

# Assignment M2

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**Abstract**—For this project, I will be focusing on redesigning the canvas online calendar. I will go through one cycle of the design life cycle, whereby employing HCI techniques I will be able to identify how to improve the interface and the user experience as a whole.

## 1. Needfinding Execution 1 participant observation:

**Table 1**— Raw Results of participant observation needfinding method including findings.

Question	Response	Notes	Findings
What is the next upcoming assignment?	It is called "Assignment M2"	<ul style="list-style-type: none"><li>-The assignment "Quarter Course Survey" is already completed.</li><li>-A slash through assignments means they are completed? Yes because I know this because I did the assignment.</li><li>-It's easier to answer this question in agenda view because the first item is what's due next.</li><li>-Month and week views require a bit more thinking.</li><li>-There's information in "calendar details "</li><li>-How do I get to the assignment submission page from here?</li><li>-one link takes you to CS6570 homepage and another link takes you to the details of the assignment</li></ul>	<ul style="list-style-type: none"><li>-I should pay attention to which view a user uses to answer the question and note any issues.</li><li>-I should determine if the user understands a slash means completed.</li><li>-It took me a while to figure out the assignment name directed you to the assignment submission page</li></ul>
What is the due date of the next assignment?	It is due on Monday, June 13 at 9.00 AM	<ul style="list-style-type: none"><li>-Agenda and week view shows you hour and minutes, monthly view does not.</li><li>-What time zone am I in? AOE? EST?</li></ul>	<ul style="list-style-type: none"><li>-The calendar does not indicate the current time zone.</li></ul>
How many assignments are due this week?	There are zero assignments due this week.	<ul style="list-style-type: none"><li>-This question was easiest to answer in week view as it automatically was in the current week.</li><li>-In agenda view, I had to pay attention to the dates since it lists all assignments well into August.</li><li>-I should change this question in my interviews so there's at least one open assignment.</li></ul>	<ul style="list-style-type: none"><li>-I realized that I had completed all assignments for the week. This led me to change my interview activity to "Find how many assignments are due next week"</li></ul>
How many assignments are due this month?	There are 4 assignments left that are due for this month	<ul style="list-style-type: none"><li>-This was easiest to answer in the month view. I can just count the none crossed out assignments.</li><li>-In agenda view, it was okay as well, as long as I paid attention to the month.</li><li>-In weekly view, it's tedious to know what week you're in and you have to click left or right through the month.</li></ul>	<ul style="list-style-type: none"><li>I realized I want to include another activity in my interviews "Find how many assignments were assigned this month." This will give me more</li></ul>

			information on how the user is understanding the interface.
How do I create a task on the calendar?	You click on the plus sign and fill out the form, with the relevant information for the task. (I tried both ways of creating the task)	<i>-I utilized the plus sign to create a task.</i> <i>-I didn't know what task I wanted to create.</i> <i>-I eventually just created a task to review "Assignment M2".</i> <i>-I still don't understand why I might use "Event" over "My To Do"</i> <i>-My To Do is more "task" related but "Event" has an hour interval.</i> <i>- Does it matter which I chose? They both create the task</i> <i>-Oh in week view if you create an event you can see the time block, but in the other views month and agenda you can not.</i>	<i>-I realized that I need my interview activity to be more defined, "Create a task on the calendar" is too open-ended. I want an indication of how it's connected to assignments and planning.</i> <i>-I need to pay attention if a user decides to create the task with Event or My To Do, and why they are deciding that.</i>

The first needfinding method I utilized was participant observation, where I gathered qualitative data about the canvas online calendar. I navigated the calendar interface and noted my thoughts and observations in table 1, the fourth column "findings" was added later when I reviewed my notes and responses. One takeaway from performing this exercise was that depending on the question a particular view was more efficient at answering a question. For example, the question "How many assignments are due this month?" can quickly be answered in the monthly view. However, it's not as clear with the agenda view since you get a list of all assignments due into August. It's even worse in weekly view because you have to know what week you're in, navigating forward or backward a week. A second takeaway was that I needed to account for completed assignments, adding the activity "Find how many assignments were assigned this month" would take into account that a user may not know if an assignment is completed. A third takeaway was that the question "How do I create a task on the calendar?" was too vague. As I attempted to answer the question I realized I had no direction and neither would anyone I interviewed. I revised the activity instead to the following:

*You have reviewed your assignments and have decided to create two tasks for yourself this week :*

- Complete two pages of an assignment*
- Read an assigned pdf.*

*(Create each task for any time and day of this week.)*

The steps I took to avoid confirmation bias was to challenge my thinking as I was answering the questions in column 1 (table 1). An example of this can be seen in the question “What is the next upcoming assignment”. I questioned myself as to why a slash meant an assignment was completed, *“A slash through assignments means they are completed? Yes, I know this because I did the assignment”*. This helped me to stay objective, however, I constantly needed to remind myself. This is because when I answered a question I was already thinking about how I could improve my interview activities for the second needing finding method. While improving my activities and questions was a goal of this exercise, if I were to perform this exercise again I would hold those thoughts until the end of the exercise.

## 2. Needfinding Execution 2 thinking out loud:

*Table 2 - Summary of thinking out loud exercise*

Task	Response	Action	Participant Comments	Findings
Find how many assignments were assigned this month	-Eight -Four	-Counted visual -Count with fingers	“Assignments are labeled assignment”  “What does it mean if it’s slashed? I think it means canceled  “Are test assignments?”  “Survey is not an assignment “	-The use of the word assignment confused users.  -Assignments with slashes were thought to be either completed or canceled
Find how many assignments are due this month.	- Three -Four	-Looked at labels  -Clicked on items to investigate  -Counted uncrossed assignment	“The one for the 7th is crossed out so it means it was done already”  “Okay now I think it means completed”	-Users were able to figure out slashed meant completed
Find how many assignments are due this week.	None	-Looked at the week in the monthly view and counted unslashed assignments.	“No assignments left for the week”  “None are due this week”  “No assignments due its crossed out”  “Oops, what did I do.”	-Users properly identified completed assignments  -A user was able to accidentally find how to create an event
Find the next upcoming assignment.	-Assignment M2 Monday, June 14th	-Used finger to point at the assignment	“It’s next week”  “Do I click on this?”	-Users were able to identify the next upcoming task.

	-June 14, 9 am -9a Assignment M2	-Hovered over the assignment		- responses to the question suggest I was not clear enough.
Find when the next assignment is due.	-Monday the 14th at 9 am -June 14, 9 am	-Hovered over the task and saw the time  -Clicked on the item	"Has to be submitted before 9 am"  "Oh wait it's not 9a it's 9 am "  "If I click here do I get more information?"	-Users were able to properly Identify the time the assignment was due. They either hovered over the assignment or clicked on it.
You have reviewed your assignments and have decided to create two tasks for yourself this week : - Complete two pages of an assignment - Read an assigned pdf. (Create each task for any time and day of this week.)		Click on the day	"Do I have to put location? Is it required?"  "Do I need to fill in everything?"  "On my phone, I tap on the date "  "This reminds me of outlook"  "Why is it blue on the calendar now?"	-None of the users created an event with the plus sign.  -Users were able to create tasks by just clicking on the day.  -It appears this has been learned through experience with other interfaces.  -It was unclear what information was required to be filled out.

The second needfinding method I utilized was thinking out loud. I hosted the user sessions in person, and users navigated my canvas account while performing activities. One of the takeaways from performing this exercise was that I failed to be clear in my choice of words. For the activity "Find how many assignments were assigned this month" I did not realize that assignments for this course (CS 2750) are named "assignment x". This was an issue because users were confused if test or survey assignments were defined as assignments. A second takeaway was that none of the users left the monthly view, I am not sure why this was the case. The default was the monthly view, I should have incorporated starting from a different view to test whether users would navigate to the monthly view from weekly or agenda view. A third takeaway was that none of the users created an event using the plus sign, they were able to figure out you could click on a date to create an assignment or by accident; this seemed to be a learned behavior from interactions with other interfaces. A fourth takeaway is that none of the users clicked the "My To Do" tab when creating an

event, it was almost like it wasn't even there. To control for confirmation bias, I maintained a neutral stance and looked at the data subjectively. To control for observer bias, I stuck to the outlined activities and did not interfere with how a user interacted with the interface. When a user had a question I just repeated the activity and reminded them to think out loud. To control for question order bias I ordered the activities from broad to more specific.

