

## **Meeting Minutes**

### **Log of Meeting Notes:**

Document is chronological with most recent dates on top. An empty log is at the top to preserve template format.

# Meeting Minutes

00/00/20

Standard Team Meeting

**Bold items were added during the meeting.**

Below is an unorganized chronological list of items discussed.

- [Item]
  - [Sub-item]

# Meeting Minutes

12/10/20

Standard Team Meeting

**Bold items were added during the meeting.**

Below is an unorganized chronological list of items discussed.

- Snapshot 2 remarks (if any)
- Individual logbook submission - (emailed to you as a pdf)
- Logbook Self-Review Form, on Mindworks, it's listed on the last day of the schedule (we will email it to you along with our logbooks)
- Portfolio (with COVID, the group's online folder)
- Wikipedia (it is up to date, and online)
- **Dr. Maughan recommends we continue meeting**
- **Cameron – LCD screen and user input via buttons**
- **Keegan – Figure out linear actuator and possible mounting locations**
- **Joseph – source material, quote (\$), with engineering calculation,**
- **Mark – Load cells**
-

# Meeting Minutes

12/07/20

Standard Team Meeting

**Bold items were added during the meeting.**

Below is an unorganized chronological list of items discussed.

- Snapshot 2 Debrief
- Individual assignments for this week
- Individual assignments for break
- Pick each aspect of our final design
  - Details and calculations on why we use each component, bolts,
  - User interface

# Meeting Minutes

12/03/20

Instructor Team Meeting

**Bold items were added during the meeting.**

Below is an unorganized chronological list of items discussed.

- Review slide for Snapshot 2
  - ~~Smaller text~~
  - ~~Equations larger~~
  - ~~Background, grammar~~
  - **Shift middle column leftward**
  - **CG image**
  - **FBD**
  - ~~Add block to stand~~
  - **Talk about human machine interface, user input**
  - **Where we are with the Budget**
  - **Where we are with the Schedule**
  - **Background section needed revision, consider adding a photo showing what the CG is.**
  - **Show what we have accomplished (our success with X,Y, and Z)**
  - **Incorporate Design Review comments**
  - **Could we use the prior team's load cells?**
  - **FYI for Jonathan**
- Additional items Dr. Maughan would like to address

# Meeting Minutes

12/02/20

Standard Team Meeting

**Bold items were added during the meeting.**

Below is an unorganized chronological list of items discussed.

- Updates from individual tasks from the break
  - COG's prototype testing
  - Tabletop design changes
  - Sheet metal purchase
    - 6 days wait period
- Snapshot 2
  - Possible Schedule Conflicts
  - Slide Creation
- Individual task assignment the next week

# Meeting Minutes

11/19/20

Standard Team Meeting

**Bold items were added during the meeting.**

Below is an unorganized chronological list of items discussed.

- Design Review Debrief
- Upcoming due dates
  - Team Member Citizenship (11/20) - **Email a word document using the abbreviations form email**
  - Snapshot 2 (12/04)
    - Practical applications
  - COG's prototype testing
  - Table top design changes
  - Sheet metal purchase
    - 6 days wait period
  - Code introduction

# Meeting Minutes

11/17/20

Standard Team Meeting

**Bold items were added during the meeting.**

Below is an unorganized chronological list of items discussed.

- Design Review Debrief - hesitantly **Check Dr. Maughan**
- Upcoming due dates
  - Snapshot 2 Friday, 4th after break
  - Wikipedia, logbook, portfolio (file submission), ask Dr. Maughan about portfolio changes
    - Readme files to add to portfolio
- Assignments for this week
  - Assembly
  - Testing
  - Modeling
  - Purchase Parts
    - Order plate for table top
  - Code:
    - Load cells
    - Screen
    - Linear Actuator
    - Stepper motor
- Break discussion



## Meeting Minutes

11/12/20

Client Instructor Team Meeting

**Bold items were added during the meeting.**

- Review Design Review documents
- Additional items for Design Review Meeting

## Meeting Minutes

11/05/20

Standard Team Meeting

**Bold items were added during the meeting.**

Below is an unorganized chronological list of items discussed.

