, Engineering drawing. Mir Publishers, Moscow.
- S. K. Bogolyubov, Exercises in Machine Drawing. Mir publishers, Moscow.
- K. Venugopal Engineering Drawing and Graphics, New age international (p) Ltd. India
- Gill. P. S. Engineering Drawing, S. K. Kataria and sons India.
- M. B. Shah and B.C. Rana, Engineering Drawing, Pearson India,
- N. D. Bhatta and Panchal V.M. Engineering Drawing Charotar publishing House India.

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1.	Introduction to Art and Graphics	12	20
2.	Lettering, scales and dimensions	16	20
3.	Convensional materials	7	10
4.	Geometrical constructions	29	40
5.	Curves	2	
6.	Conic section	2	
7.	Orthographic projection	14	30
8.	Point and line projection	4	
9.	Plane projection	2	
10.	Projection of solids	2	
	Total	**90**	**120**

Model Making I
HS1103ID

Year: I **Total hours: 4 hrs/week**
Semester: I **Lecture: 2 hrs/week**
Practical: 2 hours/week

Course Description:
This course consists of three units namely: introduction of tools and equipments, making different volumes with surface development, application of different finishing for volumes which are basically necessary to develop model making skill and helpful for understanding as well as practicing volume compositon.

Course Objectives:
On completion of this course, students will be able to:

- Use the tools and materials of model making.
- Create different textures for model making.
- Build different volumes.

Course Contents
Theory **30 Hrs.**
Unit 1: Tools, equipments and materials **10 Hrs.**

1.1 Mount board
- 1.1.1 Introduction
- 1.1.2 Types
- 1.1.3 Uses
- 1.1.4 Size

1.2 Color paper (a4)
- 1.2.1 Introduction
- 1.2.2 Types
- 1.2.3 Uses

1.3 Thermocol (a2)
- 1.3.1 Introduction
- 1.3.2 Types
- 1.3.3 Uses
- 1.3.4 Size

1.4 Formbaord/sunboard
- 1.4.1 Introduction
- 1.4.2 Types
- 1.4.3 Uses
- 1.4.4 Required sizes and thickness

1.5 Paper cutter and metal scale
- 1.5.1 introduction
- 1.5.2 types
- 1.5.3 use
  - 1.5.3.1 full cut
  - 1.5.3.2 half cut

1.6 glue
- 1.6.1 introduction
- 1.6.2 use

1.6.3 type
1.6.3.1 white glue
1.6.3.2 glue stick
1.6.3.3 instant glue

Unit 2: Volumes with surface development **10 Hrs.**

2.1 cube
2.1.1 Introduction
2.1.2 Uses
2.2 cuboid
2.2.1 Introduction
2.2.2 Uses
2.3 pyramid
2.3.1 Introduction
2.3.2 Uses
2.4 cylinder
2.4.1 Introduction
2.4.2 Uses
2.5 cones
2.5.1 Introduction
2.5.2 Uses

Unit 3: Finishing for volumes **10 Hrs.**

3.1 Fnishing volumes with poster color.
3.1.1 introduction
3.1.2 use
3.2 Finishing volumes with stickers on the surface
3.2.1 introduction
3.2.2 use
3.3 Finishing volumes with color paper.
3.3.1 introduction
3.3.2 use
3.4 surface finishes for model making
3.4.1 Brick texture
3.4.1.1 Introduction
3.4.1.2 Use
3.4.2 Tile texture
3.4.2.1 Introduction
3.4.2.1 Use
3.4.3 Marble texture
3.4.3.1 Introduction
3.4.3.2 Use
3.4.4 Timber texture
3.4.4.1 Introduction
3.4.4.1 Use
3.5 Composition of volumes
3.5.1. introduction
3.5.2. use

Practical **60 Hrs.**

Unit 1: Perform the following: **12 Hrs.**

1. Demonstrate the use of paper cutter with metal scale.
2. Full cut mountboard, color paper, thermocol, formboard/sunboard using paper cutter and metal scale.
3. Half cut mount board and color paper using paper cutter and metal scale.
4. Stick or attach papers with help of glue mentioned.

Unit 2: Perform the following: **16 Hrs.**

1. Develop surface of cube, cuboid, pyramid, cylinder, cone, and prism.
2. Build the developed surface of volumes.

Unit 3: Perform the following: **32 Hrs.**

1. Paint a surface of a volume (3D objects) with poster color.
2. Stick vynil sticker on the surface of a volume (3D objects).
3. Stick color paper on surface of a volume (3D objects).
4. Develop brick texture with pen or pencil on a color paper.
5. Develop tile texture with pen or pencil on a color paper.
6. Develop marble texture with pen or pencil on a color paper.
7. Develop timber texture with pen or pencil on a color paper.
8. Develop the Composition of volume (3D objects).

References:

1. "A Beginner's Guide to Model Building - Part 1 of a 4 part series | Hobby and Toy Central". *hobbyandtoycentral.com*. Retrieved 2018-07-20**.**
2. *Hasluck, Paul (2013). Building Model Boats - Including Sailing and Steam Vessels. Read Books Ltd.* ISBN 9781473347410

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	Tools, equipments and materials	30	40
2	Volums with surface development	30	40
3	Finishing for volumes	30	40
	Total	90	120

History of Arts and Interior Design
HS1104ID

Year: I **Total: 4 hours/week**
Semester: I **Lecture: 4 hours/week**
Practical: hours/week

Course Description:
This course deals with the history of art and interior Design which consists of pre history to early civilization, ancient Egyptian, medieval interior and English interior.
Course objectives:

After completion of this course, students will be able to:

1. Define the history of arts and interior design.
2. Explain various furnitures and its characteristic according to historic period.

Courses contents:
Theory **60 Hrs.**
Unit 1 Pre-history to early civilization **2 Hrs.**
1.1 Introduction
1.2 History

Unit 2 Ancient Egypt **8 Hrs.**
1.1 Introduction
1.2 History
1.3 Characteristics
1.4 Furniture designs
- 1.4.1 Stools
- 1.4.2 Thrones
- 1.4.3 Chairs
- 1.4.4 Tables
- 1.4.5 Beds
- 1.4.6 Chests, etc

Unit 3 Mesopotamia **2 Hrs.**
3.1 Introduction
3.2 History
3.3 Characteristics

Unit 4 Greece **4 Hrs.**
4.1 Introduction
4.2 History
4.3 Characteristics
4.4 Furniture designs
- 4.4.1 Stools
- 4.4.2 Chairs
- 4.4.3 Couches
- 4.4.4 Tables
- 4.4.5 Chests, etc

Unit 5 Rome **4 Hrs.**
5.1 Introduction

5.2 Characteristics
5.3 Materials for furniture and other design
5.4 Furniture designs
    5.4.1 Stools
    5.4.2 Chairs
    5.4.3 Couches
    5.4.4 Tables
    5.4.5 Chests, etc

Unit 6 Byzantine **4 Hrs.**

1.1 Introduction
1.2 Characteristics
1.3 Materials for furniture and Decorative items (painting, cushioned seats, etc)
1.4 Furniture designs
    1.4.1 Chairs
    1.4.2 Thrones
    1.4.3 X- stools
    1.4.4 Tables
    1.4.5 Cabinets
    1.4.6 Storage chests
    1.4.7 Beds, etc

Unit 7 Medieval interior **4 Hrs.**

1.1 Introduction
1.2 Characteristics
1.3 Medieval arts and architectures
1.4 Furniture designs
    1.4.1 Benches
    1.4.2 stools
    1.4.3 Chests, etc

Unit 8 Romanesque **4 Hrs.**

1.1 Introduction
1.2 Characteristics
1.3 Arts and architectures
1.4 Furniture designs
1.5 Arches and curves

Unit 9 Gothic **4 Hrs.**

9.1 Introduction
9.2 Characteristics
9.3 Arts and architectures
9.4 Furniture

Unit 10 ROCOCO **2 Hrs.**

10.1 Introduction
10.2 Characteristics
10.3 Arts and architectures

10.4 Furniture

Unit 11 English period **22 Hrs.**

11.1 Introduction
11.2 History
11.3 Characteristics
11.4 Characteristics of Furniture
11.5 Furniture development in Germany
11.6 Characteristics of art deco
11.7 Furniture development in Scandinavia

References:

1. S. Khan, 2020, History of Interior Design & Crafts.
2. Décor Aid Team, 2021, Interior Design History and Origins Explained.
3. P. Jones, 2020, Timeline: the evolution of ancient empires.
4. Justine, 2014, History of Interior Design.
5. C. Muscato,2019, Ancient Egyptian Furniture: History & Design.
6. Lama, 2012, Exploring Islamic Interior Design.
7. A. Ortiz, 2017, A Brief History of Interior Design Styles.
8. J. Pile and J. Gura, Fourth edition, A History of Interior Design.
9. B. Ferris, 2021, Ultimate list of Interior design styles, definition & photos

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	**Title**	**Hours**	**Mark distribution**
1.	Pre history to early civilization	2	25
2.	Ancient Egypt	8	
3.	Mesopotamia	2	
4.	Greece	4	
5.	Rome	4	
6.	Byzantine	4	
7.	Medieval interior	4	25
8.	Romanesque	4	
9.	Gothic	4	
10.	ROCOCO	2	
11.	English period	22	30
	Total	**60**	**80**

First Year/ Second Semester

English II
1201 SH

Year: I **Total: 4 hours /week**
Semester: II **Lecture: 4 hour/week**
Practical: hours/week

Course Description

This course is designed with a view to provide students techniques in using English for academic and communicative purposes, train them in the comprehending varieties of texts, terminologies, grammatical and communicative areas of English language, make them see the relationship between structure and meaning. This guides the students from general to comprehensive understanding of language.

Course Objectives

On completion of the course the students will be enabled to:

1. Construct sensible sentences applying the grammatical structures.
2. Answer the questions given after the comprehension passage.
3. Use terminologies vocabularies to construct sensible sentences.
4. Conduct a dialogue in given situation.
5. Write paragraphs on people, place and events correctly and meaningfully.
6. Analyze the literary texts.

Course Contents
Theory

Section One: Language Development **40 Hrs.**

Unit 1: Technology **4 Hrs.**

1.1 Reading comprehension: Hyper loop
  1.1.1 Use of technological terms
  1.1.2 Use of prefixes
  1.1.3 Question- answer
1.2 Issuing a press release
1.3 Subject Verb agreement
1.4 Summarizing
1.5 Project Work

Unit 2 : Money and Economy **4 Hrs.**

2.1 Reading comprehension: QR Code
  2.1.1 Use of terminologies
  2.1.2 Abbreviations
  2.1.3 Vowel sounds
  2.1.4 Question- Answer
2.2 Writing a news article
2.3 Questions:
  2.3.1 Yes/no questions
  2.3.2 Wh - questions
  2.3.3 Indirect and direct questions
2.4 Expressing necessity
2.5 Project Work

Unit 3: Human Culture **4 Hrs.**

3.1 Reading Comprehension: Land of Plenty
- 3.1.1 Word Formation: Root, Prefixes and prefixes
- 3.1.2 Question-answer

3.2 Writing:
- 3.2.1 Paragraph
- 3.2.2 Letter to the editor

3.3 Adjectives and Adverbs
3.4 Making comparison and contrast
3.5 Project Work

Unit 4: Ecology and Environment **4 Hrs.**

4.1 Reading Comprehension: Living in a Redwood Tree
- 4.1.1 Terminologies used in ecology
- 4.1.2 Compound words
- 4.1.3 Question - answer

4.2 Writing a book/film review
4.3 Reported Speech
4.4 Reporting
4.5 Project Work

Unit 5: Career Opportunities **4 Hrs.**

5.1 Reading Comprehension: Presenting Yourself
- 5.1.1 Employment-related terminologies
- 5.1.2 Answering questions

5.2 Writing job application with CV
5.3 Conditional Sentences
5.4 Clarifying
5.5 Project Work

Unit 6: Human Rights **4 Hrs.**

6.1 Reading Comprehension: "I am Sorry"- The Hardest Three Words to Say
- 6.1.1 Word formation
- 6.1.2 Question-answer

6.2 Writing Paragraphs on Steps on making education equal
6.3 Connectives
6.4 Group work: Criticizing
6.5 Project Work

Unit 7: War and Peace **4 Hrs.**

7.1 Reading comprehension: Train to Pakistan
- 7.1.1 Terminologies
- 7.1.2 Question -answer
- 7.1.3 Vowels: Monophthong s and diphthongs

7.2 Describing People, place or event
7.3 Past simple, Past continuous, Past perfect, Past perfect continuous tense
7.4 Group work: Making Announcements
7.5 Project Work

Unit 8: Music and Creation **4 Hrs.**

8.1 Reading Comprehension: A Life of Sound and Silence

8.1.1 Terminologies used in music
8.1.2 Word Stress
8.1.3 Question -answer

8.2 Writing a bibliography.
8.3 Preposition of time
8.4 Group work: Predicting
8.5 Project Work

Unit 9: Migration and Diaspora **4 Hrs.**

9.1 Reading Comprehension: Dediasporization: Homeland and Hostland
9.1.1 Consonants: Voiced and voiceless sounds
9.1.2 Stressed an unstressed syllable
9.1.3 Question - answer
9.2 Interpreting data in charts and graphs
9.3 Would/ Used to
9.4 Narrating past events
9.5 Project Work

Unit 10: Power and Politics **4 Hrs.**

10.1 Reading Comprehension: An Open Letter to Mary Daly
10.1.1 Terminologies used in politics
10.1.2 Consonant cluster
10.1.3 Question- answer
10.2 Writing an article for a newspaper
10.3 Adjective order
10.4 Pair work: Denying
10.5 Project Work

Section Two: Literature **20hrs**

Unit One: Short Stories

1. The Treasure in the Forest - H. G. Wells
2. My Old Home - Lu Xun
3. The Half-closed Eyes of the Buddha and the Slowly Sinking Sun -Shankar Lamichhane
4. A Very Old Man with Enormous Wings - Gabriel Garcia Marquez

Unit Two: Poems

1. The Awakening Age - Ben Okri
2. Soft Storm – Abhi Subedi

Unit Three: Essays

1. Knowledge and Wisdom - Bertrand Russell
2. Humility - Yuval Noah Harari
3. Human Rights and the Age of Inequality - Samuel Moyn

References:

1. Panday, Ram Kumar. *Yeti Tells.* SajhaPrakashan.3rd edition. Kathmandu, 2050.
2. Ancient Tales.Ed, Lohani, Shreedhar P, Adhikari Rameshwar P and Subedi, Abhi N. Educational Enterprises Pvt Ltd: Kathmandu,1996.
3. Grade 12 English. Centre for Curriculum Development, Government of Nepal: Sano Thimi, 2077.

4. Poudel, R.C., A Manual to Communicative English, K.P.Pustak Bhandar, Kathmandu, 1956/57.
5. Shah,B.L.,Atext book of writing skills in English, First edition Hira Books Enterprises, Kathmandu,
6. Fruehling, R. T. and Oldham N. B., Write to the point, McGraw- Hill, Inc. New York NY 10020
7. Tayior, G., English conversation practice, 1975.
8. Maharjan L. B., A textbook of English sounds and Structures, Vidyarthi Pustak Bhandar, Kathmandu,2000.
9. Blundell, Jon, Higgens, Jonathan & Middlemiss, Nigel, Function of English, Oxford University Press
10. Better English Pronunciation, Cambridge University Press, New edition
11. Link English, Central Department of English, Tribhuvan University
12. References to be selected by the related lecturer(s) from among the texts available in the market that meet the content needs of this subject.
13. The related institute may develop its own textbook and approve from the related authority so as to have a prescribed textbook of this subject.

Evaluation Scheme

Units	Title	Hours	Mark distribution
Language Development			
1.	Technology	4	5
2.	Money and Economy	4	5
3.	Human Culture	4	5
4.	Ecology and Environment	4	5
5.	Career Opportunities	4	5
6.	Human Rights	4	5
7.	War and Peace	4	5
8.	Music and Creation	4	5
9.	Migration and Diaspora	4	4
10.	Power and Politics	4	4
Total		**40**	**48**
Literature			
1.	The Treasure in the Forest - H. G. Wells	3	7×2
2.	My Old Home - Lu Xun	3	
3.	The Half-closed Eyes of the Buddha and the Slowly Sinking Sun -Shankar Lamichhane	3	
4.	A Very Old Man with Enormous Wings - Gabriel Garcia Marquez	3	
5.	The Awakening Age - Ben Okri	1	6×1
6.	Soft Storm – Abhi Subedi	1	
7.	Knowledge and Wisdom - Bertrand Russell	2	6×2
8.	Humility - Yuval Noah Harari	2	
9.	Human Rights and the Age of Inequality - Samuel Moyn	2	
Total		**20**	**32**

Mathematics II
(1202SH)

Year: I **Total: 6 hours /week**
Semester: II **Lecture: 5 hours/week**
Tutorial: 1 hour/week
Practical: hours/week
Lab: hours/week

Course description:
This subject consists of five units related to vectors, algebra, calculus, geometry and statistics necessary to develop mathematical background helpful for the understanding and practicing the related works.

Course objectives:
After the completion of this course, student will be able to explain the concepts of the followings and apply them in the field of related area.

