Proposed CO-PO of CSE 400

Table 1: COs-POs along with Semester applied and Marks distribution

COs	Description	PO	Assessment	Marks	Semester
CO1	Identify a real-life problem that can be translated to an engineering and/or computing solution through design, development and validation	(l) Life-long learning	Report	30	4_1
CO2	Identify outcomes and functional requirements of the proposed solution considering software and/or hardware specification and standards	(b) Problem analysis (c) Design/development	Report	10	4_1
CO3	Identify sub components of a complex problem, prepare timeline and appropriate budget using the project management skill	(k) Project management and finance	Report	10	4_1

CO4	Identify and validate the impact of environmental considerations and the sustainability of a system/subsystem of a complete project	(g) Environment and sustainability	Report	5	4_1
				5	4_2
CO5	Assess professional, ethical, and social impacts and responsibilities of the design project	(f) The engineer and society (h) Ethics	Report	5	4_1
				5	4_2
CO6	Function effectively in a multi disciplinary team	(i) Individual work and teamwork	Reflective Journal / Version Control	20	4_1
				20	4_2
CO7	Analyze, design, build, and evaluate engineering/computing system/subsystem with given specifications and requirements	(c) Design/development (d) Investigation (e) Modern tool usage	Project Demo	40	4_2
CO8	Present design project results through written technical documents and	(j)Communication	Report, Presentation	20	4_1

	oral presentations			30	4_2

1) **Final Mark = 0.3 * (Marks obtained in 4-1) + 0.7 * (Marks obtained in 4-2)**

2) Department will assign one external evaluator/guide per Group in addition to the supervisor, from 4th year 1st semester. External guides will be responsible for ensuring quality of the project as per OBE guideline of Complex Engineering Problem and crosscheck the deliverables of the project.

3) Every group should submit the mapping of CO_PO and P's and A's (an example of such mapping is attached) along with the report of CO1. This report should be submitted to the department before Mid term examination of 4-1 semester along with the signature of the supervisor and the external evaluator/guide.

Remarks :

1) COs covered in 4th year 1st semester : CO1 – CO6, CO8. Total marks: 100 (for marks distribution please see table 1)

2) COs covered in 4th year 2nd semester: CO4 – CO8. Total marks: 100 (for marks distribution please see table 1)

3) Every group must achieve each and every COs as per UAP guideline for OBE system.

4) However, each may have different P's and A's of Complex Engineering Problem (CEP)

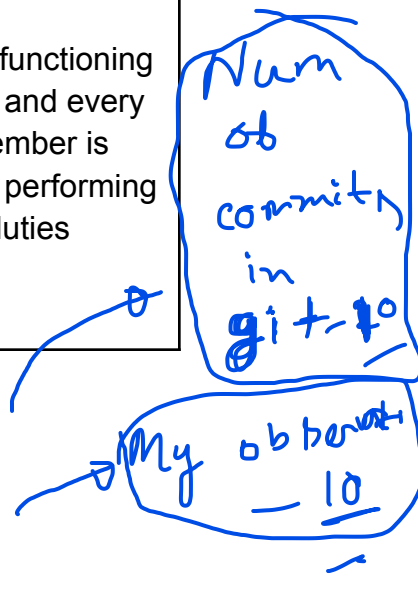
5) Supervisors should guide students to fulfill requirement of Complex Engineering Problems

COs	Description	Marks	Unsatisfactory (1) (<40%)	2 40% to 59%	3 60% to 79%	4 80% to 100%
CO1	Identify a real-life problem that can be translated to an engineering and/or computing solution through design, development and validation	30	Demonstrates an inability in identifying a problem statement or related contextual factors	Begins to demonstrate the ability to construct a problem statement with evidence of most relevant contextual factors, but problem statement is not complete	Demonstrates the ability to construct a problem statement with evidence of most relevant contextual factors, and problem statement is adequately detailed	Demonstrates the ability to construct a clear and insightful problem statement with evidence of all relevant contextual factors

1. intro-5
2. Related work - 5
3. Proposed Metho - 10
4. book grad - 10
study -

CO2	Identify outcomes and functional requirements of the proposed solution considering software and/or hardware specification and standards	10	Demonstrates **the inability** in identifying or not justifying outcomes and functional requirements of the proposed solution software and/or hardware specification and standards listed **not justified**	Identified outcomes and functional requirements but **not complete** software and/or hardware specification and standards listed **need improvement**	Demonstrates the ability to Identify the **most** relevant outcomes and functional requirement **Major** components of software and/or hardware specification and standards are considered	Demonstrates the ability to Identify the **all** relevant outcomes and functional requirements **All** required components of software and/or hardware specification and standards are considered
CO3	Identify sub components of a complex problem, prepare timeline and appropriate budget using the project management skill	10	**Could not** identify the sub components **No** timeline provided **No** budget/cost analysis provided	**Not all** sub components are identified Provided Timeline is **not practical**. Budget preparation is **not practical**	**Major** sub components are identified **Few Components** of the presented Timeline are not practical	**All** sub components are identified Provided Timeline is **practical** Budget analysis is **practical**

					Budget needs **improvement**	
CO4	Identify and validate the impact of environmental considerations and the sustainability of a system/subsystem of a complete project	5	Not considered / unclear	**Not all** issues are identified and validated	Most relevant issues are identified and validated	All issues are identified and validated
		5				
CO5	Assess professional, ethical, and social impacts and responsibilities of the design project	5	Not considered / unclear	**Not all** issues are identified and validated	Most relevant issues are identified and validated	All issues are identified and validated
		5				
CO6	Function effectively in a multi disciplinary team	20	Fail to function as a team and individual performance is not satisfactory	Team is functioning partially and the members of the team should work harder to improve the performance	Team is functioning moderately but there is a scope for improvement in individual performance	Team is functioning properly and every team member is properly performing his/her duties



		20				
CO7	Analyze, design, build, and evaluate engineering/computing system/subsystem with given specifications and requirements	40	Analysis is **not** performed Design/ detailing of components is **not** done	Analytical methods are not appropriate with the project objective. Design is not appropriate	Analytical methods need improvement to achieve the project objective. Design is not complete	Analytical methods are appropriate with the project objective. Design is appropriate and complete
CO8	Present design project results through oral presentations	20	Poor presentation Body language / Professionalism is not appropriate Failed to answer questions	Not appealing presentation Body language / Professionalism is not sufficiently appropriate Partially addressed few questions	Spoken and visual presentation mostly integrated Body language / Professionalism needs improvement Could answer all the questions but few answers are not satisfactory	Effectively integrates spoken and visual presentation Body language / Professionalism is appropriate Satisfactorily answered all relevant questions

		30				