- Items to address with Dr. Maughan:
  - Design review with SEL – Time slot
    - **Friday the 13<sup>th</sup> @ 12:00 pm**
    - **Let Swenson know**
  - Value Proposition
    - **More broad**
  - Wiki page draft
  - Mathematics
    - Verification of model
    - **Look at references**
    - **Other techniques**
  - Design implementation – 3D modeling, sensor Implementation, etc.
- Team Meeting to discuss plan

# Meeting Minutes

11/03/20

Standard Team Meeting

**Bold items were added during the meeting.**

Below is an unorganized chronological list of items discussed.

- Upcoming due dates
  - **Value Proposition**
  - **Wiki page draft - already completed by Piyush**
- Prior Meeting Items
  - Table Tilting Mechanisms
  - Object stability (tabletop design)
    - Concepts, angle dependent
  - Development of math model
    - Difference between the old and new equations
  - Wikipage update
- Assignments for Thursday
  - **Create a 3D Model**
  - **Bill of materials (what needs to be ordered)**
  - **Cameron and Joseph will finalize math,**
    - **Meet 1:45 pm at senior lab**
  - **Mark, Keegan, and Piyush will create model, reuse the sensors from the COG team, and use some of the material.**
    - **Finalized lifting concept, decision matrix/vote on best design**
    - **Meet from 1:45 to 2:45**
  - Keegan - **Keegan will complete Value Proposition by Thursday**

## Meeting Minutes

- 10/27/20

Standard Team Meeting

**Bold items were added during the meeting.**

Below is an unorganized chronological list of items discussed.

- Tilting Mechanisms: Piyush, Mark, Cameron
- Object stability (tabletop design): Cameron and Keegan
  - Concepts, angle dependent
- Mathematics: Joseph and Cameron
  - Difference between the old and new equations
- Wikipedia: Piyush and Keegan
- Electronics
  - **Dependent on other elements**
- Preparations for Client/Instructor meeting
- Goals and Deadlines
  - **Mark will create a decision matrix, create a top 3 choices for lifting table**
  - **Pegboard design in CAD, Friction surface**
  - **Math, final equations written in LaTeX equations**
  - **Each team member send Piyush a photo**

# Meeting Minutes

10/22/20

Instructor Team Meeting

**Bold items were added during the meeting.**

- Design Validation Plan submission
- Update of our team missions
  - Prototype chosen
  - Tilting Mechanisms: Piyush, Mark, Cameron
  - Object stability (tabletop design): Cameron and Keegan
    - Magtable, pegboard,
  - Mathematics: Joseph and Cameron
    - **We need to know what's different between the old one and new**
  - Wikipedia: Piyush and Keegan
- Data updates (if any):
  - Looking error source
- Other items Dr. Maughan would like to address
- **Next Thursday move all these items forward**

Below is an unorganized chronological list of items discussed.

# Meeting Minutes

10/20/20

Standard Team Meeting

**Bold items were added during the meeting.**

Below is an unorganized chronological list of items discussed.

- Upcoming due dates
  - Design Validation Plan: October 22th
  - Value Proposition: October 29<sup>th</sup>
- Items from previous meeting - **Compression**
  - Team to figure out how to adjust the angle - Creating a way to lift the table without taking up counter space, reduction of previous Capstone Team's design
  - Team to figure out how to hold the object in place
    - Example: Build tabletop with a vacuum top
    - Pegboard design (series of holes)
  - Team to finalize math model (z-calculation error)
  - Cameron will finalize math for Tension
  - Team will decide prototype: **Compression**
  - **Team Wiki, Piyush, Cameron and Keegan**
  - **Team Hold it, Cameron and Keegan**
  - **Team Lift it, Piyush, Mark, Cameron**
  - **Team Math it, Joseph and Cameron**
  - **Each member will add two items to DVP**

# Meeting Minutes

10/15/20

Standard Team Meeting

**Bold items were added during the meeting.**

Below is an unorganized chronological list of items discussed.

- Snapshot 1 Discussion
  - Dr. Maughan's thoughts
  - Ideas learned from visitors
  - Closing thoughts
- State of our prototypes
- Upcoming due dates
  - Design Validation Plan: October 22th
  - Value Proposition: October 29<sup>th</sup>
- Any additional items Dr. Maughan would like to address.
- Comments:
  - **Team to figure out how to adjust the angle**
  - **Team to figure out how to hold the object in place**
    - **Build tabletop as a vacuum table**
  - **Cameron will finalize math for Tension**
  - **Team will decide prototype.**

## Meeting Minutes

10/08/20

Instructor Meeting

**Bold items were added during the meeting.**

Below is an unorganized chronological list of items discussed.