- Explain the vectors in plain and vectors in space.
- Describe complex numbers and its different forms, matrics and determinats.
- Apply derivatives and area of curves.
- Explain the parabola and co-ordinates of space and planes.
- Describe statistics.

Course Contents:

Unit: 1: Vectors **15 Hrs.**

1.1 Vectors and its types
1.2 Components of vector in two dimensions
1.3 Vectors in space
1.4 Unite vectors I, j, k
1.5 Product of two vectors
    - Dot product
    - Cross product

Unit: 2: Algebra **20 Hrs.**

2.1. Permutation and combination
2.2. Binomial theorem, Exponential and logarithmic series
2.3. Complex numbers:
    - Conjugate and its properties
    - Modulus and its properties
    - Polar form
    - De moivre's theorem and its application
    - Cube roots of unity and its properties
2.4 Matrices and Determinants:
    - Algebra of matrices
    - Properties of determinant
    - Solution of linear equation using cramer's rule
    - Row equivalent matrix method

Unit: 3: Geometry **15 Hrs.**

3.1 The parabola:

- Standard equations
- Tangent and normal

3.2 Co-ordinates in space

3.3 Co-ordinates in plane

Unit: 4: Calculus **15 Hrs.**

4.1 Applications of derivative:

- Tangents and normal to a curve taking slope as derivative
- Maxima and minima of a function
- Derivatives as a rate measure

4.2 Applications of anti-derivative:

- Definite integrals as a limit of sum
- Area bounded by a curve and X-axis or Y- axis
- Area bounded by two curves
- Area bounded by the closed curves

Unit: 5: Statistics and Probability **10 Hrs.**

5.1 Statistics

- Measures of central tendency
- Measures of dispersion
- Correlation and regression

5.2 Probability:

- Concept of probability
- Addition and multiplication
- Concept of conditional probability

Recommended textbooks:

- Basic mathematics for grade XI and XII, By: B.C. Bajracharya
- Fundamental of mathematics for grade XI and XII, By: P.M Bajrachraya

Evaluation Scheme

Unit wise Marks division for Final Exam

S. No.	Units	Short questions (2 marks)	Long questions (4 marks)	Total Marks
1.	Vectors	2 x 2 = 4	3 x 4 = 12	18
2.	Algebra	4 x 2 = 8	4 x 4 = 16	24
3.	Geometry	2 x 2 = 4	2 x 4 = 8	12
4.	Calculous	2 x 2 = 4	3 x 4 = 12	12
5.	Statistics and Probability	2 x 2 = 4	2 x 4 = 8	12
		12x 2 = 24	**14 x 4 = 56**	**80**

Arts and Graphics II
HS1201ID

Year: I **Total: 6 hours /week**
Semester: II **Lecture: 2 hour/week**
Practical: 4 hours/week

Course description
This course is designed to impart knowledge and skills drawing pictorial view (in isometric and oblique) of the solid, surface development and intersection between two elements.

Course objectives
After completion of this course, students will be able to:
1. Analyze/ draw the different orthographic projections
2. Analyze/draw the different axonometric projection.
3. Draw isometric view perspective view.
4. Analyze/ draw isometric view and perspective view.

Course Contents
Theory

Unit 1. Axonometric projection **4 Hrs.**
1.1 Introduction
1.2 Uses
1.3 Rules for placing object in axonometric method.
1.4 Importance

Unit 2. Oblique Projection **4 Hrs.**
2.1 Introduction
2.2 Uses
2.3 Rules for placing object in oblique (Box method)
2.4 Importance

Unit 3. Isometric Drawing **4 Hrs.**
3.1 Introduction
3.2 Uses
3.3 Rules for placing object in isometric method.
3.4 Importance

Unit 4. Section in Isometric view **4 Hrs.**
4.1 Introduction
4.2 Method to draw section
4.3 Uses
4.4 Importance

Unit 5. Plan **4 Hrs.**
5.1 Introduction
5.2 Uses
5.3 Importance

Unit 6. Elevation **4 Hrs.**
6.1 Introduction
6.2 Uses
6.3 Importance

Unit 7. Section **4 Hrs.**

7.1 Introduction
7.2 Uses
7.3 Importance

Unit 8. One point perspective view **2 Hrs.**

8.1 Introduction
8.2 Uses
8.3 Importance

Practical Exercise (Class worksheet) **60 Hrs.**

1. Sheet No. 1 **4 Hrs.**

1.1 Draw the axonometric projection of geometric solid objects.
1.1.1 cube
1.1.2 cuboid
1.1.3 pyramid
1.1.4 prism

2. Sheet No. 2 **3 Hrs.**

2.1 Draw the axonometric projection of geometric solid objects components.

3. Sheet No. 3 **4 Hrs.**

3.1 Draw the oblique projection of geometric solid objects.
3.1.1 Cube
3.1.2 Cuboid
3.1.3 Pyramid
3.1.4 prism

4. Sheet No. 4 **3 Hrs.**

4.1 Draw the oblique projection of geometric solid objects components.

5. Sheet No. 5 **4 Hrs.**

5.1 Draw the isometric view of geometric solid objects.
5.1.1 cube
5.1.2 cuboid
5.1.3 pyramid
5.1.4 prism

6. Sheet No 6 **3 Hrs.**

6.1 Draw the isometric view of geometric solid object components.

7. Sheet No 7 **3 Hrs.**

7.1 Draw the section of geometric solid object in isometric view.

8. Sheet No 8 **3 Hrs.**

8.1 Draw the section of geometric solid object composition in isometric view.

9. Sheet No 9 (9a and 9b) **4 Hrs.**

9.1 Draw plan, elevation, section and isometric view of any two geometric solid object compositions.

10. Sheet No 10 **3 Hrs.**

10.1 Draw plan and elevation of given room.

11. Sheet No 11. **3 Hrs.**

11.1 Draw section of given room.

12. Sheet No 12 **3 Hrs.**

12.1 Draw plan, elevation, and isometric view of chair with dimension. (Use 1:48 scale or as required in drawing sheet.)

13. Sheet No 13. **3 Hrs.**

13.1 Draw plan, elevation, and isometric view of table with dimension. (Use scale 1:48)

14. Sheet No 14(a, b, and c) 4 Hrs.

1.1 Draw isometric view of room. (at least 3 room)

15. Sheet No 15. 4 Hrs.

15.1 Draw one point perspective view of geometric solid objects.

15.2 Cube

15.3 Cuboid

15.4 Pyramid

15.5 Prism

16. Sheet No 16: Draw one point perspective view of geometric solid objects composition. **3 Hrs.**

17. Sheet No 17: Draw perspective view of given room. **6 Hrs.**

References:

1. Luzzadar W. I Fundamental of Engineering drawing. Prentice-Hall of India
2. S. Bogolyubov and A. Voinov, Engineering drawing. Mir Publishers, Moscow.
3. S. K Bogolyubov, Exercises in Machine Drawing. Mir publishers, Moscow.
4. K. Venugopal Engineering Drawing and Graphics, New age international (p) Ltd. India
5. Gill P. S. Engineering Drawing, S. K. Kataria and sons India.
6. M. B. Shah and B.C. Rana, Engineering Drawing, Pearson India,
7. N. D. Bhatta and Panchal V.M. Engineering Drawing Charotar publishing House Ind

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	Axonometric projection	11	10
2	Oblique Projection	14	20
3	Isometric Drawing	14	20
4	Section in Isometric view	15	20
5	Plan	7	30
6	Elevation	7	
7	Section	7	
8	One point perspective view	15	20
	Total	**90**	**120**

Model Making II
HS1202ID

Year: I **Total: 6 hours/week**
Semester: II **Lecture: 2 hours/week**
Practical: 4 hours/week

Course Description
This course consists of one unit namely: making main component for model which are basically necessary to develop model making skill and helpful for understanding as well as practicing layout and also visualize designs practically.

Course Objectives
On completion of this course, students will be able to

1. Determine scales for model making.
2. Demonstrate desing through scaled model.
3. Stimulate real texture in model.

Course Contents

Theory **30 Hrs.**

Unit 1: Scale **2 Hrs.**
1.1 Introduction
1.2 Use
1.3 Type

Unit 2: Wall **4 Hrs.**
2.1. Introduction
2.2. Use
2.3. Type
- 2.3.1 Thermcol
- 2.3.2 formboard/sunboard
- 2.3.3 Mountboard

2.4. Material Used

Unit 3: Furniture **6 Hrs.**
3.1 Introduction
3.2 Use
3.3 Type
- 3.3.1 Tv unit
- 3.3.2 Sofa
- 3.3.3 Bed
- 3.3.4 Wardrobe
- 3.3.5 Dressing unit
- 3.3.6 Kitchen rack

Unit 4: Flooring and wall texture in photoshop using seamless textures **8 Hrs.**
4.1 Introduction
4.2 Use
4.3 Type

4.3.1 Tiles
4.3.2 Wooden flooring
4.3.3 Brick
4.3.4 marble/granite
4.3.5 Texture paint

Unit 5: Props or accessories for model **10 Hrs.**

5.1 Introduction
5.2 Use
5.3 Type
5.3.1 Books
5.3.2 Magzines
5.3.3 Flower vase
5.3.4 Sink
5.3.5 Basin
5.3.6 Water closet

Practical: **60 Hrs.**

Unit 1: Demonstrate the use of scale. **5 Hrs.**

Unit 2: Build the following: **10 Hrs.**

3.2. Build scaled walls from thermcol.
3.3. Build scaled walls from formboard/sunboard
3.4. Build scaled walls from montboard.

Unit 3: Build the following: **15 Hrs.**

3.1. Build scaled tv unit.
3.2. Build scaled sofa.
3.3. Build scaled bed.
3.4. Build scaled wardrobe.
3.5. Build scaled dressing unit.
3.6. Build scaled kitchen rack.

Unit 4: Work with photoshop: **15 Hrs.**

4.1. Open new file, crop, select, copy/paste, scale, save.
4.2. Demonstrate the development of scaled model using seamless texture of tiles.
4.3. Demonstrate the development of scaled model using seamless texture of wooden flooring.
4.4. Demonstrate the development of scaled model using seamless texture of brick.
4.5. Demonstrate the development of scaled model using seamless texture of marble/granite.
4.6. Demonstrate the development of scaled model using seamless texture of texture paint.

Unit 5: Demonstrate the development of scaled model of: **15 Hrs.**

5.1 Book.
5.2 Magzine.
5.3 Flower vase.
5.4 Sink.
5.5 Basin.
5.6 Water closet.

References:

1. Pace, Anthony (2004). "Tarxien". In Daniel Cilia (ed.). Malta before History – The World's Oldest Free Standing Stone Architecture. Miranda Publishers. ISBN 978-9990985085.
2. "What is Architectural Visualisation?". Flying 3D. Retrieved 18 June 2015.
3. "What is Accurate Visual Representation?". Flying 3D. Retrieved 18 June 2015.
4. Ian Gibson; Thomas Kvan; Ling Wai Ming (2002). "Rapid prototyping for architectural models". Rapid Prototyping Journal. 8 (2): 91–95. doi:10.1108/13552540210420961.
5. http://www.ensba.fr/ow2/catzarts/rechcroisee.xsp?f=Ensemble&v=&f=Auteur_field&v=Rosa%2C+Agostino&e=
6. http://www.ensba.fr/ow2/catzarts/rechcroisee.xsp?f=Ensemble&v=&f=Auteur_field&v=Lucangeli%2C+Carlo&e==
7. http://www.ensba.fr/ow2/catzarts/rechcroisee.xsp?f=Ensemble&v=&f=Auteur_field&v=Pelet%2C+Auguste&e==
8. http://www.museenkoeln.de/archaeologische-zone/default.asp

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	Scale	8	10
2	Wall	12	15
3	Furniture	20	25
4	Flooring and texture in photoshop using seamless textures	25	35
5	Props or accessories for model	25	35
	Total	**90**	**120**

Basic Design
HS1203ID

Year: I **Total: 6 hours/week**
Semester: II **Lecture: 2 hours/week**
Practical: 4 hours/week

Course Description
This course consists of units which are basically necessary to develop design ideas and helpful for understanding as well as practicing designs in the given principles.

Course Objectives
On completion of this course, students will be able to:

- Demonstrate the basic design elements and principle with its use.
- Apply the elements of design.
- Apply the principle of design.

Course Contents
Theory

Unit 1: Element of design **20 Hrs.**

1.1 Point
- 1.1.1 Introduction
- 1.1.2 Types
- 1.1.3 Uses

1.2 Line
- 1.2.1 Introduction
- 1.2.2 Use
- 1.2.3 Type
  - 1.2.3.1 Horizontal line
  - 1.2.3.2 Vertical line
  - 1.2.3.3 Diagonal line
  - 1.2.3.4 Curve

1.3 Shape
- 1.3.1 Introduction
- 1.3.2 Use
- 1.3.3 Type
  - 1.3.3.1 Square
  - 1.3.3.2 Rectangle
  - 1.3.3.3 Circle
  - 1.3.3.4 Triangle

1.4 Volume
- 1.4.1 Introduction
- 1.4.2 Use
- 1.4.3 Type
  - 1.4.3.1 cube
  - 1.4.3.2 cuboid
  - 1.4.3.3 pyramid
  - 1.4.3.4 cone
  - 1.4.3.5 cylinder

1.5 Pattern
- 1.5.1 Introduction

1.5.2 Types
1.5.3 Uses

1.6 Texture
1.6.1 Introduction
1.6.2 Types
1.6.3 Uses

1.7 Color
1.7.1 Introduction
1.7.2 Uses
1.7.3 Type
1.7.3.1 Color wheel
1.7.3.2 tints
1.7.3.3 shades
1.7.3.4 color pshycology

Unit 2: Principle of design **10 Hrs.**

1.1 Repetition/ Rhythm
1.2 Balance
1.3 Emphasis/ focal point
1.4 Contrast
1.5 Scale and proportion
1.6 Unity and harmony

Practical: **60 Hrs.**

Perform the following:

Unit1: Draw a composititon using: **15 Hrs.**

1.1 Only point.
1.2 Only horizontal line.
1.3 Only vertical line.
1.4 Only curve.

Unit 2: Draw the following: **30 Hrs.**

2.1 Square
2.2 Rectangle
2.3 Circle: ball
2.4 Triangle
2.5 Cube
2.6 Cuboid
2.7 Pyramid
2.8 Cone
2.9 Cylinder
2.10 Pattern
2.11 Collect example of texture.
2.12 Create a 12-part color wheel.
2.13 Create 10 step tints of any color.
2.14 Create 10 step shades of any color.

Unit 3: Create example of: **15 Hrs.**

3.1. Repetition.

3.2. Balance.
3.3. Emphasis/focal point.
3.4. Contrast.
3.5. Scale and proportion.
3.6. nity and harm

Reference:

1. https://www.uxpin.com/studio/blog/basic-elements-design/
2. Wong, W., (1993). Principles of Form and Design. New York: Van
3. Aksel, E., Basic Art Decisions

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	**Element of design**	65	75
	point		
	line		
	shape		
	volume		
	pattern		
	Texture		
	Colour		
2	**Principle of design**	**25**	**45**
	Total	**90**	**120**

Visual Art I
HS1204 ID

Year: I **Total: 6 hours /week**
Semester: II **Lecture: 2 hours/week**
Practical: 4 hours/week

Course description:

This course is designed to equip the students with knowledge and skills of free hand sketching and compositions through rendering using pen, pencil and colors.

Course objectives:

After the completion of this course students will be able to perform following aspects:

- Illustrate freehand sketching and compositions.
- Portray free hand lines, basic shapes using pen, pencil and colors.
- Sketch different compositions with rendering usingpen, pencil and colors.

Course Contents

Theory

Unit 1. Free Hand sketching **10 Hrs.**
1.1 Introduction
1.2 Importance
1.3 Types
1.4 Application
1.5 Materials used for free hand sketching

Unit 2. Geometrical Form **10 Hrs.**
2.1. Introduction
2.2. Types
2.3. Importance
2.4. Composition
2.5. Application

Unit 3. Shading Techniques **10 Hrs.**
3.1. Introduction
3.2. Types
3.3. Importance
3.4. Application

Practical: **60 Hrs.**

Unit 1. Shading Techniques **25 Hrs.**
1.1 Draw a Tonal chart using pencils (4H to 6B).
1.2 Apply the shading technique:
1.2.1 Stippling
1.2.2 Cross hatching
1.2.3 Contour hatching
1.2.4 Tickhatching
1.2.5 Woven hatching

1.2.6 Parallel hatching
1.2.7 Scribbling hatching

Unit 2. Freehand Sketching **35 Hrs.**

2.1. Draw geometrical 2D forms of - Circle, Square, Rectangle, Triangle, and Hexagon.
2.2. Draw geometrical 3D forms of - Sphere, Cube, Cuboids, Pyramid, and Prism.
2.3. Draw a composition of geometrical forms of - Circle, Square, Rectangle, Triangle, and Hexagon.
2.4. Draw still life objects.