### 3. Needfinding Execution 3 Evaluating existing user interfaces:

*Table 3 - Raw data of evaluating existing user interface*

Question	Google Calendar	Outlook Calendar	Asana Calendar
For what context was this made for?	Mixed-use	Office use	Office use
Who is the user?	Appears to have a wide range of user, based off the design it's more for basic users who just want to plan out basic events	Appears geared toward office workers. Scheduling assistant and other features suggest this.	This is geared toward technical users who have a lot of tasks to assign and keep track of. More for project management.
How does the interface allow or not allow users to identify upcoming assignments?	You can readily see the name of the task and the time is it due. It can even provide reminders.	You can easily see the name of the task and what time it's due.	You can easily see the name of the task and when it's due.
How does the interface allow or not allow users to have a high-level view of the week or month?	You can change between day, week, month, year, and 4 days.	You can change between day, school week, month.	You are in a month's view there's no other view. You can scroll up or down to change the month
How does the layout allow or not allow users to plan their schedules?	The interface allows you to click on a day to add an event. You get the option to either create an event or a task. It was easy to create a task.	The interface allows you to click on a day to add an event. There's is only one option. However, it was difficult to create the task because there was no clear submit button.	The interface allows you to click on a day to add a task. However, you have to click through two menus to include an hour. Everything is click-based to quickly get started.

The third needfinding method I utilized was evaluating existing user interfaces qualitatively. I identified three calendar-style interfaces: Outlook's calendar, Google's calendar, and Asana's calendar. Key takeaways from my evaluations were: Google calendar is more focused on the casual user, who may need to know general holidays and perhaps create a birthday event. Outlook calendar is more focused on office productivity, with features such as scheduling assistant

when creating events. Outlook's event creation screen was almost identical to the canvas calendar. The main difference is you can see an hourly view during the task creation. Asana is more focused on creating tasks, it essentially takes canvas agenda tab in a different direction. Asana's agenda-like view allows you to break down tasks and create subtasks. All while still being able to see those tasks in the calendar view. However, Asana adds a bit more menu diving to get more granular control. All three interfaces provided a similar event creation interface with Outlook and Asana only having one option. Each had different options for views in the form of dropdowns. All three interfaces allowed you to see the name and time of the activity. To control for confirmation bias I avoided perceiving the interfaces as a solution to the problem space, I evaluated the three interfaces based only on the questions I formulated.

#### **4. Data Inventory**

##### ***Who are the users?***

While I have defined an ideal user as a student who needs to check upcoming assignments and their due dates. With beginner to novice level experience of the interface. Who speaks and reads English, are at least 21 years of age, and are a student of any gender or ethnicity. I have failed to adequately verify and test if this is true for my user. I would have to create a survey and collect this information to ensure my ideal user is true.

##### ***Where are the users?***

Through participant observation, I identified that the user would be performing this task at a desk. However, the canvas calendar can be accessed via a computer, tablet, or smartphone this their locations can change. I am currently limited by my participant observation and my interviews only studied users sitting at a desk. Thus, I have failed to gather enough information to say the user is mainly at a desk. I would have to survey users and ask where they use the canvas calendar to back up my current assumption.

##### ***What is the context of the task?***

Based on my interviews, user attention was not diverted from the task (Table 2). The monthly calendar view provided the user with what they required to stay on the same page without needing to navigate away (Table 2). However, it might

make sense to collect more information in a survey about what else a user would be doing while performing these tasks.

