150 Points Possible

| Attempt 1 ⌄	◯ In Progress **NEXT UP: Submit Assignment**	🗩 Add Comment

4 Attempts Allowed

⌄ **Details**

M2 Project: State Space Modeling

This is a group project. Please make one submission as a group. The Project Groups have been assigned and you can see who your team members are by clicking on People from the left-hand side navigation menu.

Answer the following and check the rubric before submission:

1. For the system shown, find the equivalent electric circuit and **draw** it.
2. **Write the governing voltage equations for $v_1(t)$ and $v_2(t)$ in terms of currents $i_1(t)$ and $i_2(t)$** given $Z_{Load}=R_L$ $+jX_L$ and coils 1 and 2 resistances R_1 and R_2 **(use symbols only)**.
3. Use MATLAB to **plot the current $i_1(t)$ and $i_2(t)$,** assuming the following: f=60 Hz, v1(t)=120 cos(ωt) & Z_{Load}=20 $\angle$ +30° Ω, R_1=0.2 Ω and R_2=0.4 Ω.
4. Calculate the load real, reactive, and complex powers and **write down the values**.

Make sure to include MATLAB code in an appendix.
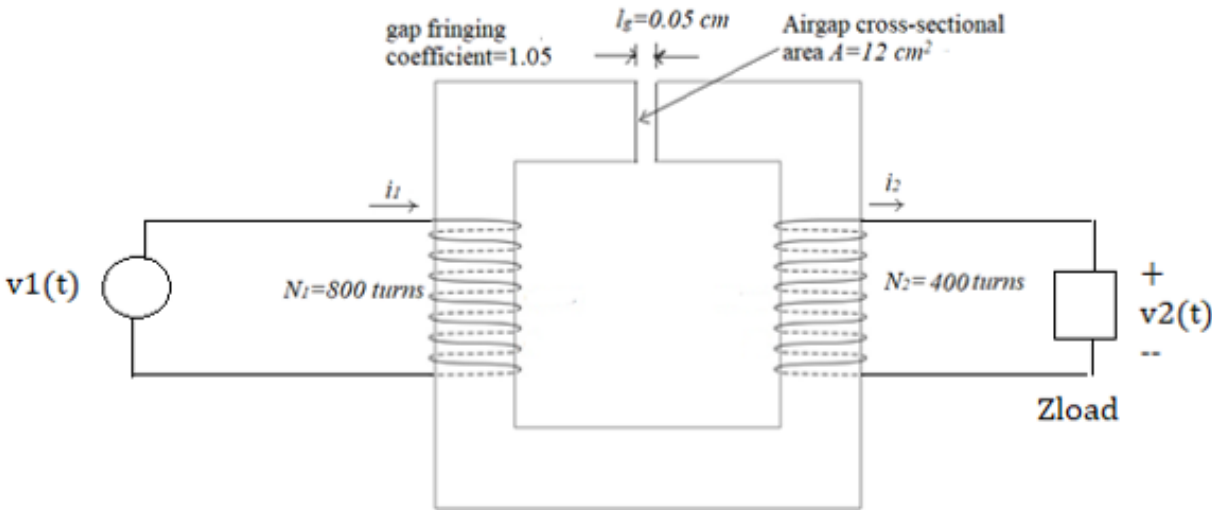
Submission Instructions

1. Follow the instructions above. Your submission should be **typed**, **clear**, **organized**, **and showing your work**.
2. Submit the completed project to this assignment. Only one team member needs to submit the assignment. It must be submitted as a single .pdf file, readable, with all pages right side up. Files that are not submitted correctly will not be graded.

? If you need more help with working in groups in Canvas, please check out the following Canvas Guides: **How do I view my Canvas groups as a student?** 🡒 (https://community.canvaslms.com/t5/Student-Guide/How-do-I-view-my-Canvas-groups-as-a-student/ta-p/281) and **How do I submit an assignment on behalf of a group?** 🡒 (https://community.canvaslms.com/t5/Student-Guide/How-do-I-submit-an-assignment-on-behalf-of-a-group/ta-p/294).

⌄ **View Rubric**

M2 Project Rubric

Criteria	Ratings	Pts

M2 Project Rubric

Criteria	Ratings					Pts
Appropriate Technical Knowledge	**100 to >91.67 pts** **Excellent-Full Marks** The work provided is appropriate for the current completion level and includes explanation/ justification of: calculation importance/ relevance, equations, result of calculation, and how result was used.	**91.67 to >83.33 pts** **Good** Doesn't fully meet the "excellent" criteria for full marks.	**83.33 to >75 pts** **Needs Improvement** Doesn't meet some "excellent" criteria for full marks. Drawings or deliverables have formatting issues, look less-than-professional, or in some ways are incomplete.	**75 to >50 pts** **Poor** Limited attempt at producing complete and professional-quality drawings and deliverables.	**50 to >0 pts** **Unsatisfactory** Team did not include significant or meaningful deliverables.	/ 100 pts
Overall Technical Writing	**20 to >17 pts** **Full Marks** Submission is typed including equations. Team appropriately applied tool within its limitations, and discussed. Results are analyzed and the analysis were clearly and concisely presented. Document is written in clear and concise language. The organization and style of the document make it easy to read.	**17 to >13 pts** **Good** Doesn't fully meet the "excellent" criteria for full marks. Team provided most or all of the necessary elements, but lacked some expected detail.	**13 to >10 pts** **Needs Improvement** Team provided some of the necessary elements, but lacked some expected detail.	**10 to >5 pts** **Poor** Team lacked expected detail.	**5 to >0 pts** **No Marks** This sections was barely addressed or not addressed at all.	/ 20 pts
Drawings & Draft Deliverables	**10 to >7 pts** **Excellent-Full Marks** Team included appropriate drafts of images and graphics look like professional work. produced using modern tools and techniques. All are labeled/referenced properly, and properly annotated.	**7 to >5 pts** **Good** Doesn't fully meet the "excellent" criteria for full marks.	**5 to >2 pts** **Poor** Limited attempt at producing complete and professional-quality drawings and deliverables.	**2 to >0 pts** **No Marks** Team did not include significant or meaningful deliverables.		/ 10 pts

M2 Project Rubric

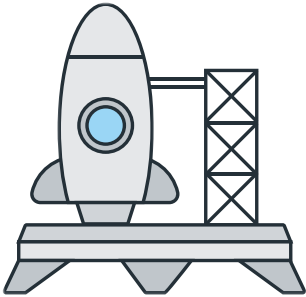| Criteria	Ratings				Pts
Spelling & Grammar	**10 to >6 pts** **Excellent-Full Marks** No spelling or grammar errors in the paper.	**6 to >4 pts** **Good** A few spelling or grammar errors in the paper.	**4 to >0 pts** **Poor** Several spelling or grammar errors and needs significant improvement	**0 pts** **No Marks** Too many spelling or grammar errors in the document.	/ 10 pts
Formatting & Citations view longer description	**10 to >6 pts** **Excellent-Full Marks** Cover page, TCO, tables/figures referenced and appropriate IEEE citations throughout document where appropriate.	**6 to >4 pts** **Good** Doesn't fully meet the "excellent" criteria for full marks.	**4 to >0 pts** **Poor** Errors across document in formatting, tables/ fig, and citations.	**0 pts** **No Marks** No citations provided.	/ 10 pts

Total Points: 0

Keep in mind, this submission will count for everyone in your Project Groups group.

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