References:

1. Easy to Draw – Still life, Adarsh Enterprises, New Delhi, India
2. Easy to Draw – Landscapes, Adarsh Enterprises, New Delhi, India
3. Easy to Draw –Wonders of the world and monuments, Adarsh Enterprises, New Delhi, India
4. The essentials of Drawing – Peter Gray, Arcturus Publishing, London, UK
5. Drawing for Pleasure – Valerie C. Douet, Search Press, Kent, UK
6. Quick and clever Drawing – Michael Sanders, David & Charles, UK
7. Country Landscapes, Terry Harrison, Search Press, Kent, UK
8. Perspective, MilindMulick, Jyotsna Prakashan, Pune,India

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	**Shading Techniques**	35	45
2	**Free Hand sketching**	45	55
3	**Geometrical Form**	10	20
	Total	**90**	**120**

Computer Application
(EG1211CT)

Year: I **Total: 4 hours /week**
Semester: II **Lecture: 2 hours/week**
Tutorial: hour/week
Practical: hours/week
Lab: 2 hours/week

Course description:
This course deals with the history of computer development, hardware components, Systems software, Application packages, Utility software, Computer networks and Internet. Students will learn classifications of computers, its architecture and software application installations, Peripheral devices installation, computer networks, internet and their use in various purposes.

Course objectives:
On completion of this course the students will be able to:
1. Explain the basic architecture of Computer;
2. Identify major components of computer and their role;
3. Be familiar with the different Operating Systems like MS-DOS, Windows etc.;
4. Use the different Software applications;
5. Apply the basic networking concept; and
6. Apply internet for different purposes.

Course Contents:

Theory

Unit 1. Introduction to Computers: **2 Hrs.**
1.1 History of computers
1.2 Generation of computer
1.3 Types of computer
1.4 Computer hardware and software

Unit 2. Hardware Components: **6 Hrs.**
2.1 Major blocks of a digital computer
2.2 Input devices: keyboard, mouse, joystick, scanner, light pen etc.
2.3 Output devices: monitor, printer, plotter, speaker etc.
2.4 Central Processing Unit
2.5 Memory Unit
- 2.5.1 Primary Memory (RAM and ROM)
- 2.5.2 Secondary Memory
  - Magnetic storage like floppy disk, hard disk, magnetic tape etc.
  - Optical storage like CD, DVD etc
  - Solid state storage like Pen drive, flash memory card etc.
- 2.5.3 Cache Memory

Unit 3. System Software: **6 Hrs.**
3.1 Importance of Operating Systems (OS)
3.2 Types of Operating System
3.3 Functions of Operating System
- 3.3.1 Memory management
- 3.3.2 Device management

3.3.3 File management
3.3.4 Processor management
3.3.5 Security

3.4 MS-DOS
3.4.1 System files: io.sys, msdos.sys, command.com, config.sys, autoexec.bat
3.4.2 MS-DOS internal and external commands

3.5 Windows Operating System
3.5.1 Graphical User Interface and windows environment, file/folder management

3.6 Linux: GNU open source operating system

3.7 Device driver

Unit 4. Application Packages: 7 Hrs.

4.1 Word Processing Software: Microsoft Word

4.2 Spreadsheet Software: Microsoft Excel
- Entering data
- Using formula
- Basic calculations
- Financial calculations
- Charts

4.3 Presentation Software: Microsoft PowerPoint

4.4 Concept of Database management system

4.5 Database management package: Microsoft Access

Unit 5. Utility Programs: 2 Hrs.

5.1 Computer virus and its removal (antivirus programs)

5.2 File management and backup tools

Unit 6. Networks and Internet: 7 Hrs.

6.1 Introduction and advantages of computer networks

6.2 LAN, MAN and WAN

6.3 LAN Topologies: Bus, Ring, Star, Mesh, Tree and Hybrid

6.4 Transmission media: Guided and Unguided media

6.5 Network components: Hub, Switch, NIC, Router, Bridge etc.

6.6 Network Architecture: Peer to peer and Client-server network

6.7 Hardware and file sharing

6.8 Email/Internet
- World Wide Web (WWW)
- ISP
- Search Engines
- Web browsers: Internet Explorer, Netscape Navigator, Mozilla Firefox etc.,
- Webpage and Website
- Email

Practical 30 Hrs.

Unit 1: Components of computer 10 Hrs.

1.1 Identify major components of computer.

1.2 Familiarize with keyboard and mouse.

1.3 Identify Internal and External DOS commands

1.4 Apply Windows Graphical User Interface

1.5 Manage file/folder

Unit 2: Microsoft Word **10 Hrs.**

a. Edit text
b. Format document
c. Create tables
d. Create graphics and word art

Unit 3: Microsoft Excel **15 Hrs.**

a. Edit worksheet
b. Format and manipulate data
c. Analyze data (use of functions for calculation)
d. Present charts/data
e. Import/Export data

Unit 4: Microsoft PowerPoint **10 Hrs.**

a. Create slides
b. Design and format slides
c. Add animation and control

Unit 5: Microsoft Access **10 Hrs.**

a. Create and manipulate data tables
b. Make Query
c. Prepare Form/Report
d. Use Internet/Email

Unit 6. Project Work: **5 Hrs.**

The students will be assigned (individually or in group) a project work based on Microsoft Excel/Microsoft Access. The students are required to prepare a short report in MS Word and prepare a short presentation in Power Point.

References

1. Rajaraman, "*Fundamentals of Computers*", Prentice-Hall of India
2. B Ram, "*Computer Fundamentals*", Willey Eastern Publishers
3. S Saxena, "*A First Course in Computers",* Vikash Publishing
4. Winn Rosch, "Harware Bible"
5. Noel Kalicharan, "Introduction to computer Studies", Cambridge Low Price Edition
6. P.K Sinha, "Computer Fundamentals"

Evaluation Scheme
Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	Computer	4	6
2	Hardware Components	8	12
3	System Software	8	12
4	Application Packages	20	25
5	Utility Programs	10	15
6	Networks and Internet	10	10
	Total	**60**	**80**

Second Year/ First Semester

Design Studio I
HS2101ID

Year: II **Total: 6 hours/week**
Semester: I **Lecture: 2 hours/week**
Practical: 4 hours/week

Course Description:
This course aims to provide visual communication with the interior design process and to design projects in small scale environments.

Course objective:
After completion of this course, students will be able to:

- Introduce design theory.
- Apply basic application in room.
- Describe the Principles of design.
- Describe the Elements of design.

Course contents:

Theory: **30 Hrs.**

Unit 1: Principles of design: **14 Hrs.**

1.1 Balance
1.2 Scales and proportion
1.3 Rhythm
1.4 Emphasis/focal point
1.5 Contrast
1.6 Unity and Harmony

Unit 2: Elements of design: **16 Hrs.**

2.1 Point
2.2 Line
2.3 Plane
2.4 Space
2.5 Volume
2.6 Solid
2.7 Pattern
2.8 Texture
2.9 Light
2.10 From
2.11 Shape
2.12 Color

Practical: **60 Hrs.**

Unit 1: Principles of design: **20 Hrs.**

1.1 Balance 4 Hrs.
- 1.1.1 Collect the reference pictures of difference types of balance.
- 1.1.2 Prepare different types of balance in drawing sheet.
- 1.1.3 Apply the balance in a room.

1.2 Scales and proportion 4 Hrs.
- 1.2.1 Collect the reference pictures of difference type of scale and proportion
- 1.2.2 Prepare different types of Scales and proportion in drawing sheet.
- 1.2.3 Apply the Scales and proportion in a room

1.3 Rhythm 3 Hrs.
- 1.3.1 Collect the reference pictures of difference types of rhythm.
- 1.3.2 Prepare different types of rhythm in drawing sheet.
- 1.3.3 Apply the rhythm in a room

1.4 Emphasis/focal point 3 Hrs.
- 1.4.1 Collect the reference pictures of difference types of emphasis/focal point.
- 1.4.2 Prepare different types of emphasis/focal point in drawing sheet.
- 1.4.3 Apply the emphasis/focal point in a room

1.5 Contrast 3 Hrs.
- 1.5.1 Collect the reference pictures of difference types of contrast.
- 1.5.2 Prepare different types of contrast in drawing sheet.
- 1.5.3 Apply the contrast in a room

1.6 Unity and Harmony 3 Hrs.
- 1.6.1 Collect the reference pictures of difference types of unity and harmony.
- 1.6.2 Prepare different types of unity and harmony e in drawing sheet.
- 1.6.3 Apply the unity and harmony in a room

Unit 2: Elements of design: 36 Hrs.

2.1 Point 3 Hrs.
- 2.1.1 Collect the reference pictures of different types of points.
- 2.1.2 Compose the objects by using points.

2.2 Line 3 Hrs.
- 2.2.1 Collect the reference pictures of different types of lines.
- 2.2.2 Compose the objects by using lines.

2.3 Plane 3 Hrs.
- 2.3.1 Collect the reference pictures of different types of plane.
- 2.3.2 Compose the objects by using Plane.

2.4 Space 3 Hrs.
- 2.4.1 Collect the reference pictures of different types of space.
- 2.4.2 Compose the objects by using space

2.5 Volume 3 Hrs.
- 2.5.1 Collect the reference pictures of different types Volume.
- 2.5.2 Compose the objects by using Volume.

2.6 Solid 3 Hrs.
- 2.6.1 Collect the reference pictures of different types of Solid.
- 2.6.2 Compose the objects by using Solid

2.7 Pattern 3 Hrs.
- 2.7.1 Collect the reference pictures of different types of patterns.
- 2.7.2 Compose the objects by using pattern.

2.8 Texture 3 Hrs.
- 2.8.1 Collect the reference pictures of different types of texture.
- 2.8.2 Compose the objects by using texture.

2.9 Light 3 Hrs.
- 2.9.1 Collect the reference pictures of different types of light.
- 2.9.2 Compose the objects by using light.

2.10 From 3 Hrs.

2.10.1 Collect the reference pictures of different types of form.
2.10.2 Compose the objects by using form.

2.11 Shape 3 Hrs.
2.11.1 Collect the reference pictures of different types of shape.
2.11.2 Compose the objects by using shape.

2.12 Color 3 Hrs.
2.12.1 Collect the reference pictures of different types of color.
2.12.2 Prepare objects by using color shade.
2.12.3 Apply the color in a room

Unit 3: Assignment:

3.1 Prepare a portfolio and conduct presentation of units-1and 2. 4 Hrs.

Reference:

1. Ching,Francis:Architectrue:fome,spaceandorder:2nd edition, Van Nostrand Reinhold
2. J.De Chiara, Panero, Zelink: Time Saver Standards for interior design and space planning
3. Karla J. nelson and David A. Tayler: Interiors and introduction:3rd edition, Mc Graw Hill
4. Helene Levenson: Creating an interior: Prentice Hall, Englewood Cliffs, New Jersey

Evaluation Scheme
Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1.	Principles of design	34	40
2.	Elements of design	56	80
	Total	**90**	**120**

Anthropometrics
HS2102ID

Year: II **Total: 6 hours/week**
Semester: II **Lecture: 2 hours/week**
Practical: 4 hours/week

Course Description
This course consists a study of human body measurements on a comparative basis to determine differences in races, individuals, and related issue. Its importance in design process/ building design.

Course Objective:
After the completion of this course students will be able to:

- Describe the human dimension and its relationship to the design process.
- Develop suitable designs.
- Maintain accessibility and easy movability around the building.
- Analyze anthropometry utilize in building design.
- Measure human figure and their movements in interior space.

Course Contents

Theory

Unit 1 Anthropometrics/Human Dimension **3 Hrs.**

1.1 Introduction
1.2 History
1.3 Scope
1.4 Importance
1.5 Application

Unit 2 Factors influencing Human Anthropometry **2 Hrs.**

1.1 Gender
1.2 Age
1.3 Ethnic Origin
1.4 Time/ Generation

Unit 3 Anthropometric data **10 Hrs.**

3.1 Introduction
3.2 Types of data
  3.2.1 Structural (Static) Anthropometry
  3.2.2 Functional (Dynamic) Anthropometry
3.3 Procedures for taking data: Measurement Tapes, Scales, Calipers, Anthropometer.
3.4 Sources of data:
  3.4.1 Anatomical Limits to movement
  3.4.2 Limits of reach
  3.4.3 Static Body Dimensions
  3.4.4 Static Force Capabilities
  3.4.5 Endurance Capabilities

Unit 4 Interior Space/ Basic Design Reference Standards **15 Hrs.**

1.1 Introduction
1.2 Types of spaces
  1.2.1 Residential Spaces

1.2.1.1 Living spaces
1.2.1.2 Dining spaces
1.2.1.3 Sleeping spaces
1.2.1.4 Cooking spaces
1.2.1.5 Bathroom

1.2.2 Office Spaces
1.2.2.1 Private office
1.2.2.2 General Office
1.2.2.3 Reception Spaces
1.2.2.4 Conference rooms

1.2.3 Eating and Drinking Spaces
1.2.3.1 Bars
1.2.3.2 Food Counters
1.2.3.3 Dining Spaces

1.2.4 Health care Spaces
1.2.4.1 Medical Treatment Rooms
1.2.4.2 Dental Treatment Rooms
1.2.4.3 Hospital Rooms

1.2.5 Leisure and Recreational Spaces
1.2.5.1 Exercise Areas
1.2.5.2 Sports and Games
1.2.5.3 Work and Craft Centers

1.2.6 Mercantile Spaces

1.2.7 Public Spaces

Practical:

Perform the following practical tasks:

1. Measure the Human dimension based on Anthropometrical Data of the following.10 Hrs.
   - 1.1 Children
   - 1.2 Adult
2. Draw the following: 25 Hrs.
   - 2.1 Sheet no.1: The dimension of human figure based on Anthropometric Data.
   - 2.2 Sheet no.2: The dimension of human figure in standing position.
   - 2.3 Sheet no.3: The dimension of human figure in sitting position.
   - 2.4 Sheet no.4: The Human Dimension of different age group in different functional movement.
3. Draw the Human dimension with furniture sizes and clearances required in given rooms with anthropometric dimensions: 25 Hrs.
   - 3.1 Sheet no.6: Living Space
   - 3.2 Sheet no.7: Bedroom Space
   - 3.3 Sheet no.8: Kitchen space
   - 3.4 Sheet no.9: Dining Space
   - 3.5 Sheet no.10: Bathrooms
   - 3.6 Sheetno.11: Office space
   - 3.7 Sheet no.12: Bars/ Food Counters
   - 3.8 Sheet no.13: Health care Space
   - 3.9 Sheet no.14: Exercise Area

References

- Time Saver Standards for Interior Design and Space planning – Joseph De Chiara, Julius Panero& Martin Zelnik
- Human Dimension and Interior Space- Julius Panero& Martin Zelnik

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	Anthropometrics/Human Dimension	13	15
2	Factors influencing Human Anthropometry	27	30
3	Anthropometric data	10	15
4	Interior Space/ Basic Design Reference Standards	40	60
	Total	**90**	**120**

Building Materials
EG 2107 CE

Year: II **Total: 6 hours/week**
Semester: II **Lecture: 4 hours/week**
Practical: 2 hours/week

Course Description

This Course is designed to convey a very good understanding of the building materials as well as its relationship with construction systems. Assignment in this course includes an analysis of a building materials and use of them in construction system. This helps students to gain further practical knowledge about these building materials, their types, characteristics and installations methods.

Course Objectives

On completion of this course the students will be enabled to:

- Illustrate interdependent relationship between construction system and materials.
- Selectappropriate materials for specific applications.
- Procure materials properly.
- Organize materials without damaging their quality.
- Identifyqualitymaterials.

