



American International University-Bangladesh (AIUB)

Faculty of Engineering

Course Name:	COMPUTER AIDED DESIGN AND DRAFTING	Course Code:	BAE 2101
Semester:	Spring 2020-2021	Section:	K
Faculty:	Kazi Ahmed Asif Fuad	Assignment No:	1
Assignment Name:	OBE Assignment (CO2 & CO4)		
Submission Date:	23-04-2020, Friday (till 11:59 pm)		

Category	Excellent	Good	Acceptable	Secure d Marks
Civil Plan	The civil plan is unique and drawn as per requirements with proper dimensions [7-10]	The civil plan is drawn partially as per requirement with minor errors [4-6]	The civil is either copied or very poor with major errors. [1-3]	
Electric Fittings	The fittings are placed rationally and maintaining BNBC [4-5]	The fittings are placed rationally but not maintaining BNBC [2-3]	The fittings are placed randomly and not maintaining BNBC [1]	
Conduit Layout	The conduit layout is done properly maintaining color code and standard connection practices. [4-5]	The conduit layout is done maintaining color code but not maintaining standard connection practices [2-3]	The conduit layout is not done maintaining color code and standard connection practices. [1]	
Load Calculation	The load calculation is done correctly according to BNBC. [4-5]	The load calculation is done according to BNBC but with minor errors [2-3]	The load calculation is done not according to BNBC with major errors [1]	
Generator Capacity and Generator Room	The generator is chosen properly, and the generator room is designed according to BNBC [4-5]	The generator is chosen properly but the generator room is not designed according to BNBC [2-3]	The capacity of the generator chosen is wrong and also the generator room is not designed according to BNBC [1]	
Comments			Total Marks: (Out of 30 Marks)	

SL #	ID	Student Name	Department	Marks
1.				
2.				
3.				
4.				
5.				

Question # First of all, Congratulations! You have almost come to the end of this course. Now, let us consider a business opportunity! Say, you have been working as a group for last two months and you and your colleagues/classmates/friends are getting along with each other, now, you want to invest in a real-estate business. So as per plan, you have purchased a land of 1 Bigha at Bashundhara R/A, Dhaka. Now they want to construct a 11 Storied building (**Ground + 10 Floors**) of having 4 units – A, B, C & D in each floor. You are asked to design for only A unit flat of having **1750 sq-ft** (approx.) based on the following specifications:

- 4 Bed Room (size: Bedroom-1 (Master Bedroom 1) is 16' x 14', Bedroom -2(Master Bedroom 2) is 15' x 14', Bedroom -3(Kid's Bedroom) is 14' x 12' and Bedroom -4(Guest Bedroom) is 12' x 10')
- 4 bath (Size: Attached bath of Bed-1, 2 & 3 is 10'x 8', bath of Drawing (Common Bath) is 8' x 8')
- Living/Drawing (Size: 18' x 15')
- Dining (Size: 14' x 14')
- Kitchen (Size: 10' x 8')
- 3 Veranda (Size: Ver_Bed-1, 2 & 3 is 4' x 10')
- Store room (Size: 8'x6')
- Door for kitchen / bathroom / veranda - 2'6'', Door for Bed Room - 3' and Main Door 4' (interior to interior)

Considering the abovementioned specifications do the following using AutoCAD 2007 Software:

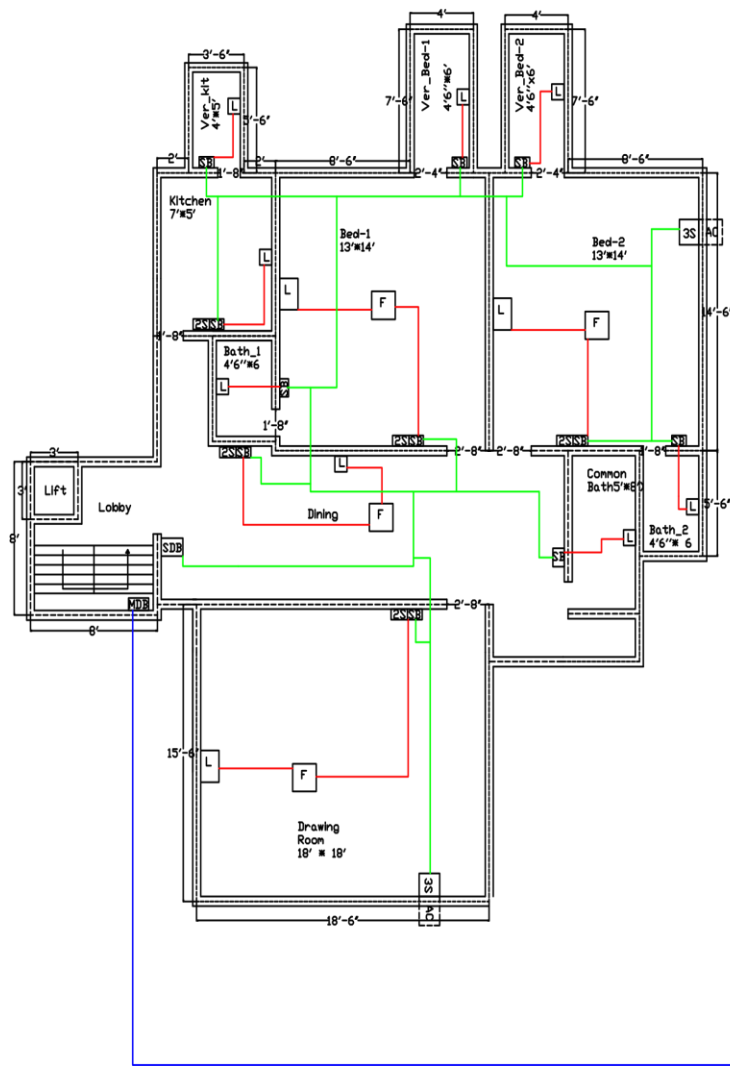
- i) Draw the Civil Plan (figure 1, .dwg file 1) of the flat along with stair, lift and lobby (Space: 25' x 20', which is excluded from the flat size). [*Hints: Brick to interior/exterior Offset distance = 10'', Stair Offset distance = 6'']. **10 points**
- ii) Draw the proper Electric Fittings (applying BNBC) (figure 2, .dwg file 2) **5 points**
- iii) Draw the electric conduit layout (Wiring – applying BNBC) (figure 3, .dwg file 3) where Yellow, Green & Blue color represents light load, medium load & heavy load respectively. **5 points**
- iv) Calculate the load for **one units only**. Also Calculate the load for each floor and load for the building considering all the flat types are same and same types of load. **5 points**
- v) Calculate the **capacity** of the **Generator** based on the load calculation. Draw a separate **Generator room** and **show** the connection with distribution board. (figure 4, .dwg file 4) **5 points**

Note:

- Please mention your Names, IDs in this file
- Please submit .dwg, screenshots file using AutoCad 2007
- Please save the file: Group_A_Final_Assignment_Spring_20-21
- Please submit in Microsoft Teams Form

Remember, any indication of cheating will result in final grade 'F' regardless everything.

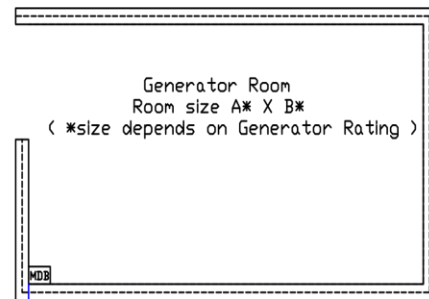
Sample Drawing



Legend

L1 - Light (? Watt)
 T1 - Tube Light (? Watt)
 F1 - Fan (? Watt) (Sweep - ? mm)
 2S1 - Two Pin Socket (? Watt / ? A)
 3S1 - Three Pin Socket (? Watt / ? A)
 Generator - ?? KW
 etc....
 (Include all the loads here and assign load as per BNBC . . .)

— Light Load
 — Medium Load
 — Heavy Load



Load Calculation:

Suppose, there are total 5 lights of 40 Watt and 3 Fan of 80 Watt, so total load should be $(5 \times 40) + (3 \times 80)$ or, 440 Watt. Similarly, include all the loads and calculate the **load** for **one unit**. Then, calculate the **load** for **a floor** just multiplying total loads of one unit with number of units in each floor and calculate **total load** for the **building** just multiplying the number of floors. In the ground floor comprises a small room (for MDB and water pump), garages and one small flat for security guard. So, calculate the load for the ground floor carefully.

*** You can follow the attached sample but don't think you need to design like this. You should use your imagination. Approximately 5 % deviation of total area in sft is acceptable.