

# MEETING MINUTES

Our group met with Dr. Lee on Saturday, September 16. This meeting was run by Dr. Lee; he updated us on researching electron guns for purchase. We all then browsed the internet for to find venders. With Dr. Lee's approval, we divided up the approved venders to each member to contact for an estimate cost. It was decided that the estimates needed to be reported to Dr. Lee on Saturday, September 23. On Tuesday, September 19, another group meeting was held to discuss the Preliminary Report and to discuss the requirements set by Dr. Oman. We also discussed the customer needs, the engineering requirements, and a construction of a Gantt Chart. As a group, we dedicated goals for each member to complete by Tuesday, September 26.

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## *Announcements:*

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Saturday:

- Need to purchase an Electron Gun
- Need to start developing sample holder concept ideas

Tuesday:

- Go over schedule and organize dates given by Dr. Lee
- Start Preliminary Report rough draft

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## *Individual Report*

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Tuesday:

- Each member has done their share of research to understand the basic concepts of this project
  - All research must still be compiled and shared with the group
- Nikki, Kirsten and Dalton have all contacted their assigned venders prior to the meeting
  - Colin contacted his vender during the meeting

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## *Team discussion*

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**Saturday, 9/16: 9:20am-11:56pm – Attendees: Nikki, Kirsten, Dalton, Colin, Dr. Lee – Dr. Lee's Office**

- All researched potential ideas for electron gun
  - Decided to research electron gun venders
  - Spent a lot of time discussing electron gun specifications

- All researched vendors
  - Found about four potential vendors and divided up responsibilities to contact each vendor

**Tuesday, 9/19: 6:51pm-8:20pm – Attendees: Nikki, Kirsten, Dalton, Colin – EGR internet Cafe**

- Dalton worked on sections 1.1 and 1.3 of the preliminary report.
- All discussed customer needs:
  - Heat sample to 1450°C
  - Heat sample at a rate of 1°C/s
  - Measure desorption data with time resolution of 2μs
  - Monitor mass up to m/z = 50
  - Shield the turbo pump from shock
  - Design a new, functional sample holder
  - Add protection of “oaTOF” for exposure to high temperatures
- Most important CN’s:
  - Heat the sample to 1450°C, heat at a rate of 1°C/s, shield turbo pump from shock, and design a new functional sample holder
- Engineering Requirements:
  - Low project cost
  - 2 Nanosecond resolution
  - Meets m/z = 50
  - Diverse materials that work electrically and thermally
  - Electrically and thermally insulated
  - Heat sample at a rate of 1°C/s
- Nikki Worked on creating a Gantt chart as seen in Appendix A.

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*Action Items*

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Dalton:

- Complete rough draft of section 1 for the Preliminary Report
- Ask Professor Willy about heat transfer out of sample
- Ask Willy how to measure the temperature of the sample

Nikki:

- Ask Professor Ciocanel about Joule heating a sample of stainless steel and FEA software
- Update Gantt Chart for overall project dates
- Help other members complete rough draft of the Preliminary Report

Colin:

- Email Dr. Lee with vendor prices

- o Email Dr. Oman/Jeremy and set up a meeting to discuss preliminary report issues and request last semester report
- o Email Ben Hardesty about helping us with this capstone
- o Complete rough draft for other sections in the Preliminary Report

Kirsten:

- o Gather and compile research for group
- o Make House of Quality template and input known ERs and CNs
- o Complete rough draft of section 3 for the Preliminary Report

Appendix A

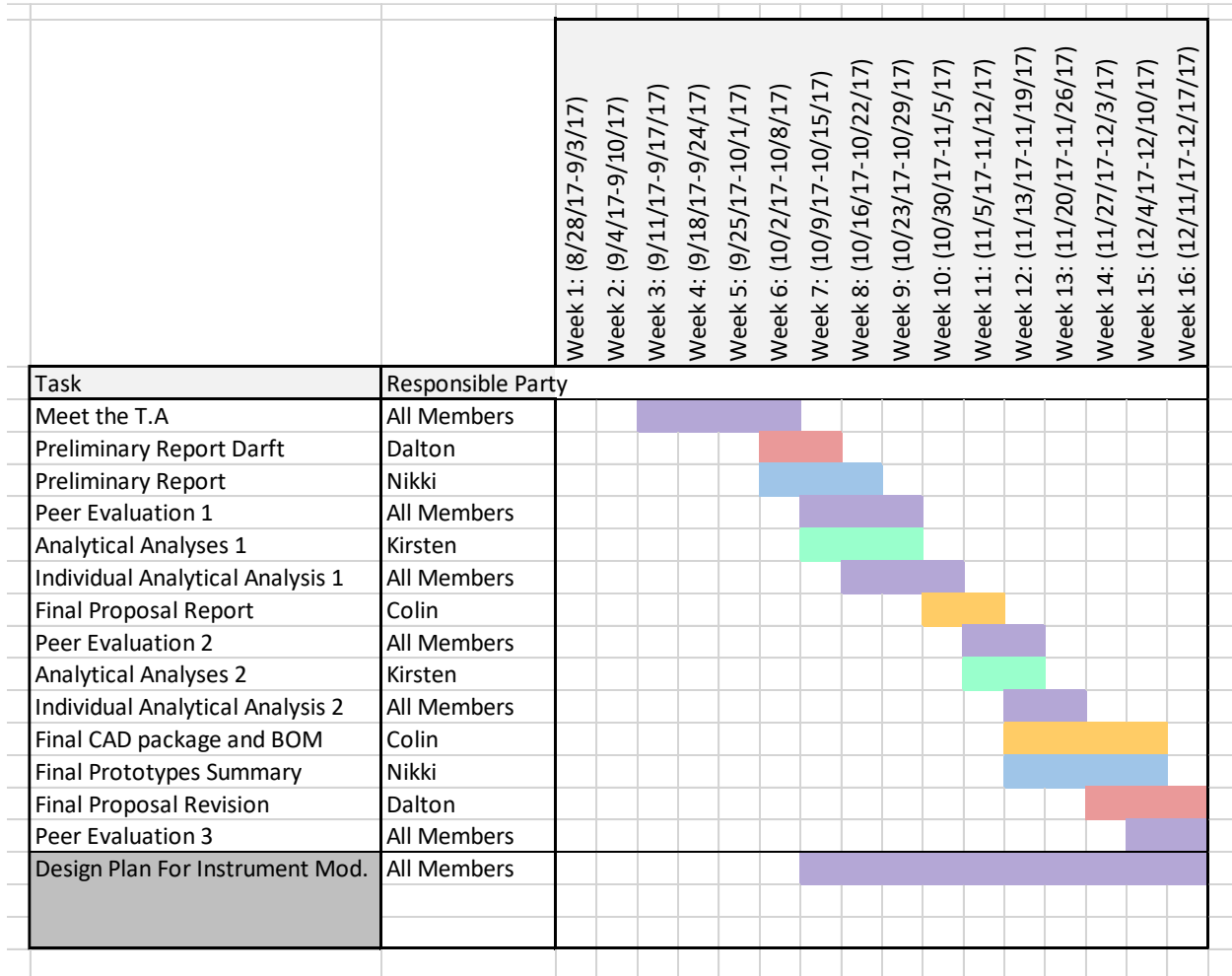


Figure A: Gantt Chart for Fall Semester