Thermal and Electrochemical Energy Laboratory (TEEL)

Abel Chuang
Vision

Make Positive Impact on Technology and People by performing cutting-edge research and producing engineers with desirable skills and positive attitude.
Mission

We recruit and train students and scholars to generate impactful patents, publications, and products by performing unique and innovative researches in thermal and electrochemical technologies.
TEEL Laboratory Values

• Pursue excellence through hard work
• Take initiatives
• Be on time
• Be respectful and thankful
• Be responsible and accountable
• Team above individual
• Always do your best
• Always speak the truth
• It’s ok to say “I don’t know”
• Admit mistakes instead of find excuses
• Find solutions instead of complaining

If you don’t agree with these values, please schedule a meeting with the professor for detail discussion.
TEEL Laboratory Rules

• Be safe (No open-toe shoes, loose clothes, shorts, etc.).
• Learn to use the eyewash fountain and safety shower.
• Evacuate if alarm sounds.
• Follow manuals and SOPs for equipment operation.
• Use safety goggles and lab aprons as instructed.
• Use care when handling chemicals.
• Report all accidents regardless of how minor to PI.
• Return all tools and materials and clean up after your work.
• Keep a focus on your projects and experiments.
• Take notes of your experiment.
• Respect other laboratory members.
TEEL Laboratory Roles

- Faculty (PI)
- Visiting Scholar
- Post-Doctoral Scholar
- Lab. Staff
- TEEL Lab.
- Ph.D. Students
- Master Students
- Under-Graduate Students
- Exchange Students
- Graduate Students
Bi-Weekly Group Meeting

• Every other Saturday at 8:30 – 10 am in SE2 224
• Agenda:
  – Group reading: review scientific articles that are related to our research and most importantly discuss their strengths and weaknesses.
  – Research Progress: students take turns presenting the research they’ve done since their last presentations.
  – Laboratory Interaction: students to communicate with each laboratory member.
• Coordinator: Felipe Mojica
  – Solicit and email out agenda before Thursday 5 pm.
  – Send out reminder on Friday before 5 pm.
  – Assign individual to take meeting minutes.
  • Template: Box\SEII_230H_Laboratory\Meetings\Meeting Minutes_Template.docx
  – Review meeting minutes and email it to PI for approval before Monday 5 pm.
  – Archive the meeting minutes in Box folder after approval:
    • Box\SEII_230H_Laboratory\Meetings\2015
Laboratory Member Performance Review

- One-on-one meeting.
- Twice a year (June and December).
- Required for every laboratory members.
- Review and evaluate laboratory member’s progress.
- Clarify professor’s expectations.
- Discuss future plans.
- Set performance goals together.
- Give feedback to professor.
- All discussions will be kept confidential between you and the professor.
- Template:
  - Box\SEII_230H_Laboratory\Forms_Template\Performance review form.docx
My General Expectations

• All laboratory members to work and study hard.
• Don’t be late turning in your assigned tasks to professor.
• Be prepared for meeting and take notes.
• Always use presentation template and rehearse your presentation.
  – \SEII_230H_Laboratory\Forms_Template\Teel_presentation template.pptx
• Format your report and include citations.
• Never alter research results, never copy from others, always cite appropriately.
• Always store research data and results on box folder.
• Advance notification for vacation and long leave.
• Authorship of papers:
  – First author: the one responsible for the project and has done most of the writing.
  – Only include the ones that have made contribution to the actual work.
  – Professor is the corresponding author.
Undergraduate Student Experience

• My Expectations:
  – GPA > 3.5 (after joining the laboratory).
  – Attend every bi-weekly meeting.
  – Prepare assigned tasks and deliver them professionally.
  – Reach out to senior laboratory members to assist in any way you can.