Course Contents

Theory

1. Timber **10 Hrs.**

1.1 Introduction
1.2 Uses
1.3 Its Types
  1.3.1 Hard Wood
  1.3.2 Soft Wood
1.4 Structure and Defects
1.5 Seasoning of Timber
1.6 Preservation of timber
1.7 Preparation of Timber for Treatment
1.8 Types of Wood for Interiors Work:
  1.8.1 Birch: Introduction, uses,
  1.8.2 Oak: Introduction, uses,
  1.8.3 Walnut: Introduction, uses,
  1.8.4 Teak: Introduction, uses,
  1.8.5 Pine: Introduction, uses,
  1.8.6 Bamboo: Introduction, uses,
  1.8.7 Cheery: Introduction, uses,
  1.8.8 Mahogany: Introduction, uses,
  1.8.9 Balsa: Introduction, uses,
  1.8.10 Bass wood: Introduction, uses,
  1.8.11 Rose wood: Introduction, uses,
1.9 Conversion of Timber
1.10 Types of Boards

1.10.1 Plywood
1.10.2 Laminated Boards

2. Brick **10 Hrs.**

2.1 Introduction
2.2 Uses
2.3 Characteristics of good bricks
2.4 Classification of good bricks
2.5 Brick making process
2.6 Test on bricks for various properties as per Standard
2.7 Types of brick bonds
2.7.1. Stretcher Bond
2.7.2. Header Bond
2.7.3. English Bond
2.7.4. Flemish Bond
2.7.5. Facing Bond
2.7.6. English Cross Bond
2.7.7. Brick on edge Bond
2.7.8. Dutch Bond
2.7.9. Raking Bond
2.7.10. Zigzag Bond
2.7.11. Garden Wall Bond

3. Stones **8 Hrs.**

3.1 Introduction
3.2 Uses
3.3 Types
3.1.1 Granite
3.1.2 Basalt
3.1.3 Sand Stone
3.1.4 Lime stone
3.1.5 Marble
3.1.6 Slate
3.1.7 Quartzite
3.4 Selection of stone for different purposes
3.5 Seasoning, dressing and preservation of stone
3.6 Sand and Aggregates

4. Metal: Ferrous & Non-Ferrous **5 Hrs.**

4.1 Introduction
4.2 Uses
4.3 Metals used in building applications
4.4 Properties of metal
4.5 Types of Metal

5. Concrete **6 Hrs.**

5.1. Introduction
5.2. Uses
5.3. Constituents of Concrete
5.3.1. Cement
5.3.2. Aggregate
5.3.3. Sand
5.3.4. Mixed design of concrete
5.4. The workability of concrete

5.5. Factors effecting strength
5.6. Properties of concrete
5.7. Concrete curing
5.8. Test for concrete

6. Lime and Cement **6 Hrs.**

6.1. Introduction
6.2. Uses
6.3. Types and uses of lime
6.4. Types of cement
6.5. Constituents of Portland Cement
6.6. Properties of Cement and cement mortar
6.7. Water Cement Ratio
6.8. Manufacturing process of cement

7. Miscellaneous Materials **15 Hrs.**

3.2 Introduction
3.3 Paints and Varnishes
3.4 Glass
3.5 Fabric and Upholstery
3.6 Stucco and plaster
3.7 Plastics
3.8 Tiles
3.9 PVC
3.10 Fiber glass

Practical: **30 Hrs.**

1. Conduct market study, collect the data, prepare report and presentation on the use/application following any three types of wood for interiors work:(Birch, Oak, Walnut, Teak, Pine, Bamboo, Cheery, Mahogany, Balsa, Bass wood, Rose wood) 10 Hrs.
2. Observe and prepare report on following types of brick bonding. 5 Hrs.
   - 2.1 Stretcher Bond
   - 2.2 Header Bond
   - 2.3 English Bond
   - 2.4 Flemish Bond
   - 2.5 Facing Bond
   - 2.6 English Cross Bond
   - 2.7 Brick on edge Bond
   - 2.8 Dutch Bond
   - 2.9 Raking Bond
   - 2.10 Zigzag Bond
   - 2.11 Garden Wall Bond
3. Prepare report and conduct presentation on materials used in residential building. 15 Hrs.
   - 3.1 Conduct a case study on residence building.
   - 3.2 Collect the pictures of building selected for case study.
   - 3.3 Identify materials used in the following interiors spacesof residence buildings:
     - 3.3.1 Living room.
     - 3.3.2 Kitchen and dining.
     - 3.3.3 Bedrooms.
     - 3.3.4 Restrooms.
     - 3.3.5 Lobby and staircase.

References

1. COLCHESTER, C. (1991), The New Textiles Trends & Traditions. Thames & Hudson.
2. Sloan, A. (1988), The Complete Book of Decorative Paint Techniques, Ebury Press & London.
3. Larsen, J. L, (1989), Furnishing Fabrics, Thames 81 Hudson, London.
4. Riggs, J.Rosemary (1989), Materials & Components of Interior Design, Prentice Hall, New Jersey.
5. Singh G., (1979), Building Materials, Standard Publishers Distributors, Delhi.
6. Pegler, M. (1990), Home Furnishina& Merchandising & Store Design, Retail Reporting Group, New York.

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1.	Timber	20	30
2.	Brick/stone/metal	25	30
3.	Concrete/lime/cement	15	20
4.	Miscellaneous Materials	30	40
	Total	**90**	**120**

Building Services I
EG 2108 CE

Year: II **Total: 8 hrs/week**
Semester: I **Lecture: 4 hrs/week**
Practical: 4 hrs/week

Course Description

This module focuses on building services such as Water Supply System, House Drainage System and Fire safety system. The range of information required and the graphical techniques used to convey such information; a very good understanding of the way building services are used in construction and the understanding of its details. Assignment in this module enhances practical knowledge about these building services, their types and installations methods.

Course Objectives

After Completion of this course, students will be able to:

- Describe various systems of building services.
- Prepare a layout of water distribution system.
- Corelate between building services and the building users/occupants.
- Develop an appropriate detail drawing of these building services.

Course Contents

Theory **60 Hrs.**

Unit 1. Water Supply System **24 Hrs.**

1.1 Introduction
1.2 Objective
1.3 Water Sources
1.4 Water cycle
1.5 Types of sources
  1.5.1 Rain Water
  1.5.2 Ground water sources
  1.5.3 Natural Surface Water
1.6 Rain water harvesting
1.7 Water Treatment and Purification
1.8 Requirements of Good Distribution System
1.9 Layouts of Distribution Network
1.10 Methods of water Distribution
  1.10.1 Gravity System
  1.10.2 Pumping System
  1.10.3 Combined Gravity and Pumping System
1.11 Estimation of Water Requirement
1.12 Service Connection
1.13 Valves
1.14 Types of Valves
1.15 Storage tank
1.16 Types of Pipes used for water Supply
  1.16.1 Cast Iron Pipes
  1.16.2 Steel Pipes

1.16.3 Galvanized Iron Pipes
1.16.4 Copper Pipes
1.16.5 PVC Pipes
1.16.6 Concrete Pipes
1.16.7 Polypropylene (PPR) Pipes

1.17 Water Supply System
1.17.1 Parts of Water supply system
1.17.2 Cold Water Supply System
1.17.3 Hot Water Supply System

Unit 2. House Drainage System **16 Hrs.**

2.1. Introduction
2.2. Definition of terms in Drainage System
2.3. Principles of house Drainage
2.4. Components of House drainage system
2.4.1 Traps
2.4.1.1 Requirements of good trap
2.4.1.2 Classification of Traps
2.4.2 Pipes and its size
2.4.3 Sanitary Fittings
2.4.3.1 Wash basin
2.4.3.2 Sinks
2.4.3.3 Bath tubs
2.4.3.4 Water Closets
2.4.3.5 Urinals
2.4.3.6 Flushing Cisterns
2.5. System of Plumbing for House Drainage
2.5.1 Single Stack System
2.5.2 One pipe system
2.5.3 Single stack partially ventilated system
2.5.4 Two pipe system
2.6. Sewage disposal from apartments and housing
2.7. Septic tank, soak pit design and construction

Unit 3. Fire Safety System **20 Hrs.**

3.1 Introduction
3.2 Causes of Fire
3.3 Fire Hazards
3.4 Fire Load
3.5 Grading of buildings according to fire resistance
3.6 Passive Fire Fighting System
3.6.1 Types of firefighting system
3.6.1.1 Emergency Exit
3.6.1.2 Compartmentation
3.6.1.3 Construction material
3.7 Active Fire Fighting System
3.8 Portable Active Fire Fighting System
3.8.1 Fire Extinguisher
3.8.2 Fire Blanket
3.9 Fixed Active Fire Fighting System

3.9.1 Fire Hydrant
3.9.2 Sprinkler System
3.9.3 Fire Alarm System
3.9.4 Smoke/ Heat Detector

3.10 Fire resisting properties of common building materials

3.11 Fire resistant construction

Practical: 60 Hrs.

1. Water supply system on Residential Building 20 Hrs.

1.1 Conduct market study, collect data, prepare report and conduct presentation on water supply fitting and fixtures available in Nepal.

1.2 Sheet No. 1: Draw typical plan and section of restroom to show Water supply layout (with dimension, scale of drawing):
- 1.2.1 Indicate the location of the water tap, fitting e.g., shower, basin etc.
- 1.2.2 Illustrate the vertical and horizontal piping connection with specification of the piping
- 1.2.3 Indicate Direction of Flow.
- 1.2.4 Use proper symbols of the services.

1.3 Sheet No. 2: Draw plan and section of ground floor to show Water supply layout (with room names, dimension, scale of drawing):
- 1.3.1 Indicate the location of the water meter, water tank, water tap, fitting e.g. Kitchen tap, shower, basin etc…
- 1.3.2 Illustrate the vertical and horizontal piping connection with specification of the piping
- 1.3.3 Indicate Direction of Flow.
- 1.3.4 Use proper symbols of the services.

1.4 Sheet No. 3: Draw plan and section of first floor to show Water supply layout (with room names, dimension, and scale of drawing):
- 1.4.1 Indicate the location of the water meter, water tank, water tap, fitting e.g. Kitchen tap, shower, basin etc.
- 1.4.2 Illustrate the vertical and horizontal piping connection with specification of the piping
- 1.4.3 Indicate Direction of Flow.
- 1.4.4 Use proper symbols of the services.

1.5 Sheet No. 4: Draw plan and section of second floor to show Water supply layout (with room names, dimension, scale of drawing):
- 1.5.1 Indicate location of the water meter, water tank, water tap, fitting e.g. Kitchen tap, shower, basin etc.
- 1.5.2 Illustrate the vertical and horizontal piping connection with specification of the piping
- 1.5.3 Indicate Direction of Flow
- 1.5.4 Use proper symbols of the services.

2. House Drainage System 20 Hrs.

2.1 Conduct market study, collect data and prepare report and presentation on Drainage fitting and fixtures available in Nepal.

2.2 Sheet No. 5: Draw typical plan and section of restroom to show Drainage layout (with dimension, scale of drawing)
- 2.2.1 Indicate the location of the water closet, floor trap)

2.2.2 Illustrate the vertical and horizontal piping connection with specification of the piping
2.2.3 Indicate Direction of Flow
2.2.4 Use proper symbols of the services.

2.3 Sheet No.6: Draw plan and section of ground floor to show Drainage layout (with room names, dimension, scale of drawing)
2.3.1 Indicate the location of the sewer manhole, waste discharge outlet e.g. floor trap and from fittings e.g. Kitchen tap, w.c., basin, etc.
2.3.2 Illustrate the vertical and horizontal piping connection with specification of the piping
2.3.3 Indicate Direction of Flow
2.3.4 Proper symbols of the services.

2.4 Sheet No.7: Draw plan and section of first floor to show Drainage layout (with room names, dimension, scale of drawing)
2.4.1 Indicate location of the waste discharge outlet e.g. floor trap and from fittings e.g. Kitchen tap, w.c., basin, etc.
2.4.2 Illustrate the vertical and horizontal piping connection with specification of the piping
2.4.3 Indicate Direction of Flow
2.4.4 Use proper symbols of the services.

2.5 Sheet No. 8: Draw plan and section of second floor to show Drainage layout (with room names, dimension, scale of drawing)
2.5.1 Indicate the location of the waste discharge outlet e.g. floor trap and from fittings e.g. Kitchen tap, w.c., basin, etc.
2.5.2 Illustrate the vertical and horizontal piping connection with specification of the piping
2.5.3 Indicate Direction of Flow
2.5.4 Use proper symbols of the services.

3. Fire Safety System 20 Hrs.

3.1 Conduct market study, collect data and prepare report and presentation on Fire Safety system available in Nepal.

3.2 Prepare report on Passive fire system in Residential Building.

3.3 Sheet No.9: Draw plan of ground floor to show Fire safety system layout (with room names, dimension, scale of drawing)
3.3.1 Indicate the location of the fire extinguisher, emergency exit, smoke detector etc….
3.3.2 Use proper symbols of the services.

3.4 Sheet No. 10: Draw plan of first floor to show Fire safety system layout (with room names, dimension, scale of drawing):
3.4.1 Indicate location of the fire extinguisher, emergency exit, smoke detector etc.
3.4.2 Use proper symbols of the services.

3.5 Sheet No. 11: Draw plan of second floor to show Fire safety system layout (with room names, dimension, scale of drawing)
3.5.1 Indicate location of the fire extinguisher, emergency exit, smoke detector etc….
3.5.2 Use proper symbols of the services.

3.6 Sheet No.12: Draw a floor plan to show sprinkler layout.

3.7 Sheet No.13: Draw a section to show sprinkler layout.

References

1. Chudley, R., Building construction handbook
2. Building Construction B.C Purnima
3. Hammer, M.J. Water and Wastewater Technology, Englewood Cliffs, N.J., Prentice Hall, 1996
4. Fair, G.M. Water and Wastewater Engineering
5. Barnes, D. Water and Wastewater Engineering Systems (Volumes 1 and 2), Marshfield, Mass., Pitman, 1981
6. Schroeder, E.R. Water and Wastewater Treatment (Volumes 1 and 2), New York, McGraw-Hill, 1977
7. Cassels, D. Services for Housing, Sanitary Plumbing, and Drainage, London, H.M.S.O. 1974
8. Babbit, H.E. Plumbing, New York, McGraw-Hill, 1960
9. Parlour, R. Building Services, Engineering for Architects, Integral Publishing, NSW, 1994

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	Water Supply System	44	50
2	House Drainage System	36	50
3	Fire safety system	40	60
	Total	**120**	**160**

Visual Art II
HS 2103 ID

Year: II **Total: 6 hours /week**
Semester: I **Lecture: 2 hours/week**
Practical: 4 hours/week

Course description

This course is designed to equip the students with knowledge and skills of free hand sketching and compositions through rendering using pen, pencil and colors.

Course objectives

After completion of this course, students will be able to:

1. Illustrate freehand sketching and compositions
2. Portray free hand lines, basic shapes using pen, pencil and colors.
3. Sketch different compositions with rendering using pen, pencil and colors.

Course Contents

Theory

1. Arts **10 Hrs.**
1.1 Introduction
1.2 Importance
1.3 Application
1.4 Materials and Techniques
2. Classification of Arts **20 Hrs.**
2.1 Fine art
- 2.1.1 Introduction
- 2.1.2 Importance
- 2.1.3 Application
- 2.1.4 Materials and Techniques

2.2 Modern art
- 2.2.1 Introduction
- 2.2.2 Importance
- 2.2.3 Application
- 2.2.4 Materials and Techniques

2.3 Contemporary art
- 2.3.1 Introduction
- 2.3.2 Importance
- 2.3.3 Application
- 2.3.4 Materials and Techniques

Practical

Unit 1. Free Hand Sketching **60 Hrs.**
1.1 Sketch an interior space of room of residential building. 30 Hrs.
- 1.1.1 Using charcoal pencil
- 1.1.2 Using ink pen
- 1.1.3 Using Pencil color
- 1.1.4 Using poster color

1.1.5 Using Water Color

1.2 Visit any historical place and sketch an exterior of historical Structure. 15 Hrs.
- 1.2.1 Using charcoal pencil
- 1.2.2 Using ink pen
- 1.2.3 Using Pencil color
- 1.2.4 Using Poster color
- 1.2.5 Using Water color

1.3 Visit any natural site and sketch landscaping. 15 Hrs.
- 1.3.1 Using pen
- 1.3.2 Using water color

References

1. Easy to Draw – Still life, Adarsh Enterprises, New Delhi, India
2. Easy to Draw – Landscapes, Adarsh Enterprises, New Delhi, India
3. Easy to Draw –Wonders of the world and monuments, Adarsh Enterprises, New Delhi, India
4. Country Landscapes, Terry Harrison, Search Press, Kent, UK
5. Merle Spandorfer, DeborarCurtisss, Jack Snyder M.D.: *Making ART safely, Alternative Methods and Materials in Drawing, Painting, Printmaking, Graphic Design, and Photography*, 1993, 1996.
6. Henri Dorra: *Art in Perspective, a brief history*, Harcourt Brace Jovanovich (HBJ)
7. Tom Robb, *start now to draw, draw pictures from day one,* 1995, Aurum press Limited.

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	Introductiory Visual Arts	40	55
2	Classification of Arts	35	45
3	Sketching Landscaping	15	20
	Total	**90**	**120**

Computer Aided Drafting (CAD-Basic)- I
EG 2101 AR

Year: II **Total: 6 hour /week**
Semester: II **Lecture: 2 hour/week**
Practical: 4 hours/week

Course Description:
This course intends to provide knowledge and skills on drawing basic two-dimensional drawings as geometrical shapes and curves through computer aided drafting (Auto CAD)

Course objectives:

After completion of this course students will be able to:
1. Use the functions and commands of Auto CAD program
2. Create and modifying basic two-dimensional geometrical shapes & curves.

Course Contents:

Theory

Unit 1: Auto CAD **5 Hrs.**
1.1 Introduction
1.2 Overview of a PC, peripherals input and output devices
1.3 Auto CAD interface
1.4 Auto CAD terminology

Unit 2: Starting a new drawing/opening an existing drawing **4 Hrs.**
2.1. Setting up a drawing starting from scratch using wizard
2.2. Setting up a working area through LIMITS
2.3. Setting up a working area through MVSETUP
2.4. Save/save as drawing

Unit 3: 2D coordinate systems in Auto CAD **4 Hrs.**
3.1. Specifying points on Auto CAD screen using
  3.1.1 Absolute coordinate system
  3.1.2 Relative coordinate system
  3.1.3 Polar coordinate system
3.2. Viewing objects
  3.2.1 Zooming/panning
  3.2.2 Undo, Redo, Oops
  3.3.3 Regen, Regenall

Unit 4: Drawing commands: **4 Hrs.**
4.1 Points Line construction line, multi line
4.2 Poly line, Ray, Polygon, Rectangle

Unit 5: Modify commands: **4 Hrs.**
5.1 Object selection methods
5.2 Erase, copy, mirror
5.3 Move, Rotate, offset, array, trim, break, stretch, extend,

Unit 6: Modify Commands: **5 Hrs.**
6.1 Chamfer, fillet, scale, lengthen

6.2 Direct distance entry
6.3 Object tracking, grid, ortho, polar (status bar)
6.4 Function keys.

Unit 7: Computer graphics fundamental **4 Hrs.**

7.1 Raster image/vector image
7.2 Block/wblock
7.3 Text
7.4 Dimensioning

Practical

Unit 1: Open and start new drawings: **5 Hrs.**

1.1 Auto CAD screen
1.2 Setting up new drawing
1.3 Save/save as the drawing

Unit 2: Design and draw followings:

2.1.	Draw lines using coordinate system	10 Hrs.
2.2.	Lab-1 using draw commands	15 Hrs.
2.3.	Lab -2 using modify commands	15 Hrs.
2.4.	Lab -3 draw one room building	15 Hrs.