### ***What are their goals?***

We will continue with the assumption that the user is a student who needs to check upcoming assignments and their due dates, while also being able to plan ahead. Currently, my interviews demonstrated that users use the calendar with the goal of gaining high-level information about workload and upcoming assignments; this was evident because the user's never looked at the weekly or agenda view. Furthermore, interview comments indicate they are seeking to be productive, this is evident when they were planning out their tasks as they chose times that fit better with their current schedule (Table 2). Though the user may not necessarily be using the calendar as their main task management tool.

### ***What do they need?***

Continuing with the assumption that the user is a student who is sitting at a desk, in general, as long as the user is capable of moving a mouse or using their finger to navigate a smartphone they can utilize the canvas calendar interface. Based on my interviews the user needs the interface to readily provide them with upcoming assignments and high-level information. The user does not want to menu dive and they want a streamlined interface. The current interface is layering features that are not necessary and may cause more confusion.

### ***What are their tasks? What are their subtasks?***

- Navigate to the canvas calendar
- Review calendar
  - Identify upcoming assignments
    - Identify when they are due
    - Identify what they are about
  - Plan ahead
    - Anticipate workload
    - Create tasks to manage schedule
- Review updated calendar and continue being productive

## **5. Defining Requirements**

The interface must have the following functionality:

- Allow the user to quickly identify an upcoming task, by the due date
- Allow the user to look at past assignments and future assignments
- Allow the user to create tasks and add descriptions of the tasks
- It must reduce the number of tabs in the task creation and / views.

The interface must meet the following learnability goals:

- A beginner must be able to understand what month they are currently viewing
- A beginner must be able to readily interpret existing tasks
- A beginner must be able to readily create a new task

The interface must meet the following accessibility requirements:

- Must be useable by use of a mouse or touch screen interface
- Must be readable (font and font size)
- Must be readable by color blind individuals
  - It should not rely on colors to close the gulf

The interface must meet the following compatibility requirements:

- Must run on commonly used web browsers such as chrome, edge, firefox.

Metrics and criteria utilized to evaluate the success of a prototype that attempts to address these requirements:

- How much of the interface was able to be condensed (merging of tabs)?
- How quickly can a user identify an upcoming task?
- How quickly can a user create a task?

## 6. Continued Needfinding

In my next iteration of needfinding I have to obtain more information about my user. I still need to further understand who my user is, where they are, and in what context are they utilizing the application. I would have to perform a survey to gather those answers to confirm my initial findings. I also need to further understand why users never left the calendar view in my user tests. I should be able to gain more information by changing the default month view and noting where users end up.



## 7 REFERENCES

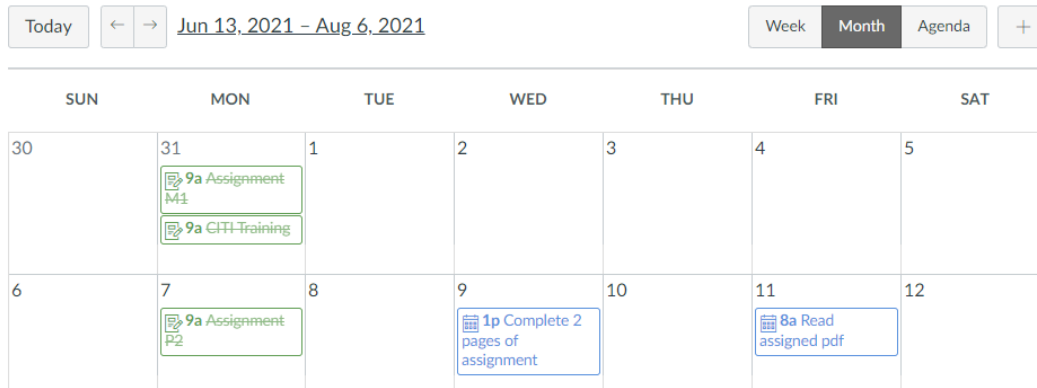
1. *Canvas*. Canvas Interface. (n.d.). <https://gatech.instructure.com/>.