Try the z-axis tests with only two tests



# Meeting Minutes

10/06/20

Standard Team Meeting

**Bold items were added during the meeting.**

Below is an unorganized chronological list of items discussed.

- Reminders:
  - DUE Today: Project [Schedule](#) for both Fall & Spring (to lead instructor)
    - Joseph – Gantt chart **Due Thursday**
  - DUE Thursday: [Logbook](#) (w/review form) & [Portfolio](#) (to lead instructor)
    - Our file system is our portfolio
    - Email pdf logbook. **Due Thursday**
- Updates from the Compression tests (Joseph, Mark, Piyush)
  - Next steps?
  - **Joseph will create a topographical map for error**
  - **Piyush will run more tests**
- Updates from the Tension test (Joseph, Cameron, Keegan)
  - X and Y Accuracy
  - Z possibilities
  - 50 g accuracy
  - Next steps?
    - **50 by Thursday**
    - **Wednesday evening perform tests**
    -
- Schedule Shop Orientation with Max.
  - **1:50 pm**
- Identify tasks for each member to complete by the next meeting.

# Meeting Minutes

10/01/20

Instructor - Team Meeting

**Bold items were added during the meeting.**

Below is an unorganized chronological list of items discussed.

Items to review with Dr. Maughan:

- DUE: Project [Schedule](#) for both Fall & Spring (to lead instructor)
  - Joseph – Ghant chart
  - Next thursday
- DUE: [Logbook](#) (w/review form) & [Portfolio](#) (to lead instructor)
  - **Our file system is our portfolio**
  - **Email pdf logbook.**
- Our status
  - COG Team Prototype picked up
  - Two measurement methods
- Any additional items Dr. Maughan would like to address.
  - **Start simple, try 2 scales**

Items for the core team:

- Updates from Compression tests (Joseph, Mark, Piyush)
  - Next step?
  - Recommendations for tension test meeting
- The date for the Tension test meeting (Joseph, Cameron, Keegan)
  - Senior design suite
- Schedule Shop Orientation with Max.
  - Waiting for a reply about Friday at 3:30
- Identify tasks for each member to complete by the next meeting.
  - **5:00 pm tension meeting**

# Meeting Minutes

09/29/20

Standard Team Meeting

**Bold items were added during the meeting.**

Here are items for discussion at the meeting later today, 09/29/20 at 3:30 pm.

- COG Team Prototype picked up
  - **Working with our purchases first. Get measurements, then look at theirs**
- Update on purchasing
  - **Compression has arrived**
  - **Tension coming tomorrow**
- Our Prototyping strategy
  - Dates to meet up?
  - COVID Considerations
- Schedule Shop Orientation with Max.
  - Information from our last meeting:
    - Max sets up a time for safety training. (~20 minutes)
    - 3:30 Friday, Cameron will send an email.
- Identify tasks for each member to complete by the next meeting.
  - Tension team: Joseph, Cameron, Keegan
    - **Cameron will pick up device.**
  - Compression team: Mark, Piyush, Joseph (after thermal systems).
    - **Piyush will pick up device.**
- Joseph will alert Maughan of the gphant chart (Project Schedule)
- Next Thursday, log book due.

# Meeting Minutes

09/24/20

Standard Team Meeting

**Bold items were added during the meeting.**

Below is an unorganized chronological list of items discussed.

Here are items for discussion at the meeting later today, [09/24/20] at [3:00] pm.

Items with Dr. Maughan:

- Product Requirement Documents Due today.
  - Located in our share folder
- Table has been reserved in the Design Suite.
- Review the Budget document.
  - We want to purchase:
    - 3 Tension scales
    - 3 compressions scales
    - Craft supplies (tape, glue, scissors, ect)
- Our Prototyping strategy
  - Team Compression
  - Team Tension
- Schedule Shop Orientation with Max.
  - Information from our last meeting:
    - Max sets up a time for safety training. (~20 minutes)
    - Email
- Status of picking up the previous team's prototype.
  - Sally Mei
- Any additional items Dr. Maughan would like to address.
  - Make requirements completable objectives

Items for team:

- Identify tasks for each member to complete by the next meeting.
  - Cameron
  - Joseph
  - Keegan
  - Mark
  - Piyush

## Meeting Minutes

# Meeting Minutes

09/22/20

Standard Team Meeting

**Bold items were added during the meeting.**

Here are items for discussion at the meeting later today, [09/22/20] at [2:45] pm.