References:

1. Alf Yarwood, Introduction to Auto CAD 2006
2. Ellen Finkelstin, Auto CAD 2000 Bible, IDG Books India (P) Ltd., 3583 Om Bhawan, 4th Floor, Netaji Subas Marg, Daryaganj, New Delhi,
3. George Omura, Mastering Auto CAD 2007 and Auto CAD LT 2007, BPB Publications, India
4. Sham Tickoo, Auto CAD 2005 for Engineers and Designers, Dreamtech Press

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	Auto CAD	5	10
2	Starting a new drawing/opening an existing drawing	9	10
3	2D coordinate systems in Auto CAD	14	20
4	Drawing commands	19	25
5	Modify commands	24	30
7	Computer graphics fundamental	19	25
	Total	**90**	**120**

Second Year/ Second Semester

Building Construction
EG 2206 CE

Year II **Total: 8 hours/week**
Semester IV **Lecture: 4 hours/week**
Practical: 4 hours/week

Course Description:
This course is designed to convey a very good understanding of the different building components. The course focuses on the importance of detail drawings to familiarize with different building components such as windows, doors, roofs, ceilings, flooring, wall & partition.

Course Objectives:
On completion of this course the students will be enabled to:

- Familiarize with good detailing practices.
- Describe the assembling process of the components through drawings.
- Develop detailing construction techniques.
- Apply creative usage of materials in the working of interior architecture projects.
- Apply building components, building drawings, sample boards and detail drawings.

Course Content
Theory: **20 Hrs.**
Unit 1: Openings in walls

1.1 **Doors:**
- 1.1.1 Introduction
- 1.1.2 Purposes
- 1.1.3 Classification of doors
  - 1.1.3.1 Classification based on arrangement of components: Battened and ledge, Battened, ledged and braced, Battened, ledged and framed, Battened, ledged, braced and frame door.
  - 1.1.3.2 Classification based on method of construction: Framed and paneled, Glazed or sash, Flush, Louvered, Wire gauged doors
  - 1.1.3.3 Classification based on working operations: Revolving, Sliding, Swings, Collapsible steel doors, rolling steel shutter.
  - 1.1.3.4 Materials used: Wood, Metal, Aluminum, UPVC, Arches

1.2 Window:
- 1.2.1 Introduction
- 1.2.2 Uses
- 1.2.3 Types of windows: Fixed, Pivoted, Double hung, Sliding, Casement, Sash, Louvered, Clerestory, Bay, Corner, Dormer, Gable, Lantern windows, Skylights, Ventilation, Combined windows and ventilators
- 1.2.4 Materials used for windows: Wood, Metal, Aluminum, UPVC, Arches
- 1.2.5 Classification of Arches:
- 1.2.6 Classification based on shape: Flat, Segmental, Semicircular, Horse shoe, Pointed or gothic, Venetian, Florentine, Relieving, Stilted, Semi-elliptical.
- 1.2.7 Classification based on number of centers:One centered, two centered,Three centered, Four centered, Five centered.
- 1.2.8 Classification based on materials and workmanship: Stone, Rubble, Ashlars, Brick, Rough, Axed or rough cut, Gauged, Concrete (Concrete blocks units and Monolithic)

1.2.9 Fixtures and fastening: Hinge, Bolt, Handles, Locks

Unit 2: Staircases **12 Hrs.**

2.1 Introduction

2.2 Technical terms of Stairs: Step, Tread, Riser, Flight, Landing, Rise, Going, Nosing, Scotia, Soffit, Line of nosing, Pitch, Strings, Newel Post, Baluster Balustrade, Hand rail, Head room, Run, Header.

2.3 Requirements of good stairs

2.4 Dimension of a step

2.5 Types of steps: Flier, Bull nose step, Round ended step, Splayed step, Commode step, Dancing step, Winder

2.6 Classification of staircase: Straight stairs, Turning Stairs, Quarter turns stairs, half turn stair (dog- legged or open well stairs or geometric half turn stairs), Three quarter turn stairs, Bifurcated stairs, Continuous stairs

2.7 Materials used for stairs: Timber, Steel, Bricks, Steel, RCC, Stair design

Unit 3: Floor **12 Hrs.**

3.1 Introduction

3.2 Properties for good floor

3.3 Types of flooring

3.3.1 Ceramic tiles Flooring: Characteristics, Advantages and Disadvantage, Usage, Installation process

3.3.2 Brick flooring: Characteristics, Advantages and Disadvantage, Usage, Installation process,

3.3.3 Linoleum Flooring, Characteristics, Advantages and Disadvantage, Usage, Installation process

3.3.4 Vinyl Flooring: Characteristics, Advantages and Disadvantage, Usage, Installation process.

3.3.5 Marble Flooring: Characteristics, Advantages and Disadvantage, Usage, Installation process

3.3.6 Mosaic Flooring: Characteristics, Advantages and Disadvantage, Usage, Installation process

3.3.7 Plain polished concrete flooring: Characteristics, Advantages and Disadvantage, Usage, Installation process

3.3.8 Flag stone flooring: Characteristics, Advantages and Disadvantage, Usage, Installation process

3.3.9 Rubber flooring: Characteristics, Advantages and Disadvantage, Usage, Installation process

3.3.10 Parquet Flooring: Characteristics, Advantages and Disadvantage, Usage, Installation process.

3.3.11 Glass Flooring: Characteristics, Advantages and Disadvantage, Usage, Installation process

3.3.12 Terrazzo Flooring: Characteristics, Advantages and Disadvantage, Usage, Installation process

Unit 4: False ceiling **8 Hrs.**

4.1 Introduction

4.2 History

4.3 Components

4.4 Advantage and Disadvantage

4.5 Requirements of false ceiling

4.6 Installation Process of false ceiling

4.7 Classification of false ceiling:

4.7.1 Based on construction:Joint less, Jointed, Open.

4.7.2 Based on styles: Exposed Beam Ceilings, Tray ceiling, Cove ceiling Vaulted ceiling, Cathedral ceiling, Coffered ceiling styles, Dome ceiling Shed ceiling styles.

Unit 5: Partition Wall **8 Hrs.**

1.1 Introduction

1.2 Advantage and disadvantage of partition wall

1.3 Requirements of a good partition wall

1.4 Types of partition wall

1.4.1 Brick partitions: Plain Brick, Plain Brick Partitions, Reinforced Brick, Brick Nogging, Clay Block, Concrete, Glass, Glass sheet Partitions.

1.4.2 Hollow Blocks: Metal lath, GI Sheet, Plaster Slab, Wood Slab Timber, Common or Stud, Trussed or braced.

1.4.3 Dry Wall: Cement Board, Gypsum Board, Green Board

Practical

Unit 1: Openings on wall **25 Hrs.**

1.1 Draw plans, elevations and sections of different types of doors:

1.1.1 **Sheet No. 1:** Drawplans, elevations and sections ofdoors based on arrangement of components (any 5):

1.1.1.1 Battened and ledge doors

1.1.1.2 Battened, ledged and braced doors

1.1.1.3 Battened, ledged and framed doors

1.1.1.4 Battened, ledged, braced and frame door

1.1.2 Sheet No. 2: Draw plans, elevations and sections ofdoors based on method of construction:

1.1.2.1 Framed and paneled doors

1.1.2.2 Glazed or sash doors

1.1.2.3 Flush doors

1.1.2.4 Louvered doors

1.1.2.5 Wire gauged doors

1.1.3 Sheet No. 3: Draw plans, elevations and sections ofdoors based on working operations

1.1.3.1 Revolving doors

1.1.3.2 Sliding doors

1.1.3.3 Swings doors

1.1.3.4 Collapsible steel doors

1.1.3.5 Rolling steel shutter doors

1.2 Draw plans, elevations and sections of different types of Windows:

1.2.1 **Sheet No. 4:** Draw plans, elevations and sections ofFixed windows, Pivoted windows, double hung windows and Sliding windows.

1.2.2 **Sheet No. 5:** Draw plans, elevations and sections of Casement windows, Sash windows, Louvered windows and Clerestory window

1.2.3 **Sheet No. 6:** Draw plans, elevations and sections of Bay windows, Corner windows, Dormer windows and Gable windows.

1.2.4 **Sheet No. 7:** Draw plans, elevations and sections of Lantern windows, Skylights, Ventilation and Combined windows and ventilators.

1.3 Draw different types of Arches.

1.3.1 **Sheet No. 8:** Draw arches based on shape (any 5):

1.3.1.1 Flat arch

1.3.1.2 Segmental arch

1.3.1.3 Semicircular arch

1.3.1.4 Horse shoe arch
1.3.1.5 Pointed or gothic arch
1.3.1.6 Venetian arch
1.3.1.7 Florentine arch
1.3.1.8 Relieving arch
1.3.1.9 Stilted arch
1.3.1.10 Semi elliptical arch

1.3.2 **Sheet No. 9:** Draw arches based on number of centers (any 3):
1.3.2.1 One centered arch
1.3.2.2 Two centered arches
1.3.2.3 Three centered arches
1.3.2.4 Four centered arches
1.3.2.5 Five centered arches

1.3.3 **Sheet No. 10:** Draw arches based on materials and workmanship (any 3):
1.3.3.1 Stone arches
- Rubble arch
- Ashlar arch

1.3.3.2 Brick arches
- Rough arch
- Axed or rough- cut arch
- Gauged arch

Unit 2: Staircases: Draw the following: **10 Hrs.**

2.1 **Sheet No. 11:** Draw plan and detail section of dog legged staircase.

2.2 **Sheet No. 12:** Drawtypes of steps: (any 5):
2.2.1 Flier
2.2.2 Bull nose step
2.2.3 Round ended step
2.2.4 Splayed step
2.2.5 Commode step
2.2.6 Dancing step
2.2.7 Winder

2.3 **Sheet No. 13:** Draw plan and elevation of different types of staircases (any 5):
2.3.1 Straight stairs
2.3.2 Turning Stairs
2.3.2.1 Quarter turns stairs
2.3.2.2 Half turn stair -open well stairs
2.3.2.3 Three quarter turn stairs
2.3.2.4 Bifurcated stairs
2.3.2.5 Continuous stairs

Unit 3: Floor **7 Hrs.**

1.1 Sheet No. 14**:** Draw section of different Types of flooring (any 5):
1.1.1 Ceramic tiles Flooring
1.1.2 Brick flooring
1.1.3 Linoleum Flooring
1.1.4 Vinyl Flooring
1.1.5 Marble Flooring
1.1.6 Mosaic Flooring

1.2 Sheet No. 15: Draw section of different Types of flooring(any 5):
1.2.1 Plain polished concrete flooring
1.2.2 Flag stone flooring

1.2.3 Rubber flooring
1.2.4 Parquet Flooring
1.2.5 Glass Flooring
1.2.6 Terrazzo Flooring

Unit 4: False ceiling **10 Hrs.**

1.1 Draw Plan, detail sections and isometric view of different types false ceiling based on construction:
1.1.1 Sheet No. 16: Draw Plan, detail sections and isometric view of Joint less ceiling.
1.1.2 Sheet No. 17: Draw Plan, detail sections and isometric view of Jointed ceiling
1.1.3 Sheet No. 18: Draw Plan, detail sections and isometric view of Open ceiling

Unit 5: Partition Wall **8 Hrs.**

1.1 Draw plan and elevation of different types of partition wall.
1.2 Sheet No. 19: Draw plan and elevation of followingpartition wall (any 3):
1.2.1 Brick partitions
1.2.2 Plain Brick Partitions
1.2.2.1 Reinforced Brick Partitions
1.2.2.2 Brick Nogging Partitions
1.2.2.3 Clay Block Partitions
1.2.2.4 Concrete Partitions
1.3 **Sheet No. 20:** Draw plan and elevation of followingpartition wall:
1.3.1 Reinforced Brick Partitions
1.3.2 Brick Nogging Partitions
1.3.3 Clay Block Partitions
1.3.4 Concrete Partitions
1.3.5 Glass Partitions
1.3.6 Glass sheet Partitions
1.3.7 Hollow Blocks
1.3.8 Metal lath Partitions
1.3.9 GI Sheet Partitions
1.4 **Sheet No. 21:** Draw plan and elevation of followingpartition wall
1.4.1 Plaster Slab Partition
1.4.2 Wood Slab Partition
1.4.3 Timber Partitions
1.4.4 Common or Stud Partitions
1.4.5 Trussed or braced Partitions

References

1. Rangwala, S.G., Building Construction, Chaortar book Stall, India
2. Punmia, B.C. and Jain Ashok k. A text book of Building Construction
3. Mckay, W.B, Building Construction Metric Vol. I/II/III/IV
4. Chudley, Building Construction Handbook
5. Ching, Francis, D.K., Building Construction Illustrated

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	Openings in walls	45	50
2	Staircases	22	30
3	Floor	19	30
4	False ceiling	18	25
5	Partition Wall	16	25
	Total	**120**	**160**

Economics
HS 2201 ID

Total: 4 hour /week
Year: II **Lecture: 4hours/week**
Semester: II **Practical: hours/week**

Course Description
This course presents an introductory, interest formula, methods of comparing alternatives, replacement and maintenance analysis, depreciation and other factors of economics.
economics andit's practical for the students.

Course Objective
After completing this course, the students will be able to:
1. Familiarize with the basics of economics
2. Conduct cost analysis to take economically sound decisions.

Course Contents
Theory

Unit 1: Introductory Economics **10 Hrs.**
1.1 Introduction
1.2 Economics in interior designing
1.3 Scope
1.4 Element of costs, Marginal cost
1.5 Marginal Revenue
1.6 Sunk cost, Opportunity cost –
1.7 Fixed and Variable Cost.
1.8 Basic Accounting principle: Concept of Debit/Credit, Cash and accrual basis of accounting.

Unit 2: Interest Formula **10 Hrs.**
2.1 Simple and Compound interest
2.2 Time value of money
2.3 Single payment compound amount factor
2.4 Single payment present worth factor
2.5 Equal payment series sinking fund factor
2.6 Equal payment series payment Present worth factor
2.7 equal payment series capital recovery factor
2.8 Uniform gradient series annual equivalent factor
2.9 Effective interest rate

Unit 3: Methods of Comparison of Alternatives **10 Hrs.**
3.1 Present worth method
3.2 Future worth method
3.3 Annual equivalent method
3.4 Rate of return method,
3.5 Concept of MARR.
3.6 Simple and Discounted Payback

Unit 4: Replacement and Maintenance Analysis **8 Hrs.**
4.1 Replacement and Maintenance analysis
4.2 Types of maintenance,
4.3 Types of replacement problem

4.4 Determination of economic life of an asset
4.5 Replacement of an asset with a new asset
4.6 Capital recovery with return
4.7 Challenger and defender.

Unit 5: Depreciation **7 Hrs.**

5.1 Introduction
5.2 Straight line method of depreciation,
5.3 Declining balance method of depreciation-
5.4 Sum of the year's digits method of depreciation

Unit 6: Evaluation of Public Alternatives **5 Hrs.**

6.1 Introduction-B/C ratio
6.2 Break even analysis

Unit 7: Risk Analysis **5 Hrs.**

7.1 Risk and uncertainties in economic decision.
7.2 Sensitivity Analysis,
7.3 Decision Tree

Unit 8: Project Management **5 Hrs.**

8.1 Introduction
8.2 Phases of Project Management
8.3 Network Construction
8.4 Critical Path Method (CPM)
8.5 Gantt Chart
8.6 Project Evaluation and Review Technique

References

1. Lipsey, R. G. and Chrystal, K A (2005) Principles of Economics, Oxford University Press, London-Delhi-Tokyo.
2. Sloman, John, (2003) Economics, Prentice Hall India, EEE series, New Delhi
3. Todaro, M P (2010) Development Economics.
4. Kandel, N., Khadka, K., et al (2012) Textbook on Principles of Economics, Buddha Publications, Kathmandu.
5. Dangal, Dilnath, Arthasastra ko Siddhanta.
6. Sharma, Nilam Kumar, Arthasastra ko Siddhanta.
7. Joshi, M M and Pande, Kiran B. (2010) Sarbajanik Vitta, Vittiya Pranali ra Antarrastriya Byapar, Sukunda Publication, Kathmandu.

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	Introductory Economics	10	20
2	Interest Formula	10	20
3	Methods of Comparison of Alternatives	10	20
4	Replacement and maintenance Analysis	8	20
5	Depreciation	7	
6	Evaluation of Public Alternatives	5	20
7	Risk Analysis	5	
8	Project Management	**5**	
	Total	**60**	**100**

Building Services II
EG 2207 CE

Year: II **Lecture: 4 hours/week**
Semester: II **Practical: 4 hours/week**
Total: 8 hours/week

Course Description

This module focuses on building services such as Electrical System, HVAC System and Lifts and escalators. The range of information required and the graphical techniques used to convey such information; a very good understanding of the way building services are used in construction and the understanding of its details. Assignment in this module enhances practical knowledge about these building services, their types and installations methods.