## 8 APPENDICES

### 8.1 Thinking out loud participant responses

*Table 4 - Participant A's interview form.*

Task	Response	Action	Participant Comments	Notes
Find how many assignments were assigned this month	4 assignments 1 survey 1 test	Counted with finger	"Assignments are labeled assignment"	Didn't count May 31st. understood in calendar view that was last month.
Find how many assignments are due this month.	3 assignments are left And 1 test.	Looked at labels	"Three due." "The one for the 7th is crossed out so it means it was done already" "We already passed the due date." "The survey is either done or canceled."	Made reference to items being crossed out and the fact that assignments are named "assignment".
Find how many assignments are due this week.	None	Accidentally caused "Create event" to pop up	"None are due this week: "Oops, what did I do."	Discovered how to create an event accidentally
Find the next upcoming assignment.	Assignment M2 Monday, June 14th	Looked at calendar	"It's next week"	Just looked at the calendar
Find when the next assignment is due.	June 14th at 9 am	Clicked on the item	"If I click here do I get more information?"	Explored the assignment to find the time
You have reviewed your assignments and have decided to create two tasks for yourself this week : - Complete two pages of an assignment - Read an assigned pdf. (Create each task for any time and day of this week.)	Refer to figure 1	Clicked on the day	"I put in the date from one pm to two pm. I'll be at lunch so best time" "Do I have to put location? Is it required?" "Do I submit?" "Why is it blue on the calendar now?"	Asked about additional fields are whether they were required.  Wanted to know why the created events were blue.  Didn't use "My To Do"



**Figure 1** - Participant A's response to creating the two tasks.

**Table 5** - Participant B's interview form

Task	Response	Action	Participant Comments	Notes
Find how many assignments were assigned this month	8 assignments	Counting visually	<p>"Says assignments Citi training "</p> <p>"What does it mean if it's slashed? I think it means canceled"</p> <p>"Looks like p2 was canceled"</p> <p>"Quarterly survey is canceled"</p>	Counted all the assignments the way I had meant for them to be answered.
Find how many assignments are due this month.	4 assignment left	Clicked on Citi training to find out if it was completed or canceled	"Okay now I think it means completed"	Made reference to items being crossed out
Find how many assignments are due this week.	None	Looked at month view for the week of the 6th-12th	"No assignments left for the week"	Looked at the monthly calendar
Find the next upcoming assignment.	June 14, 9 am	Hovered over the task and saw the time	"Do I click on this?"	Did not name the assignment
Find when the next assignment is due.	June 14, 9 am	Hovered over the task for the time	"Has to be submitted before 9 am"	Stayed Hovered over the assignment.

You have reviewed your assignments and have decided to create two tasks for yourself this week named : - "Complete two pages of assignment" - "Read assigned pdf" (Create each task for any time and day of this week.)	Refer to figure 2	Clicked on the day	<p>"I have to create the task earlier before it's due"</p> <p>"This reminds me of outlook"</p> <p>"I do the same on my phone"</p>	Did not look at the "My To Do" tab.
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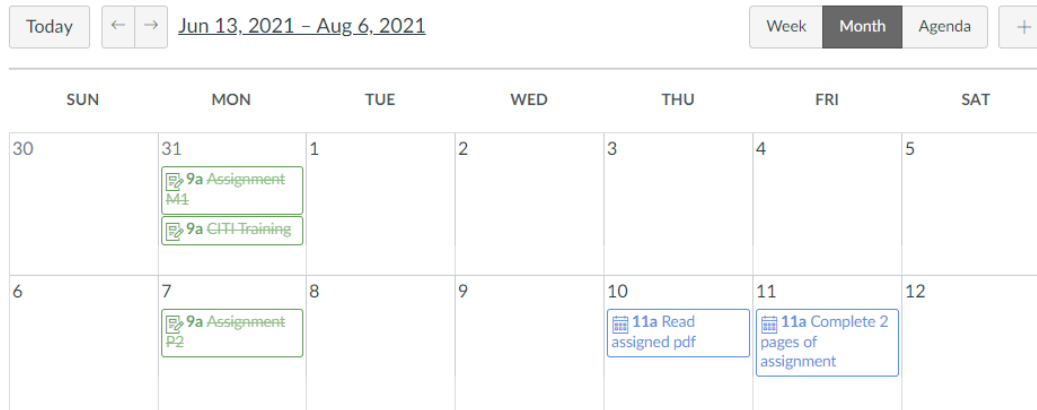


Figure 2 - Participant B's response to creating the two tasks.