- Reserving a table in the Design Suite.
  - Bill Magney – Table Check out form
  - **Piyush will do it.**
- Review the Product Requirement document.
  -
- Review the Budget document.
  - **\$40 for each scale and tape**
  - **Still waiting for real purchases**
- Discussion of Shop orientation
  - Information from our last meeting:
    - Max sets up a time for safety training. (~20 minutes)
      - 3d printer room access:
      - Laser cutter: only person needs training, needs basis. One-person contact is best.
      - Watch a video on laser cutting
      - Northwest end, wood prototype.
      - **Schedule at next meeting**
- **Meeting at capstone class time or right after**
- Status of picking up the prototype.
  - Should Cameron send the email to pick it up or wait for our tabling location so we can include an address for shipping/drop off
  - **Yes, wait on table location**
- Discuss each member's prototype ideas
  - Joseph
  - Keegan - **ATAT idea**
  - Piyush -
  - Cameron
    - Dr. Hrdlicka - All of the scales are high quality (super expensive), but he said we can use his lab anytime :D (I don't think we will need to).
    - Ideas: Marionette flipping, Reaction force method, balance CG Meter - link 2, crane tipping
      - Statics review: 3D Centroid 1, 3D Centroid 2, 3D Cg calculation, demonstration (lots of interesting ideas)
  - Maxx -

## Meeting Minutes

- **3 Tension scales and 3 compressions scales for prototyping**
- Other upcoming due dates?
- Identify tasks for each member to complete by the next meeting.
  - **Keegan with purchasing**
  - **Piyush tabling**
  - **After Piyush gets tabling, Cameron will send email to Jonathen**
  - **Keegan and Cameron will do Tension test.**
  - **7 after scales arrive, to make a measurement of CG using the two methods.**
  - **Piyush and Cameron will finalize PRD**

# Meeting Minutes

09/17/20

Here are items for discussion at the meeting later today, [09/17/20] at [3:00] pm.

- Review these items with Dr. Maughan
  - Discuss the client meeting (how it went, etc)
    - Budget. - yes
    - Jonathan wanted to join all weekly meetings with Dr. Maughan. - every other week.
  - Reserving a table in the Design Suite. - Bill Magney –Table Check out form
  - Review Product Requirement Documents -wait when it's finished.
  - Shop orientation, individually with a team. Max sets up time for safety training. (~20 minutes)
    - 3d printer room access:
    - Laser cutter: only person needs training, needs basis. One-person contact is best.
      - Watch a video on laser cutting
      - Northwest end, wood prototype.
  - Purchasing >\$100, do we buy it ourselves?
    - Fill out the form, digitally approved by maughan, let him order it with university credit card, he doesn't want to spend all his time being a buyer, so send him a list once it is curated.
      - Form may be will be in the ME office, near window. Fill it out best we can.
  - Johnathan about picking up the prototype.
  - Any additional items Dr. Maughan would like to address.
- Review these items with regular team
  - Budget document.
  - Date to create 0<sup>th</sup>-prototype (demonstrate the ability to take Cg measurements asap as Jonathan recommended).
  - Upcoming due dates?
  - Set tasks for each member to complete by next Tuesday.
    - Each member come up with a method for prototype
    - Dr. Hrdlicka -



# Meeting Minutes

09/16/20

Client Meeting #1

Below is an unorganized chronological list of items discussed.