Course Objectives:

The objectives of this module are:

- Introduce various systems of building services.
- Explain the importance of building environmental and relationship between building services and the building users/occupants.
- Develop an appropriate detail drawing of these building services.

Course Contents: **60 Hrs.**
Theory

Unit 1: Electricity **30 Hrs.**

1.1 Basic concept of electric current and voltage
1.2 Circuit
1.3 Types of circuits
  1.3.1 Series connection
  1.3.2 Parallel connection
1.4 Alternating current system and direct current system
1.5 Types of Alternating current system
  1.5.1 Single phase two wire system
  1.5.2 Two phase 3 wire system
  1.5.3 Three phase 3 wire system
  1.5.4 Four phase 4 wire system
1.6 General description of Electrical Distribution system, transformers, substation, service panels (MDB, SDB)
1.7 Electrical Installation
  1.7.1 Introduction
  1.7.2 Methods of distribution of electrical energy
    1.7.2.1 Tree system
    1.7.2.2 Distribution board system
  1.7.3 Types of Wiring System
    1.7.3.1 Cleat wiring
    1.7.3.2 Wooden casing and capping wiring
    1.7.3.3 PVC casing- capping wiring
    1.7.3.4 Wooden batten wiring
    1.7.3.5 Conduit wiring
    1.7.3.6 General Rules for Wiring System and Code of Practice

1.7.3.7 Determination of Light sub-circuit, power sub-circuit & Total Load
1.7.3.8 Electrical Installation for Electrical Heating System, Air-conditioning System, lifts, escalators and pumps etc.

1.8 Safety and Protection in Electric System
- 1.8.1 Operation and Construction of Fuses, MCB and MCCB
- 1.8.2 Earthing for Electrical Equipments and Appliances
- 1.8.3 Protective Devices Fuse
- 1.8.4 Types of fuses
  - 1.8.4.1 Re- wireable fuse
  - 1.8.4.2 High rupturing capacity fuse
  - 1.8.4.3 Miniature circuit breaker
  - 1.8.4.4 Moduled case circuit breaker

1.9 Artificial Lighting System
- 1.9.1 Introduction
- 1.9.2 Terms Used in Lighting System
- 1.9.3 Laws of Illumination
- 1.9.4 Types of Lamps and Lighting Fixtures
- 1.9.5 Types of Lighting Schemes
- 1.9.6 Lighting System Consideration for different Occupancies
- 1.9.7 Design of Lighting Schemes
- 1.9.8 Methods of Lighting Calculation

Unit 2: Ventilation and air conditioning **20 Hrs.**

2.1 Introduction
2.2 Functional requirements of ventilation system
2.3 Systems of Ventilation
- 2.3.1 Natural Ventilation
- 2.3.2 Mechanical Ventilation

2.4 Types of natural ventilation
- 2.4.1 Wind effect
- 2.4.2 Stack effect

2.5 General rules of natural ventilation
2.6 Mechanical ventilation
2.7 System of mechanical ventilation
- 2.7.1 Extraction system
- 2.7.2 Plenum system
- 2.7.3 Extraction Plenum system
- 2.7.4 Air conditioning

2.8 Refrigeration Cycles
2.9 Types of Air conditioning
- 2.9.1 Window unit
- 2.9.2 Split type
- 2.9.3 Central AC

2.10 Essentials of comfort air conditioning
2.11 System of Air conditioning
- 2.11.1 Direct Expansion System
- 2.11.2 Chilled water

2.12 Essentials of Air Conditioning System
- 2.12.1 Filtration

2.12.2 Heating
2.12.3 Cooling
2.12.4 Humidification
2.12.5 Dehumidification
2.12.6 Air Circulation or Distribution

2.13 Sick Building Syndrome
2.13.1 Symptom of Sick Building Syndrome
2.13.2 Causes of Sick Building Syndrome
2.13.3 Solution of Sick Building Syndrome

Unit 3: Lifts and Escalators **10 Hrs.**

3.1 Introduction
3.2 Components of Lifts
3.3 Types of Lifts
3.3.1 Hydraulic Elevators
3.3.2 Traction Elevators
3.3.3 Climbing Elevators
3.3.4 Pneumatic Elevators
3.3.5 Machine room Less Elevators
3.4 Design Consideration for Lifts
3.5 Components of Escalators
3.6 Types of Escalators
3.6.1 Parallel Escalators
3.6.2 Multi Parallel Escalators
3.6.3 Spiral Escalators
3.6.4 Criss-Cross Escalators
3.7 Design Consideration for Escalators

Practical **60 Hrs.**

1. Electrical Layout on Residential Building: **30 Hrs.**

1.1 Conduct market study, collect data and prepare report and presentation on electrical lamps, appliances and equipment available in Nepal.
1.2 Determine of Light sub-circuit, power sub-circuit & Total Load
1.3 Calculate the number of lights of each room.
1.4 **Sheet No. 1:** Draw plan of ground floor to show Light circuit layout (with room names, dimension, scale of drawing)
1.4.1 Indicate the location of the lights, lighting switches, SBD, MBD, Meteretc
1.4.2 Use proper symbols of the services.
1.5 **Sheet No. 2:** Draw plan of first floor to show Light circuit layout (with room names, dimension, scale of drawing)
1.5.1 Indicate location of the lights, lighting switches, SBD etc…
1.5.2 Use proper symbols of the services.
1.6 **Sheet No.3:** Draw plan of second floor to show Light circuit layout (with room names, dimension, scale of drawing)
1.6.1 Indicate location of the lights, lighting switches, SBD etc…
1.6.2 Use proper symbols of the services.
1.6.3 Collect reference pictures of electrical features.
1.6.4 Describe and specify proposed services system.

1.7 **Sheet No.4:** Draw plan of ground floor to show Power circuit layout (with room names, dimension, scale of drawing)
- 1.7.1 Indicate location of the power sockets. Telephone points, TV points etc…
- 1.7.2 Use proper symbols of the services.

1.8 **Sheet No. 5:** Draw plan of first floor to show Power circuit layout (with room names, dimension, scale of drawing)
- 1.8.1 Indicate location of the power sockets. Telephone points, TV points etc…
- 1.8.2 Use proper symbols of the services.

1.9 **Sheet No.6:**Draw plan of second floor to show Power circuit layout (with room names, dimension, scale of drawing)
- 1.9.1 Indicate location of the power sockets. Telephone points, TV points etc…
- 1.9.2 Use proper symbols of the services.

2. Ventilation and Air Conditioning on residential Building: 30 Hrs.

2.1 Conduct market study, collect data and prepare report and presentation on mechanical ventilation available in Nepal:

2.2 **Sheet No.7:** Draw plan of ground floor to show single split air condition one to one connectionlayout (with room names, dimension, scale of drawing)
- 2.2.1 Indicate location of outdoor unit and indoor unit
- 2.2.2 Use proper symbols of the services.

2.3 **Sheet No. 8:** Draw plan of first floor to show single split air condition one to one connection layout(with room names, dimension, scale of drawing):
- 2.3.1 Indicate location of outdoor unit and indoor unit
- 2.3.2 Use proper symbols of the services.

2.4 **Sheet No. 9:** Draw plan of second floor to show single split air condition one to one connection layout (with room names, dimension, scale of drawing)
- 2.4.1 Indicate the location of outdoor unit and indoor unit
- 2.4.2 Use proper symbols of the services.

2.5 **Sheet No. 10:** Draw section of residential building to show single split air condition one to one connection layout (with room names, dimension, scale of drawing):
- 2.5.1 Indicate the location of outdoor unit and indoor unit
- 2.5.2 Use proper symbols of the services.

2.6 **Sheet No.11**: Draw plan of ground floor to show multi split air condition layout (with room names, dimension, scale of drawing)
- 2.6.1 Indicate the location of outdoor unit and indoor unit.
- 2.6.2 Use proper symbols of the services.

2.7 **Sheet No.12**: Draw plan of first floor to show multi split air condition layout (with room names, dimension, scale of drawing)
- 2.7.1 Indicate location of outdoor unit and indoor unit
- 2.7.2 Use proper symbols of the services.

2.8 **Sheet No.13:** Draw plan of ground floor to show multi split air condition layout (with room names, dimension, scale of drawing)
- 2.8.1 Indicate location of outdoor unit and indoor unit
- 2.8.2 Use proper symbols of the services.

2.9 **Sheet No.14**: Draw section of residential building to show multi split air condition one to one connectionlayout (with room names, dimension, scale of drawing)

2.9.1 Indicate location of outdoor unit and indoor unit.
2.9.2 Use proper symbols of the services.

2.10 **Sheet No.15**: Draw plan of ground floor to show Central air-conditioned layout (with room names, dimension, scale of drawing)
2.10.1 Indicate location of outdoor unit and indoor unit.
2.10.2 Use proper symbols of the services.

2.11 Sheet No.16: Draw plan of first floor to show Central air-conditioned layout (with room names, dimension, scale of drawing)
2.11.1 Indicate location of air handling unit, supply duct, return air duct, diffusers, indoor unit
2.11.2 Use proper symbols of the services.

2.12 **Sheet No.17:** Draw a plan of second floor to show Central air-conditioned layout (with room names, dimension, scale of drawing)
2.12.1 Indicate location of air handling unit, supply duct, return air duct, diffusers, indoor unit
2.12.2 Use proper symbols of the services.

2.13 **Sheet No.18**: Draw section of residential building to show Central air-conditioned layout (with room names, dimension, scale of drawing)
2.13.1 Indicate the location of air handling unit, supply duct, return air duct, diffusers, indoor unit.
2.13.2 Use proper symbols of the services.

References:

1. Deshpandey, M.B., Lighting and Illumination
2. Kosinberger et al., Manual of tropical housing and building: Climatic Design, Orient longman
3. Chudley, R., Building constructionhandbook
4. Building Construction B.C Purnima
5. Johnson, J.W. Domestic Construction Manual (Sections K & L), Master Builders Association, West Perth, 1990
6. Rawlinsons, Rawlinsons Australian Construction Handbook, Perth, Rawlhouse Publishing, 1989 pp 208-216, 408-412, 466-507, 588-595
7. Jain & Jain "ABC of Electrical Engineering" Dhanpat Rai Publishing Company, New Delhi.
8. J.B. Gupta "Electrical Installation Estimating and Costing" S.K. Kataria& Sons, New Delhi
9. G.L. Wadhwa "Generation, Distribution and Utilization of Electrical Energy", New Age International (P) Limited, India
10. Bhuvanesh A Oza, Nirmal Kumar C Nair, Rashesh P Mehta and Vijaya H Makwana, "Power System Protection and Switchgear" Tata McGraw Hill Education (P) Limited, New Delhi

Evaluation Scheme
Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	Electricity	60	80
2	Ventilation and Air conditioning	50	60
3	Lifts and Escalators	10	20
	Total	**120**	**160**

Design Studio II
EG 2202 ID

Year: II **Total: 6 hours/week**
Semester: II **Lecture: 2 hours/week**
Practical: 4 hours/week

Course Description
This course provides visual communication with the interior design process and design projects with some residential interior design.

Course objective
After completion of this course, students will be able to:

- Define design theory
- Use basic application in room
- Describe the design standards
- Introduce interiors of residential buildings.
- Apply the designs on rooms and residential buildings

Course Contents

Theory

Unit 1: Design standards **15 Hrs.**

1.1 Anthropometrics in interior of residential buildings design
- 1.1.1 Introduction
- 1.1.2 Components
  - 1.1.2.1 Bed room: Introduction, requirements
  - 1.1.2.2 Living room: Introduction, requirements
  - 1.1.2.3 Kitchen: Introduction, requirements
  - 1.1.2.4 Dinning: Introduction, requirements
  - 1.1.2.5 Rest room: Introduction, requirements
  - 1.1.2.6 Laundry: Introduction, requirements
  - 1.1.2.7 Store: Introduction, requirements
  - 1.1.2.8 Pooja room: Introduction, requirements

Unit 2: Interior design practices on rooms and residential buildings: **15 Hrs.**

2.1 Plan, Elevation and design
- 2.1.1 Architectural plan: Introduction, Importance, Use
- 2.1.2 Furniture layout plan: Introduction, Importance, Use
- 2.1.3 Four side elevations: Introduction, Importance, Use
- 2.1.4 Sectional elevations: Introduction, Importance, Use
- 2.1.5 Furniture design: Introduction, Importance, Use

Practical **60 Hrs.**

Unit1. Prepare different drawing sheet according toAnthropometrics in interior of residential buildings design: **30 Hrs.**

1.1 Bed room
- 1.1.1 Collect the reference pictures
- 1.1.2 Prepare the bed room Layout in drawing sheet.

1.2 Living room
- 1.2.1 Collect the reference pictures
- 1.2.2 Prepare the living room Layout in drawing sheet.

1.3 Kitchen
- 1.3.1 Collect the reference pictures
- 1.3.2 Prepare the kitchen room Layout in drawing sheet.

1.4 Dining room

1.4.1 Collect the reference pictures
1.4.2 Prepare the dinning room Layout in drawing sheet.

1.5 Rest room
1.5.1 Collect the reference pictures
1.5.2 Prepare the rest room Layout in drawing sheet.

1.6 Store room
1.6.1 Collect the reference pictures
1.6.2 Prepare the store room Layout in drawing sheet.

1.7 Pooja room
1.7.1 Collect the reference pictures
1.7.2 Prepare the pooja room Layout in drawing sheet.

1.8 Laundry
1.8.1 Collect the reference pictures
1.8.2 Prepare the laundry room Layout in drawing sheet.

Unit 2 Prepare different drawing sheet on Interior design practices on rooms and residential buildings: 25 Hrs.

2.1 Sheet no 1: Architectural plan

2.2 Sheet no 2: Furniture layout plan

2.3 Sheet no 3: Sectional elevations
2.3.1 X axis
2.3.2 Y axis

2.4 Sheet no 4: Furniture design
2.4.1 Furniture plan
2.4.2 Furniture elevation
2.4.3 Furniture sections
2.4.4 Material specification
2.4.5 Furniture 3D

2.5 Sheet no 5: 3D views of rooms 18hrs
2.5.1 Bed room
2.5.2 Living room
2.5.3 Kitchen
2.5.4 Dining room
2.5.5 Rest room
2.5.6 Store room
2.5.7 Pooja room
2.5.8 Laundry

Unit 3: Prepare a portfolio, write report and present on residential building. 5 Hrs.

Reference

1. Ching, Francis: Architectrue: fome, spaceandorder:2nd edition, Van Nostrand Reinhold
2. J.De Chiara, Panero, Zelink: Time Saver Standards for interior design and space planning
3. Karla J. nelson and David A. Tayler: Interiors and introduction:3rd edition, Mc Graw Hill
4. Helene Levenson: Creating an interior: Prentice Hall, Englewood Cliffs, New Jersey
5. Abercrombie, Stanley: A philosophy of interior design

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	Design Standards	45	60
2	Interior design practices on rooms and residential buildings	45	60
	Total	**90**	**120**

Interion Design in Nepal
HS2203 ID

Year: II **Total: 6 hours/week**
Semester: II **Lecture: 4 hours/week**
Practical: 2 hours/week

Course description
This course imparts knowledge on interior design in Nepal. It also focuses on furniture, carving, color and arts, doors and windows, etc.

Course objectives
After the completion of this course students will be able to:
1. Define the interior design in Nepal.
2. Familiarize about furniture and furnishing
3. Explain various cultural arts and carving.
4. Conduct mini research and case studies.

Courses contents
Theory

1. Interior Design **8 Hrs.**
- 1.1 Definition
- 1.2 History
- 1.3 Importance
- 1.4 Scope

2. Society and culture **8 Hrs.**
- 2.1 Definition
- 2.2 Importance
- 2.3 Difference in social and culture
- 2.4 Type

3. Cultural Arts in Nepal **8 Hrs.**
- 3.1 Definition
- 3.2 History
- 3.3 Importance
- 3.4 Inter-connection between different culture in interior design
- 3.5 Vaastu and its relation with Nepali interiors
- 3.6 Cultural Art
  - 3.6.1 Newari 10 Hrs.
    - 3.6.1.1 History
    - 3.6.1.2 Ceiling and flooring
    - 3.6.1.3 Doors, windows and staircase treatment
      - Wood Carving
    - 3.6.1.4 Furniture, furnishing and nitches
    - 3.6.1.5 Wall roof and courtyard (internal courtyard) design
    - 3.6.1.6 Newari house plan, attic andfaçade design (chheli, matan, chvata, baiga)
  - 3.6.2 Maithili 8 Hrs.
    - 3.6.2.1 History
    - 3.6.2.2 Art and colors

3.6.2.3 Façade design
3.6.2.4 Walls, roof and staircase design

3.6.3 Mongolian 8 Hrs.
3.6.3.1 History
3.6.3.2 Furniture and furnishing
3.6.3.3 Roof, pillar and wall
3.6.3.4 Carving and arts

4. Modern interior design in Nepal 10 Hrs.

4.1 Introduction
4.2 Scope
4.3 Uses
4.4 Importance
4.5 Material use in modern interior design (wood, metals, clays, etc)

5. Practical 30 Hrs.

Perform the following tasks:

1. Prepare the report and conduct presentation on Newari interior design (door, window, carving, nitches, roof and attics).
2. Prepare the report and and conduct presentation on Maithali interior design (arts and colors, roofs, furniture).
3. Prepare the report and and conduct presentation on Mongolian interior design (furtniture, carving and arts).
4. Prepare the report and and conduct presentation on modern interior design.

