

**CIVIL ENGINEERING DEPARTMENT
ACTION PLANS TO BE IMPLEMENTED TO IMPROVE CLO SCORE**

FIRST YEAR

Subject Name	Subject Code	Group	CLO-1	CLO-2	CLO-3	CLO-4	CLO-5	CLO-6	CLO-7
COMPUTER PROGRAMMING-I	UTA009	A	4.34	2.87	3.62	4.18	2.21	3.84	3.39
		B	3.85	2.93	4.01	4.2	2.63	3.2	2.96
		C	3.61	2.94	3.46	3.91	2.03	3.52	2.54
		D	3.48	3.1	3.37	3.87	2.57	3.47	3.01
		E	3.75	3.01	3.6	3.91	2.29	3.36	2.57
		F	3.42	2.75	3.51	3.96	2.01	3.64	3.29
		G	3.01	3.93	4.1	3.67	3.83	3.29	4.06
		H	3.52	2.85	3.35	3.86	2.63	3.37	2.4
		I	3.52	2.85	3.35	3.86	2.63	3.37	2.4
ENGG. DESIGN-1	UTA008	A	4.52	3.62	3.61	4.56	4.56	4.56	4.56
		B	4.47	3.61	2.79	4.38	4.38	4.38	4.38
		C	4.37	4.01	3.45	3.96	3.96	3.96	3.96
		D	4.58	3.76	3.49	4.18	4.18	4.18	4.18
		E	4.67	3.52	3.49	4.19	4.19	4.19	4.19
		F	4.48	3.71	3.25	4.31	4.31	4.31	4.31
		G	4.32	3.53	3.43	3.94	3.94	3.94	3.94
		H	4.33	3.76	3.76	4.09	4.09	4.09	4.09
		I	4.33	3.76	3.76	4.09	4.09	4.09	4.09
ELECTRICAL ENGG	UEED01	A	2.68	3.19	3.13				
		B	2.39	3.38	3.82				
		C	2.86	3.79	4.12				
		D	2.85	2.72	3.85				
		E	2.69	3.14	3.59				
		F	2.93	3.54	3.75				
		G	3.33	3.73	3.69				
		H	2.58	3.07	4.23				
		I	3.55	3.96	4.23				
MATHEMATICS-1	UMA001	A	3.92	3.69	4.06	3.6			
		B	3.51	3.28	4.45	3.28			
		C	4.39	3.63	4.01	3.13			
		D	3.37	3.15	3.96	3.58			
		E	3.37	3.15	3.96	3.58			
		F	3.85	3.46	4.25	3.11			
		G	3.56	3.01	3.71	3.14			
		H	3.56	3.01	3.71	3.14			
		I	3	3.38	4.59	3.56			
APPLIED PHYSICS	UPH004	A	4.17	2.83	3.59	3.38	3.46	4.5	
		B	3.9	2.9	3.63	3.23	3.41	4.15	
		C	4.21	2.57	3.65	3.55	3.25	4.32	
		D	4.28	3.14	3.86	4	3.75	4.22	
		E	3.69	2.3	3.47	3.24	3.14	4.19	
		F	3.77	2.41	3.44	3.36	3.19	4.05	
		G	3.84	2.21	3.4	3.34	2.96	4.09	
		H	3.82	2.83	4.07	4.06	3.7	4.38	
		I	4.18	2.62	3.73	3.93	3.38	4.18	

SECOND YEAR

Subject Name	CLO-1	CLO-2	CLO-3	CLO-4	CLO-5	CLO-6	CLO-7
SOILS & STRUCTURES	3.44	3.81	3.67	3.59	3.22		
OPTIMIZATION TECHNIQUES	3.22	3.95	4	3.08			
ENGG. DESIGN-III (BUGGEY PROJECT)	4.32	4.32	4.32	4.18			
THERMO-FLUIDS	3.43	3.31	2.69	3.51	3.99	3.46	3.19
BUILDING MATERIAL & CONSTRUCTION	3.89	3.04	3.8	3.78			

THIRD YEAR

Subject Name	Subject Code	CLO-1	CLO-2	CLO-3	CLO-4	CLO-5
SOIL MECHANICS	UCES01	3.45	3.29	3.33	2.5	
WSE	UCES02	3.03	3.24	3.62	2.87	
ADV. STRUCTURAL ANALYSIS	UCES03	3.3	3.82	3.34	2.24	3.45
STEEL STRUCTURE DESIGN-1	UCES04	2.55	4.26	2.75		
TRANSPORATION ENGG.-1	UCES05	3.26	4.14	3.3	3.33	3.44
CONSTRUCTION MANAGEMENT	UCES06	3.57	3.53	3.38	2.02	3.79

Year
Course Code
Course Name

First
UTA 008
Engineering Design-1

Action Plan:

Odd semester being relatively shorter than the even semester and this being the last topic in the contents, adequate number of lectures could not be devoted to this topic. Due measures have already been discussed and planned for implementation in the current semester.

Year
Course Code
Course Name

First
UPH004
Applied Physics

Action Plan:

The scope of the evaluation has been broadened for this particular CLO. In addition, it has been shifted to Mid semester test, so that students get adequate time for its preparation.

Year
Course Code
Course Name

First
UTA007
Computer Programming-I

Action Plan:

1. Since new students were enrolled in third counseling on 8th August, it was made compulsory for all the faculty members to take extras classes to cover the syllabus for new students and all the old students were also advised to attend the extra class.
2. After MST it was observed the students were finding some problem in understanding bit wise operators and logical operators: All the faculty members were advised to take special class to make these concepts clear to students.
3. Few areas where students were found to be lagging included: Static member functions, size of operator and this pointer and it was advised that from next time onwards more focus should be laid on covering these topic with special emphasis on examples which will make these topics more clear.