• Possible outcomes:
  – Switch laboratory: does not fit in with laboratory vision, mission, and values.
  – Graduation: successfully finish all course work in time.
  – Successfully apply for graduate school or secure a job.
Master Student Experience

<table>
<thead>
<tr>
<th></th>
<th>Plan I - Thesis</th>
<th>Plan II – Non-Thesis</th>
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</thead>
<tbody>
<tr>
<td><strong>GPA</strong></td>
<td>&gt; 3.0</td>
<td>&gt; 3.0</td>
</tr>
<tr>
<td><strong>Course work</strong></td>
<td>&gt; 20 units of course work</td>
<td>&gt; 28 units of course work</td>
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<td></td>
<td>&gt; 8 units of research</td>
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</tr>
<tr>
<td><strong>Graduate seminar</strong></td>
<td>&gt; One semester</td>
<td>&gt; One semester</td>
</tr>
<tr>
<td><strong>Final Gate</strong></td>
<td>Thesis defense</td>
<td>Oral comprehensive exam</td>
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</tbody>
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- **My Expectations:**
  - GPA > 3.5; Two years of study; 1 journal publication (Thesis option)

- **Possible outcomes:**
  - Switch advisor: does not fit in with laboratory vision, mission, and values.
  - Switch from Plan I to Plan II: does not meet research expectations.
  - Graduation: successfully pass all requirements in time.
Doctoral Student Experience

• My Expectations:
  – GPA > 3.7
  – Four years of study
  – 3 journal publications

• Possible outcomes:
  – Switch advisor: does not fit in with laboratory vision, mission, and values.
  – Switch from Ph.D. to M.S.:
    • Does not pass preliminary exam or qualify exam.
    • Does not meet research expectations.
  – Graduation: successfully pass all requirements in time.

<table>
<thead>
<tr>
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<th>Ph.D.</th>
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<tbody>
<tr>
<td>GPA</td>
<td>&gt; 3.0</td>
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<tr>
<td>Course work (Ph.D.)</td>
<td>&gt; 12 units of course work</td>
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<tr>
<td>Graduate seminar</td>
<td>&gt; Two semesters</td>
</tr>
<tr>
<td>Teaching Assistant</td>
<td>&gt; 1 semester</td>
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<tr>
<td>Preliminary exam</td>
<td>Pass &lt; two years</td>
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<tr>
<td>Proposal and Qualify exam</td>
<td>Pass</td>
</tr>
<tr>
<td>Conference or Seminar</td>
<td>&gt; 1 presentation</td>
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<tr>
<td>Final Thesis Defense</td>
<td>Pass</td>
</tr>
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Postdoctoral Scholar Experience

• Research
  – Spend significant hours in the laboratory.
  – Perform independent and innovative research everyday.

• Writing
  – Generate journal publication: more than 2 publications per year.
  – Write funding proposal: more than 2 proposals per year.

• Teaching
  – Teaching can be arranged if there’s a strong interest.
  – The opportunity is based on the need of the school.

• Mentoring
  – Coordinate laboratory research activities.
  – Supervise laboratory members including staff, graduate students and undergraduate students.
Time Management

• First priority: finish tasks assigned by professor on time.
• 3 credit course: devote a **maximum** of 9 hours **weekly** including lecture, study, solving homework problems, etc.
• 50% Teaching Assistantship: devote a **maximum** of 20 hours **weekly**.
• 25% Teaching Assistantship: devote a **maximum** of 10 hours **weekly**.
• Preparation for preliminary exam and qualifying exam:
  – Self-study at night or during the weekend.
• To be a successful graduate student, one needs to be goal oriented and be ready for extended working hours.
• It is reasonable for a graduate student or research staff to work on an average of **60~80** hours per week.
• If you cannot manage your time or work effectively, please record your daily timesheet and schedule a meeting with the professor ASAP.
My Promises to Laboratory Members

• I will be available.
• I will provide timely and truthful feedback.
• I will challenge you to improve.
• I will encourage you to learn from your mistakes.
• I will listen to your feedback.
• I will treat you with respect.
• I will do my best to help you succeed.
Any Questions?