References

1. C. Bonapace and V. Sestini,2003, Traditional Materials and Construction Technologies used in the Kathmandu Valley
2. S. Bhattarai, 2019, published in Nepali Times
3. U.V. Schroeder, first edition, 2019 volume I, Nepalese stone sculpture (hindu)
4. U. V. Schroeder, first edition, 2019 volume II, Nepalese stone sculpture (Buddhist)
5. S. Shrestha, vaastu an annual journal of architecture, volume XI, 2011
6. Mohan N. Shrestha, 2009, Nepal's Traditional Settlement: Pattern and Architecture**.**
7. S. Ghosh, 2020, Madhubani Painting—Vibrant Folk Art of Mithila
8. P. Joshi, 2016, Mithila cosmos, posted in Space Nepal.

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	Interior Design	8	10
2	Society and culture	8	10
3	Cultural Arts in Nepal	8	20
4	Newari	20	20
5	Maithili	15	20
6	Mongolian	15	20
7	Modern interior design in Nepal	14	20
	Total	**90**	**120**

Computer Aided Drafting (CAD-Advanced) II
EG 2201 AR

Year: II **Total: 6 hours /week**
Semester: II **Lecture: 2 hour/week**
Practical: 4 hours/week

Course description

This course intends to impart students with a broad introduction into 2D computer aided design and drafting with a focus on architectural drawings. This course deals as intensive introduction to the use of a CAD program for the development of working drawings.

Course objectives

After the completion of this course students will be able to:

- Create text style in drawing.
- Create more accurate drawings in less time than traditional drafting method.
- Use presentation that represent a design.

Course Contents

Theory

Unit 1: Working with blocks and annotation **8 Hrs.**

1.1 Creating and inserting blocks
1.2 Creating text style/adding text style in a drawing
1.3 Creating dimension style
1.4 Editing text/dimension

Unit 2: Features **6 Hrs.**

2.1. Layer concept/loading line type
2.2. Match properties
2.3. Changing properties of the objects

Unit 3: Hatching **2 Hrs.**

3.1 Hatching
3.1.1 Edit Hatches

Unit 4: Attributes: **4 Hrs.**

4.1 Creating a title block with attributes

Unit 5: Inquiry Commands: **4 Hrs.**

5.1 Distance/ID/Area/list/DB list
5.2 Massprop

Unit 6: Working in layout tabs **6 Hrs.**

6.1. Model space
6.2. Paper space
6.3. plotting

Practical

Unit 1: Architectural drawing **60 Hrs.**

1.1 Draw a complete a set of working drawing through Auto CAD.

References

1. Alf Yarwood, Introduction to Auto CAD 2006
2. Ellen Finkelstin, Auto CAD 2000 Bible, IDG Books India (P) Ltd., 3583 Om Bhawan, 4th Floor, Netaji Subas Marg, Daryaganj, New Delhi,
3. George Omura, Mastering Auto CAD 2007 and Auto CAD LT 2007, BPB Publications, India
4. Sham Tickoo, Auto CAD 2005 for Engineers and Designers, Dreamtech Press.

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	Working with blocks and annotation	18	25
2	Features	16	20
3	Hatching	12	15
4	Attributes	14	20
5	Inquiry Commands	14	20
6	Working in layout tabs	16	20
Total		**90**	**120**

Third Year/ First Semester

Design Studio-III
HS 3101 ID

Year: III **Total: 6 hours/week**
Semester: I **Lecture: 2 hours/week**
Tutorial: hours/week
Practical: 4 hours/week

Course Description
To provide visual communication with the interior design process. To design projects with some residential interior design and investigation analysis programming and design synthesis

Course Objectives
After completion of this course, students will be able to:

- Introduce the design theory.
- Use basic application in room.
- Familiarize with design standards.
- Define interiors.
- Express the Idea on rooms and residential buildings
- Describe the presentation drawing.
- Apply the drawings on site.

Unit 1. Interior design practice on residential buildings **5 Hrs.**
1.1 Introduction
1.2 History
1.3 Modren trends

Unit 2. Wall treatment plan and design **5 Hrs.**
2.1 Introduction
2.2 Scope
2.3 Importance

Unit 3. Flooring plan and design **5 Hrs.**
3.1 Introduction
3.2 Scope
3.3 Importance

Unit 4. Ceiling design **5 Hrs.**
4.1 Introduction
4.2 Scope
4.3 Importance

Unit 5. Furniture design **5 Hrs.**
5.1 Introduction
5.2 Scope
5.3 Importance

Unit 6. 3D views **5 Hrs.**
6.1 Introduction
6.2 Scope
6.3 Importance

Practical

Unit1. Interior Design Practices: **60 Hrs.**

Prepare different drawing sheet on Interior design practices on residential buildings.

1. Sheet no 1: Architectural plan 5 Hrs.
2. Sheet no 2.1: Furniture layout plan 5 Hrs.
   Sheet no 2.2: Alt. Furniture layout plan
3. Sheet no 3: Sectional elevations 5 Hrs.

- X axis
- Y axis

4. Ceiling design 5 Hrs.
   - Collect the reference pictures
   - plan
   - elevation
   - section
   - 3d view
   - Material Specification
5. Wall treatment/design 5 Hrs.
   - Collect the reference pictures
   - plan
   - elevation
   - section
   - 3d view
   - Material Specification
6. Furniture design 5 Hrs.
   - Collect the reference pictures
   - Furniture plan
   - Furniture elevation
   - Furniture sections
   - Furniture 3D
7. Sheet no 5: 3D views of rooms 20 Hrs.
   - Bed room and Living room
   - Kitchen and Dining room
   - Rest room and Store room
   - Pooja room and Laundry
8. Overall residential rooms Isometric views 5 Hrs.

Unit 2. Outreach: 5 Hrs.

2.1 Conduct Site/field visit /factory visit and prepare a market survey, report writing and presentation on residential buildings.

2.2 Compile a Portfolio.

Reference

1. Ching, Francis: Architectrue:fome,spaceandorder:2nd edition, Van Nostrand Reinhold
2. J.De Chiara, Panero, Zelink: Time Saver Standards for interior design and space planning
3. Karla J. nelson and David A. Tayler: Interiors and introduction:3rd edition, Mc Graw Hill
4. Helene Levenson: Creating an interior: Prentice Hall, Englewood Cliffs, New Jersey
5. Abercrombie, Stanley:A philosophy of interior design.

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	Interior design practice on residential buildings	15	20
2	Wall treatment plan and design	15	20
3	Flooring plan and design	15	20
4	Ceiling design	15	20
5	Furniture design	15	20
6	3D views	15	20
	Total	**90**	**120**

Furniture Design
HS 3102 ID

Year: III **Total: 6**
Semester: I **Lecture: 2**
Practical: 4

Course description

This course is designed to give students knowledge about different types of furniture and its materials, history and evolution. It helps student to understand basic techniques and technology used on the market for the construction details.

Course objectives

After completion of this course, students will be able to:
1. Develop knowledge about history of furniture.
2. Familiarize about material and techniques.
3. Design furniture and estimates the cost.

Course Contents
Theory
Unit 1: Furniture design **4 Hrs.**

1.1. Introduction
1.2. Importance
1.3. Uses

Unit 2: Types of furnitures **8 Hrs.**

2.1 Bed
- 2.3.1 Introduction
- 2.3.2 Standard size
- 2.3.3 Types
- 2.3.4 Materials used

2.2 Chairs
- 2.2.1 Introduction
- 2.2.2 Standard size
- 2.2.3 Types
- 2.2.4 Materials used

2.3 Couches
- 2.3.1 Introduction
- 2.3.2 Standard size
- 2.3.3 Types
- 2.3.4 Materials used

2.4 Tables.
- 2.4.1 Introduction
- 2.4.2 Standard size
- 2.4.3 Types
- 2.4.4 Materials used

Unit 3: Indoor and oudoor furniture **2 Hrs.**

3.1 Introduction
3.2 Types
3.3 Difference between indoor and outdoor furniture

Unit 4: Tools used in carpentry work **8 Hrs.**

4.1 Introduction to tools.
4.2 The Beginning Hand Tool List
- 4.2.1 Jack plane (Stanley #5)
- 4.2.2 Hand saw (backless saw ~26″ in length)
- 4.2.3 1/4, 3/8, and 1″ chisels
- 4.2.4 Back Saw
- 4.2.5 Coping Saw
- 4.2.6 Marking gauge
- 4.2.7 Square
- 4.2.8 Sharpening set up (stones, sandpaper, whatever)

4.3 Essential power tools.
- 4.3.1 Circular saw
- 4.3.2 Power drill
- 4.3.3 Jigsaw
- 4.3.4 Random orbital sander
- 4.3.5 Table saw
- 4.3.6 Compound meter saw
- 4.3.7 Router

Unit 5: Carpentry joinery **8 Hrs.**

5.1 Introduction
5.2 Types of joints
- butt joint
- lap joint
- bridle joint
- dowel joint
- cross dowel jont
- mitre joint
- box joint
- dovetail joints
- dado joints
- groove joints
- tongue and groove
- mortise and tenon
- birdsmouth joints
- cross lap
- splice joint

5.3 Materials used for joining

Practical **60 Hrs.**

1. Prepare the report and presentation of furniture designing. 5 Hrs.
2. Make any furniture from recycle material. 10 Hrs.
3. Market survey in material used in furniture, properties, cost and prepare report and presentation. 5 Hrs.
4. Design furniture of residential building.
   - 4.1. Sheet no 1: Living room 10 Hrs.
     - 4.1.1. Lay out the furniture design.
     - 4.1.2. Sketch the concept.
     - 4.1.3. Draw a detail drawing in auto cad

       - Furniture plan
       - Furniture sections
       - Furniture joints details
       - Furniture 3D with material details.
       - Cost estimation of the final product

4.1 Sheet no. 2: Bedroom **10 Hrs.**

4.1.1 Lay out the furniture design.
4.1.2 Sketch the concept.
4.1.3 Draw a detail drawing in auto cad

- Furniture plan
- Furniture sections
- Furniture joints details
- Furniture 3D with material details.
- Cost estimation of the final product

4.2 Sheet no.3: Kitchen 10 Hrs.

4.2.1 Lay out the furniture design.
4.2.2 Sketch the concept.
4.2.3 Detail drawing in auto cad

- Furniture plan
- Furniture sections
- Furniture joints details
- Furniture 3D with material details
- Cost estimation of the final product

4.3 Sheet no.4: Restroom 10 Hrs.

4.3.1 Lay out the furniture design.
4.3.2 Sketch the concept.
4.3.3 Draw a detail drawing in auto cad

- Furniture plan
- Furniture sections
- Furniture joints details
- Furniture 3D with material details
- Cost estimation of the final product

References

- Blakemore, Robbie G. (2006). *History of interior design & furniture: from ancient Egypt to nineteenth-century Europe*. J. Wiley & Sons. ISBN 978-0-471-46433-4.
- COLCHESTER, C. (1991), The New Textiles Trends & Traditions. Thames & Hudson.
- Sloan, A. (1988), The Complete Book of Decorative Paint Techniques, Ebury Press & London.
- Larsen, J. L, (1989), Furnishing Fabrics, Thames 81 Hudson, London.
- Riggs, J.Rosemary (1989), Materials & Components of Interior Design, Prentice Hall, New Jersey.
- Singh G., (1979), Building Materials, Standard Publishers Distributors, Delhi.
- Dr. B.C. PUNMIA, Building construction , Laxmi Publication (P) LTD.
- Cahill, P. (2016). Furniture Design History, onlinedesignteacher.com.
- Chris Baylor (2020), 7 Essential Power Tools for beginning woodworkers, thesprucecrafts.com/power

Evaluation Scheme
Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	Furniture design	10	10
2	Types of furnitures	20	30
3	Indoor and oudoor furniture	10	20
4	Tools handling in carpentry work	25	30
5	Carpentry joinery	25	30
	Total	**90**	**120**

Working Drawing
EG 3108 CE

Year: III **Total: 7 hours /week**
Semester: I **Lecture: 1 hours/week**
Practical: 6 hours/week

Course description

This course is designed to help students on explanation of working drawing. It deals on role of working drawing, relation between design drawing and working drawing, and development of ability in preparing working drawing.

Course objectives
After completion of this course, students will be able to:

- Describe the concept of working drawing for construction.
- Organize a complete set of working drawing for construction purpose.

Course Contents
Theory

Unit 1. Working drawing **10 Hrs.**

1.1 Introduction
1.2 Importance
1.3 Purposes
1.4 Drawing preparation process (step by step).

Unit 2. Interior design working drawing **5 Hrs.**

2.1. Necessary working drawing of construction work
2.2. Construction Information (at site)

Practical **90 Hrs.**

1. **Site visit and Area measurement** **10 Hrs.**
   - 1.1 Conduct a site visit.
   - 1.2 Measure the existing floor space and mention dimension of same.
   - 1.3 **Sheet no.1:**Draw floor plan of site visited in given scale (1:100).

2. **Working Drawing of two rooms of a residential building** **10 Hrs.**
   - 2.1. **Sheet no.2:** Draw floor plans with furniture layout in given scale (1:100).
   - 2.2. **Sheet no.3:** Draw four side elevations of given rooms in given scale (1:100).
   - 2.3. **Sheet no.4:** Draw four side elevations of given rooms in given scale (1:100).
   - 2.4. **Sheet no.5:** Draw two sections of given room (cross and longitudinal) in given scale (1:100).

3. **Working drawing of rooms of a residential building.** **70 Hrs.**
   - 3.1. **Sheet no.6:** Prepare list of drawings to be done.
   - 3.2. **Sheet no.7:** Draw ground floor plans of a residential building in given scale (1:100) and provide detail dimension.
   - 3.3. **Sheet no.8:** Draw first floor plans of a residential building in given scale (1:100) and provide detail dimension.
   - 3.4. **Sheet no.9:** Draw furniture layout plans of ground floor of the residential building in given scale (1:100) and provide detail internal dimension.
   - 3.5. **Sheet no.10:** Draw furniture layout plans of first floor of the residential building in given scale (1:100) and provide detail internal dimension.

3.6. **Sheet no.11-16:** Draw four side elevations of rooms (living room, master bed room, closet, kitchen, dining and toilet) in given scale (1:100) and mention finishing materials for wall.
3.7. **Sheet no.17:** Draw two sections (cross and longitudinal) of given floor plans in given scale (1:100).
3.8. **Sheet no.18:** Prepare partition wall scheduleof rooms (living room, master bed room, closet, kitchen, dining and toilet) in given scale (1:100).
3.9. **Sheet no.19:** Draw partition wall details of rooms (living room, master bed room, closet, kitchen, dining and toilet) in given scale (1:100).
3.10. **Sheet no.20:** Prepare finishing materials schedule of wall, ceiling and floor of rooms (living room, master bed room, closet, kitchen, dining and toilet).
3.11. **Sheet no.21:** Draw floor finishes plans of ground floor in given scale (1:100).
3.12. **Sheet no.22:** Draw floor finishes plans of first floor in given scale (1:100).
3.13. **Sheet no.23:** Draw false ceiling plans of ground floor in given scale (1:100).
3.14. **Sheet no.24:** Draw false ceiling plans of first floor in given scale (1:100).
3.15. **Sheet no.25:** Draw sections of false ceiling of ground floor and first floor in given scale (1:50) and provide detail dimension to them.
3.16. **Sheet no.26:** Prepare schedule of lights used in interior of rooms (living room, master bed room, closet, kitchen, dining and toilet).
3.17. **Sheet no.27:** Draw electrical lighting plan ofground floor in given scale (1:100).
3.18. **Sheet no.28:** Draw electrical lighting plan offirst floor in given scale (1:100).
3.19. **Sheet no.29-33:** Draw and provide detail dimension of furniture including construction material details used in rooms (living room, master bed room, closet, kitchen, dining and toilet) in given scale (1:50).
3.20. **Sheet no.34:** Prepare schedule of doors of rooms (living room, master bed room, closet, kitchen, dining and toilet).
3.21. **Sheet no.35:** Draw details and provide detail dimension of doors of rooms (living room, master bed room, closet, kitchen, dining and toilet) in given scale (1:100).
3.22. Prepare portfolio of all drawing sheets.

References

1. Manual produced by Architectural firm (complete drawing set)
2. Tom Porter, Architectural working drawing, Charles Scribner and sons
3. Francis D.K. Ching, Building Construction, Pritoria Pictures of Building
4. R. Chudley, R Creeno Building Construction Hand Book, Pearson Prientic Hall

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	Working drawing	10	10
2	Interior design working drawing	5	10
3	Site visit and Area measurement	10	20
4	Working Drawing of two rooms of a residential building	10	20
5	Working drawing of rooms of a residential building	70	60
	Total	105	120

Sociology
HS 3103 ID

Year : III **Total:4 hours /week**
Semester: I **Lecture: 4 hours /week**
Practical: hours /week

Course Description

This course is designed to provide basic knowledge on Sociology necessary for Social Work. It also imparts basic knowledge on Vastu Science and Special Population (Differently Able People) that helps in laying foundation for social work.