4. Students could not understand the files concept i.e. storage and retrieval in files very efficiently and it was decided that from next time onwards more focus will be laid on covering this topic in lab assignments.

Year	Second
Course Code	UES011
Course Name	Thermo Fluid

Action Plans:

The subject Thermo-fluid is divided into two components: Thermodynamics and Fluid mechanics. The students are divided into two groups. The 1st group learn thermodynamics upto MST and the 2nd group learns fluid mechanics. After MST, swapping takes place among the groups. I taught fluid mechanics to Group 4-6 of 2nd year B.E (CIE) upto MST and group 1-3 after MST. The feedback from the 1st group was used to improve the CLO as discussed below.

The CLO3 is “Ability to analyze fluid flow problems with the application of the mass, momentum and energy equations”.

Initially, It was decided to apply ‘self learning’ technique to the group of students (2CIE4 -6) upto MST in new subject Thermo-fluids (UES011). Only the derivations and basics were discussed in the class. Students were advised to practice numerical problems by themselves by taking help of books or online-resources apart from the tutorial problems and discuss the same in case of any further doubt or difficulty. However, it was found that in a particular CLO3 students were not able to perform well (i.e., less than 3). Feedback of the students just before MST indicated that discussion of more numerical in the lecture class will help them.

Based on the feedback of the previous groups:

1. More numerical were discussed in the lecture class along with the fundamentals of the subjects to the new group of students (2CIE1-3).
 2. Students were asked to go through the derivations by themselves as a part of self-learning. It helped to manage the time of the class and more numerical problems could be discussed in the class.
 3. It was found that the process worked well, and the student groups performed better in the EST. The CLO3 improved to more than 3.
 4. The same practice of discussing more numerical in the class is being followed in the present semester also.
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Year
Course Code
Course Name

Third
UCE501
Soil Mechanics

Action Plan:

CLO4 for UCE501 Soil Mechanics course is "Determine the shear strength of soils by various methods" covers shear strength of soils, which is a very important topic in geotechnical engineering. The topic covers the understanding of Mohr circle, shear failure criteria in soil, direct shear and tri-axial tests to determine the shear strength of soils, concept of stress-path and pore pressure parameters. These topics, especially Mohr circle, triaxial tests and stress-path are difficult to comprehend at first and require a minimum of 6 lectures. Triaxial shear experiments are performed in subsequent semester with foundation engineering course. Hence, students find it difficult to motivate themselves of trying to understand the concepts related to experiments.

During first few weeks of course all students were complaining that they are not being explained the experiments in practical class (5 of the 6 groups were taken by TAs who were maybe getting acquainted with the experiments). Hence, I started explaining each of the experiment in absolute detail during lectures. This distorted my course blow-up and by the time I reached shear strength chapter, I had only 4 lectures left, that too in last 10 days before EST. It's that time when students have their focus on evaluations and are too exhausted to grasp a new topic. There was no time for tutorial either. All these factors, in my opinion compounded to low outcome score.

1. First remedial measure I will do is to make sure 6 lectures are delivered as per course blow-up. To make sure of same, I will stick to course blow up for Index property chapter so that rest of course schedule don't suffer.
2. In addition, tutorial will be taken up for the topic.
3. As long term solution, I plan to bring triaxial tests in soil mechanics course rather than foundation engineering as the disconnect between theory and practical has to be removed.

Year
Course Code
Course Name

Third
UCE504
Steel Structure Design-1

Action Plan:

CLO 1 covers largely the design portion. In order to students understanding more design problems will be taken in the class and assignments will be given. In addition

tutorial sheets will be redesigned with more emphasis on the design portion to improve students' concepts regarding design

CLO 3 deals with design and analysis of compression member and many topics have to be covered to achieve this CLO. More emphasis will be laid on this topic by giving more number of lecture hours to this topic. More numerical problems related to analysis and design portion will be added to the tutorial sheet so that students can practice more. Tutorial and quiz evaluation scheme will be changed. Tutorial for 15 marks and quiz for 10 marks. Tutorial evaluation will be on basis of frequent tests. In addition, tutorial will be designed more interaction to improve two way communications in future

Year	Third
Course Code	UCE503
Course Name	Advanced Structural Analysis

Action Plan:

For CLO 4 for UCE503 Advanced Structural Analysis, the course Instructors have drawn up an action plan suggesting some corrective measures for the improvement of the score. The question used to measure the CLO was the analysis of a portal frame by Flexibility Method, with the major component being the calculation of deflections under various loadings. The following measures are being adopted:

1. The calculations of deflections are currently being taught to B.E. Second Year in Structural Analysis. More no. of lectures have been allocated to covering this topic, specially the Unit Load Method.
2. The Unit Load Method is the most commonly used method for the construction of Flexibility Matrix. It is proposed that from next time the students will be provided a review tutorial sheet in covering this method in Advanced Structural Analysis, so that the topic can be refreshed in their minds.
3. The level of Tutorial problems of calculation of deflections has been increased (in the current Tut sheets of SA-I), with more emphasis on numericals related to Portal frames, which the students find more difficult to handle.
4. More one-on-one time will be provided to the students in the tutorials to discuss their doubts and thereby make their basic concepts stronger

Year
Course Code
Course Name

Third
UCE502
Water supply engineering

Action Plan:

The CLO4 for water supply engineering is to understand the principles of water treatment and design treatment units.

As an instructor, I would suggest the following to improve the CLO scoring for the above.

1. Emphasize in lectures the basic design elements and their utility in designing water treatment units.
2. More focus in tutorials for solving design aspects of water treatment units is essential.
3. Taking students to nearby water treatment plants for better understanding the principles of working of treatment units may be practiced.