- Yes, they have the device, Sally.
- Feel free to invest in new sensors.
- Find a single egg in an egg carton.
- 1% of cellphone size – 1% of 19”
- Take a measurement as soon as possible. - Get the math done, start with food scales, do not assume we know how to take a measurement.
- 20x20x20 is the largest but keep scalability an option.
- Don't plan on the vibration test, *super stretch goal*. He likes the idea; we should keep it in mind and not block ourselves out from accomplishing it (measurement during vibration).
- Need to be shelved for long periods of time. So, the device will need to be able to deconstructed and reconstructed and still be able to take accurate measurements.
- Calibrate the machine by hitting a bottom.
- Be able to take out effects of temperature.
- Temperature ranges of standard room temperature.
- He's comfortable about extending the budget, but we should check with Maughan, he seemed very against the idea of going over budget; he described overbudget as *failure*
- Don't rely on electronic measurements, do it first my hand, get tons of measurements done, prove you have a handle on it.
- Lots of Control Schemes to make this work, you can download them. Less about electronics, more about the measurements, he likes the marionet idea.
- Brain storming, after taking measurements. He says its fun to watch that.
- We can tour later.
- He is willing to meet in person.
- Don't wait to ask questions. We can get into a zoom meeting in 5 minutes
- Don't let machining be a roadblock. Wood, legos, get the stuff done. Don't build anything we can buy. (let him buy it).
- He wants to join the Maughan meetings.
- Emergency stop is completely additional.

# Meeting Minutes

09/15/20

- Joseph has meeting link.
- Discuss the 2018/19 Capstone Project's work
  - What items should we build on?
    - Invest high quality load cells (strain gauge)
    - Can we trust the value from the linear actuator?
    - Should we keep their design?
    - Can we access their design, does the product still exist somewhere?
      - Ask about the device, can we pick it up.
      - Having the device would be helpful for testing
    - Do the measurements need to be done under vibration?
    - We should try to use their code and electric engineering work
  - What items should we discard?
    - Should we eliminate the two bars on top, so we can test other size SEL products.
- Prepare for meeting Joseph scheduled with SEL Jonathan (Wednesday, 09/16/20 @ 3:30 pm)
  - Review Client Meeting document from previous zoom class
  - What questions we should ask?
    - What are the smallest size objects we will be required to measure
    - How much larger than the 20x20x20
- Prepare for meeting Cameron scheduled with Dr. Maughan (Thursday's, @ 3:00 pm)
  - What is the zoom location?
  - Review Instructor Meeting document from previous zoom class
  - What questions we should ask?
- Review the budget that Keegan created
- Discuss how to submit the things we need to access: CAD lab, Senior Design Sweet, Laser Cutter, and Machine Shop
  - Ask graduate student/ian about getting training
- Discuss what should be completed by each team member for upcoming meetings
  - Meeting with SEL
  - Meeting with Instructor
- Dr. Maughan's advice
  - Stay in budget
  - Utilize prior teams work – do not start from scratch – but be opened minded

## Meeting Minutes

- Do our own research about COG devices. (review *concepts considered*)
- Eventually, ask about budget flexibility

# Meeting Minutes

09/09/20

- Determined meeting time Tuesdays at 2:30
- Joseph will:
  - will run gantt chart.
  - will reach out to SEL Contact
  -
- Cameron will:
  - Maintain meeting notes and send meeting agendas
- *Teams* will be our message app
- Group will review documents of COG 18/19
- Things we will need to access: CAD lab, Senior Design Sweet, Laser Cutter, Machine Shop
- Keegan will:
  - Create a budget

# Meeting Minutes

09/08/20

- Introductions
- Graduate Student Introduction: Max Johnson
  - [John9051@vandals.uidaho.edu](mailto:John9051@vandals.uidaho.edu)
  - GJ113
- Professor Introduction: Dr. Maughan
  - [maughan@uidaho.edu](mailto:maughan@uidaho.edu)
  - Office Hours: M/W 2:30-3:30
- Established team meeting with Dr. Maughan
  - Thursdays 3:00pm
- Established Team name:
  - MASSPOINT
- Established team meetings:
  - Wednesday 4:00-5:00
- Piyush will check with Becky about meeting room reservation
- Team Contract info given:
  - Jonathan Richards
  - [jonathan\\_richards@selinc.com](mailto:jonathan_richards@selinc.com)
- Remember to ask for prior project work
- Established Shared Drive folder
  -
- Established Teams Chat
- Dr. Maughan gave advice:
  - Agendas should help teammates prepare for meetings.
  - Keep pushing hard to meet deadlines or you are behind.
- Piyush will print documents found in share drive for next meeting
- Cameron will email Dr. Maughan team name and ask for prior capstone's work.