Course Objectives

After completion of this course, the students will be able to:

- Familarize with basic concept and meaning of sociology.
- Describe social structure, social process and social institutions.
- Explain the culture and civilization, processes and factors of social and cultural changes
- Familiarize with the social dimention of Interior, on the whole.
- Define and link Vastu science and Special Populatin to social work.
- State relevancy of sociology in social work.

Course contents

Theory

Unit1: Introductory Sociology **6 Hrs.**

1.1. Definition,meaning, scope and founders of sociology
1.2. Interdisciplenary relation between Interior design and Sociology.
1.3. Types of SociologyMM
  1.3.1 Rural sociology
  1.3.2 Urban sociology
  1.3.3 Political sociology
  1.3.4 Industrial sociology
  1.3.5 Economic sociology.

Unit2: Man and society **6 Hrs.**

2.1 Fundamental concept of society and Social Environment: meaning types of society,difference between physical and social environment.
2.2 Socialization:Definition, Process and factors of socialization.
2.3 Social Interaction: Meaning ,Socio-Cultural Processes
2.4 Social change:Meaning and factors of change.

Unit3: Social structure **10 Hrs.**

3.1 Meaning of social structure,elements and types/kinds.
3.2 Social Institution:Function and types.
3.3 Forms of Marriage,Kinship system, meaning and forms of family,Caste and Gender.Social structure in Nepal.
3.4 Social system:Concept and elements of social system.
3.5 Social Group:Meaning and forms, difference between group and Community.

Unit.4: Culture and Civilization **5 Hrs.**

4.1 Meaning and definition of cuture,
4.2 Civilization of Paleolithic,Bronge to Modern civilization and culture.
4.3 Structure of culture;
4.4 Cultural traits,Patterns,diffusion,transmission,values and norms etc.

Unit.5. Social Phylosophy of life in Nepal **5 Hrs.**

5.1. Pattern of urban and rural settlement.

5.2. Population pressure,Funtional and aesthetic dimensionof ethnic houses of Nepal.
5.3. Uses of indigenious contruction material merits and demerits.

Unit.6. Social Dimenssion of Interior **10 Hrs.**

6.1. Socio- cultural dimenssion of space(voids)
6.2. Socio-cultural dimension of built forms(mass)
6.3. The ADA and Universal Design
6.4. Special Population : Meaning and types (Physical impairment,Visual impairment,little people,elderly people and others).

Unit.7. Vastu in Interiors **8 Hrs.**

7.1. Phylosophy and Meaning of Vastu.
7.2. Vastu Principles,importance,elements and direction.
7.3 Vastu Purusha and Mandala.
7.4. Layouts and main door Position
7.5. Shape and Architectural details.

Unit.8. Social Research Method **10 Hrs.**

8.1. Social dimension of Nepalese Interior through research.
8.2. Research definition and types
8.3. Mini Case study research (in relation to social works)

- Definition,research essentials and litereture review.
- Research design approach:research units and samples,identification and sources of data,selection of data collection methods.
- Sample survey,interviews,group disscusion,participation,direct observation and ethonoghraphic description.
- Analysis and organization of data,qualitative and quantitative analysis,relaibility and validity of data collection.
- Report writing techniques,style and referencing and citations.

References

1. Vidhya Bhusan et.al.,*"An introduction to Sociology",*Kitab Mahal,Delhi.
2. Inleles,Alex,"*What is sociology",*Penguin Books.
3. Edward t, Hall "*The Hidden Dimension,"* Achor Books, NY.
4. HK Wolff and P.R. Pant," *Social Science Research and Thesis Writing'*,Buddha Publisher,Putali sadak.
5. Caroline Hodges Persell (1984) *Understanding Society: "An introduction to sociology,"* Cambridge, Harper and Row Publishers.
6. Beteille, Andre (2002)," *Sociology: Essays on approach and Method*," OUP, New Delhi.
7. Dominelli, Lena (1997), "*Sociology for Social Work*," Palgrave, London

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	Introductory Sociology	6	15
2	Man and society	6	
3	Social structure	10	15
4	Culture and Civilization	5	15
5	Social Phylosophy of life in Nepal	5	
6	Social Dimenssion of Interior	10	15
7	Vastu in Interiors	8	20
8	Social Research Method	10	
	Total	**60**	**80**

Estimating and Costing
EG 3109 CE

Year: III **Total: 6 hour /week**
Sem **Lecture: 2 hour/week**
Practical: 4 hours/week

Course description
This course is designed to provide knowledge and skills on estimating and costing and its procedure.

Course objectives
After completion of this course, students will be able to:

- Introduce the estimated cost, actual cost and types of estimation;
- Explain the procedures of measuring and quantifying the furnishing and works.
- Estimate the cost of interior works.
- Prepare an analysis of rates for building works.
- Apply various methods of determining the value of property.
- Prepare a valuation report.

Course Contents
Theory

Unit 1: Introdction to Estimating and Costing **4 Hrs.**

1.1 Definition of estimate
1.2 Purpose of estimating
1.3 Estimate and the actual cost
1.4 Definition of terms
  1.4.1 Administrative approval
  1.4.2 Technical sanction
  1.4.3 Capital cost
  1.4.4 Schedule of rates
  1.4.5 Abstract of cost
  1.4.6 Bill of quantities
  1.4.7 Contingency
  1.4.8 Plinth area
  1.4.9 Carpet area
  1.4.10 Work charged establishment

Unit 2: Types of Estimates **4 Hrs.**

2.1 Approximate estimate
2.2 Detailed estimate
2.3 Revised estimate
2.4 Supplementary estimate
2.5 Annual repair and maintenance estimate
2.6 Extension and improvement estimate
2.7 Complete estimate of work/project
2.8 Split up of the cost of interior work

Unit 3: Estimation of Residential Building **8 Hrs.**

3.1 Units of measurement and payment for various items of work
3.2 Estimate of:
  3.2.1 A single room building (long and short wall method, centre line method)
  3.2.2 A two-room building (long and short wall method, centre line method)

3.2.3 Painting works, wall treatments for different rooms
3.2.4 Furniture and furnishing works for different rooms
3.2.5 Partition works; wall, boards, insulation
3.2.6 False ceiling
3.2.7 Light fixtures for different rooms
3.2.8 Flooring works for different rooms; parquet, mosaic, carpet, terrazzo, tiles, marble.
3.2.9 Bathroom and water closet fixtures
3.2.10 Cladding works

3.3 Abstracting bill of quantities

Unit 4: Analysis of Rates **8 Hrs.**

4.1 Introduction
4.2 Purpose of analysis of rates
4.3 Requirements of rate
4.4 Factor affecting rate analysis
4.5 Importance of rate analysis
4.6 Terms used in analysis of rates
4.6.1 Overhead cost
4.6.2 Task or out turn work
4.6.3 Labor rate
4.6.4 Material rate
4.6.5 Through rate
4.7 Government procedure of preparing analysis of rates for building works (paint,)
4.8 Estimating quantities of materials: bricks in brickwork, cement, sand and gravel in PCC.

Unit 5 Valuation **6 Hrs.**

5.1. Definition
5.2. Purpose of valuation
5.3. Principle of valuation
5.4. Factors affecting the value of propose
5.5. Definition of terms used in valuation
5.6. Various methods of determining the value of property
5.7. Method of writing valuation report

Practical **60 Hrs.**

Carry out detailed quantities and prepare estimate for the following:

1. Estimate one room building with RCC flat roof
2. Estimate one room building (having verandah) with RCC flat roof
3. Estimate two roomed RCC framed structure building.
4. Estimate steel reinforcement of footing, RCC beam, column and slab
5. Prepare a report and present.
6. Prepare estimate of:
   - single room building (long and short wall method, centre line method)
   - A two-room building (long and short wall method, centre line method)
   - Painting works, wall treatments for different rooms.
   - The furniture and furnishing worksfor different rooms.
   - The partition works; wall, boards, insulation
   - The false ceiling of a living room.
   - The light fixturesfor different rooms living room.

- Flooring worksfor different rooms; parquet, mosaic, carpet, terrazzo, tiles, marble
- The bathroom and water closet fixtures
- The cladding works

7. Prepare abstract of cost of quantities.
8. Prepare analysis of rates for building works (partition, cladding, flooring, parqueting, ceiling, mosaic, terrazzo, marble, tile) using government procedure.
9. Estimate the quantities of materials: bricks in brickwork, cement, sand and gravel in PCC.

References:

1. Amarjit Aggarwal "Civil estimating quantity surveying and valuation" Katson Publishing House, Ludhiyana, 1985
2. P.K. Guha "Quantity Surveying" (Principles and application Khanna Publishers
3. M. Charkraborti "estimating, costing, specifications and valuation in civil engineering"
4. G.S. Berdie "text book of estimating and costing".
5. B.N Dutta "Estimating and costing, specification and valuation"

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	Introdction to Estimating and Costing	10	10
2	Types of Estimates	10	10
3	Estimation of Residential Building	25	40
4	Analysis of Rates	25	30
5	Valuation	20	30
	Total	**90**	**120**

Entrepreneurship Development
(EG3101MG)

Year: III **Total: 5 hours /week**
Semester: I **Lecture: 3 hours/week**
Tutorial: hour/week
Practical: 2 hours/week
Lab: hours/week

Course description:
This course is designed to provide the knowledge and skills on formulating business plan and managing small business. The entire course deals with assessing, acquiring, and developing entrepreneurial attitude; skills and tools that are necessary to start and run a small enterprise.

Course objectives:
After completion of this course students will be able to:
1. Describe about various forms of enterprise and entrepreneurship;
2. Identify entrepreneurial competencies;
3. Design business ideas and viability;
4. Formulate business plan with its integral components;
5. Manage small farm enterprise.

Course Contents: Theory

Unit 1: Introduction to Business & Entrepreneurship: 9 Hrs.
1.1. Overview of entrepreneur and entrepreneurship
1.2. Wage employment, self- employment and business
1.3. Synopsis of types and forms of enterprises
1.4. Attitudes, characteristics & skills required to be an entrepreneur
1.5. Myths about entrepreneurs
1.6. Overview of MSMEs (Micro, Small and Medium Enterprises) in Nepal

Unit 2: Exploring and Developing Entrepreneurial Competencies: 9 Hrs.
2.1. Assessing individual entrepreneurial inclination
2.2. Assessment of decision-making attitudes
2.3. Risk taking behavior and risk minimization
2.4. Creativity and innovation in business
2.5. Enterprise management competencies

Unit 3: Business identification and Selection: 4 Hrs.
3.1. Sources and method of finding business idea(s)
3.2. Selection of viable business ideas
3.3. Legal provisions for MSMEs in Nepal

Unit 4: Business plan Formulation: 18 Hrs.
4.1. Needs and importance of business plan
4.2. Marketing plan
  4.2.1. Description of product or service
  4.2.2. Targeted market and customers
  4.2.3. Location of business establishment
  4.2.4. Estimation of market demand
  4.2.5. Competitors analysis
  4.2.6. Estimation of market share
  4.2.7. Measures for business promotion
4.3. Business operation plan
  4.3.1. Process of product or service creation
  4.3.2. Required fix assets

4.3.3. Level of capacity utilization
4.3.4. Depreciation & amortization
4.3.5. Estimation office overhead and utilities

4.4. Organizational and human resource plan
4.4.1. Legal status of business
4.4.2. Management structure
4.4.3. Required human resource and cost
4.4.4. Roles and responsibility of staff

4.5. Financial plan
4.5.1. Working capital estimation
4.5.2. Pre-operating expenses
4.5.3. Source of investment and financial costs
4.5.4. Per unit cost of service or product
4.5.5. Unit price and profit/loss estimation of first year

4.6. Business plan appraisal
4.6.1. Return on investment
4.6.2. Breakeven analysis
4.6.3. Risk factors

Unit 5: Small Business Management: 5 Hrs.

5.1. Concept of small business management
5.2. Market and marketing mix
5.3. Basic account keeping

Practical

Unit 1: Collect overview of business and entrepreneurship 2 Hrs.

- Collect business information through interaction with successful entrepreneur

Unit 2: Explore and Developing Entrepreneurial Competencies 2 Hrs.

- Generate innovative business ideas

Unit 3: Identify and select product or service identification and selection 2 Hrs.

- Analyze business ideas using SWOT method

Unit 4: Formulate business plan 22 Hrs.

- Prepare marketing plan
- Prepare operation plan
- Prepare organizational and human resource plan
- Prepare financial plan
- Appraise business plan
- Prepare action plan for business startup

Unit 5: Manage Small Business 2 Hrs.

- Prepare receipt and payment account
- Perform costing and pricing of product and service

Evaluation Scheme

Unit wise Marks division for Final Exam

Units	Title	Hours	Mark distribution
1	Business & Entrepreneurship	10	10
2	Exploring and Developing Entrepreneurial Competencies	10	10
3	Business identification and Selection	5	10
4	Business plan Formulation	40	40
5	Small Business Management	10	10
	Total	**75**	**80**

Third Year/ Second Semester

Internship/Practicum
HS 3201 ID

Third Year
Second Semester
Practical: 585 Hrs.

Course Description:

This course is designed to provide basic knowledge on Interior Design. It also imparts basic knowledge on Vastu Science and Special Population (Differently Able People) that helps in designing and layout. It gives simple knowledge on electrical, sanitation, budgeting and estimation. Thestudents will be placed *in Interior Designer firm, Company, government/agencies,* and other appropriate organization for internship for one semester.

Course Objective:

After completing thiscourse, the students will be able to:

- Familarize with the over all design cocept in ID.
- Applyof design principles,techniques,skills and presentation, methods of design,drafting and construction.
- Apply special population and Vastu principles in layout and design.
- Visit site and budgeting and estimating of a simple building, including electricity and sanitation.
- Deal with the client and able explain,convience.
- Focus on problem based practicallearningthrough experienceininterior and planning fields in the current market practice.

Course Contents:

Instructions and Requirements

- In this semisterstudents are required to register themselves as a trainee to assist Interior Designer/Architects/Engineers and Planners, in a firm, Construction Company or other related offices or governmental/non-governmental organization approved by the campus/department.
- The Student must compulsorily identify their trainning places/office/firms/companies before final exams.The work must done in design offices, especially in Interior Design offices.
- The students learn how to do agreement with the client, able to draft letter of agreement, services, time allocation etc.
- The area of work could be Interior design,Architectural design and planning or mix of these areas.
- Do research on the users and apply the appropriate techniques.
- Estimating, costingand preparation of tender documents,specification writing,preparation of presentation and working drawings and service drawings etc.
- The student must do site visit and total measurement of the project(offoce, residential, shoping complex buildings etc).
- The execution of the project and do up to POE (post occupancy evaluation).

- Log books will have to be maintened by students and counter-signed by the main person of the firm/agency and 90 working days is mandatory to fulfill the course. The campus/department will allocate depatmental supervisors and the accepting firm/company/ office will appoint their supervisor from amoung design consultant to assit students in their learning process.
    1. The Modality of supervision during the course of practicum will be as per the program fixed by the department.
    2. Evaluation and mark distribution

SN	Stage	Time	Mark	Responsibility
1	Preliminary Evaluation by collage	$5^{th}/6^{th}$week	25	Collage
2	Mid term evaluation	$11^{th}/12^{th}$week	50	Collage
3	Final Evaluation by employing agency/firm	$12^{th}/13^{th}$week	100	Employer agency
4	Final evaluation - viva Voce	$14^{th}/15^{th}$week	75	Collage
5	Final Report		50	CTEVT
	Total		**300**	

Final Exam/Evaluation : **3 Evaluaters** :

1. ID Expert

2. Internal Expert

3. CTEVT Expert.

Experts Involved in Curriculum Revision Process

1. Prof. Dr. Mathura Karki ID Expert, Pulchok Engineering Campus, Lalitpur.
2. Mrs Bindra Pradhan, President, IDEA Nepal, Interior Designer's Association.
3. Mrs Sailaja Adhikari, Principal, IEC College of Art and Fashion, Mandikhatar.
4. Mr. Sanuraja Shilpakar, Ex., President, IDEA Nepal, Interior Designer's Association.
5. Mr. Bikash Basukala, Coordinator, Kantipur International Collage, Buddhanagar, Kathmandu.
6. Mr. Ashok Maharjan, Trainer, IEC College of Art and Fashion, Mandikhatar.
7. Mr. Sangeet Poudel, Architect, Pebbles Design Pvt. Ltd.
8. Mrs. Rekha Shahi, ID expert, Kantipur International Collage, Buddhanagar, Kathmandu.
9. Mrs. Geeta Shrestha, ID expert, Kantipur International Collage, Buddhanagar, Kathmandu.
10. Miss Reshu Shrestha Trainer, IEC College of Art and Fashion, Mandikhatar.
11. Mrs Nikita Shrestha Trainer, Kantipur International Collage, Buddhanagar.
12. Mrs Arpana Bista, Trainer, IEC College of Art and Fashion, Mandikhatar.
13. Mrs Tara Shrestha, Trainer, Kantipur International Collage, Buddhanagar.
14. Mr. Dinesh Humagain, English instructor, Nepal Banepa Polytechnique Institute Banepa, Kavre.
15. Mr. Rishiram Dahal, Nepali instructor, Nepal Banepa Polytechnique Institute Banepa, Kavre.