Table 6 - Participant C's interview form.

Task	Response	Action	Participant Comments	Notes
Find how many assignments were assigned this month	Four	Counting with finger	<p>"Assignments done or altogether"</p> <p>"This month? Oh wait the 31st of may shouldn't be counted"</p> <p>"Are test assignments?"</p> <p>"Survey is not an assignment "</p>	<p>Made reference to the language of the question.</p> <p>Made reference to defining assignments more clearly.</p>
Find how many assignments are due this month.	Three assignment left	Counted uncrossed assignments with finger	<p>"These are crossed out."</p> <p>"One is crossed out so it's done."</p>	Made reference to crossed-out assignments.
Find how many assignments are due this week.	None	Just looked at the monthly view	"No assignments due its crossed out"	Only had to look at the calendar view

Find the next upcoming assignment.	9a Assignment M2	Pointed with finger	"It's this one, in this week"	Thought 9a was the name of the task
Find when the next assignment is due.	Monday the 14th 9 am	Hovered over assignment	"Oh wait it's not 9a it's 9 am "	Corrected initial assumption
You have reviewed your assignments and have decided to create two tasks for yourself this week : - Complete two pages of an assignment - Read an assigned pdf. (Create each task for any time and day of this week.)	Refer to figure 2	Clicked on the day.	"Location?" "Do I need to fill in everything?" "I am filling out my to do" "On my phone, I tap on the date "	Thought they were in the "My To Do" tab

SUN	MON	TUE	WED	THU	FRI	SAT
30	31 9a Assignment-M1 9a CFT-Training	1	2	3	4	5
5	7 9a Assignment-P2	8	9	10	11	12 8a Complete 2 pages of an assignment 11a Read an assigned pdf

*Figure 3* - Participant C's response to creating the two tasks.

## 5.2 Evaluating existing user interfaces

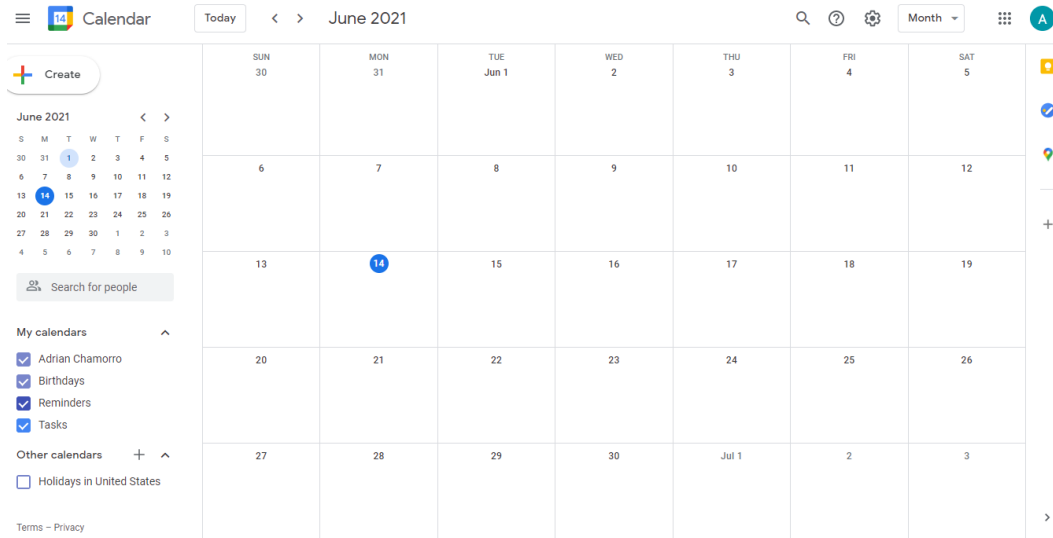


Figure 4 - Google Calendar

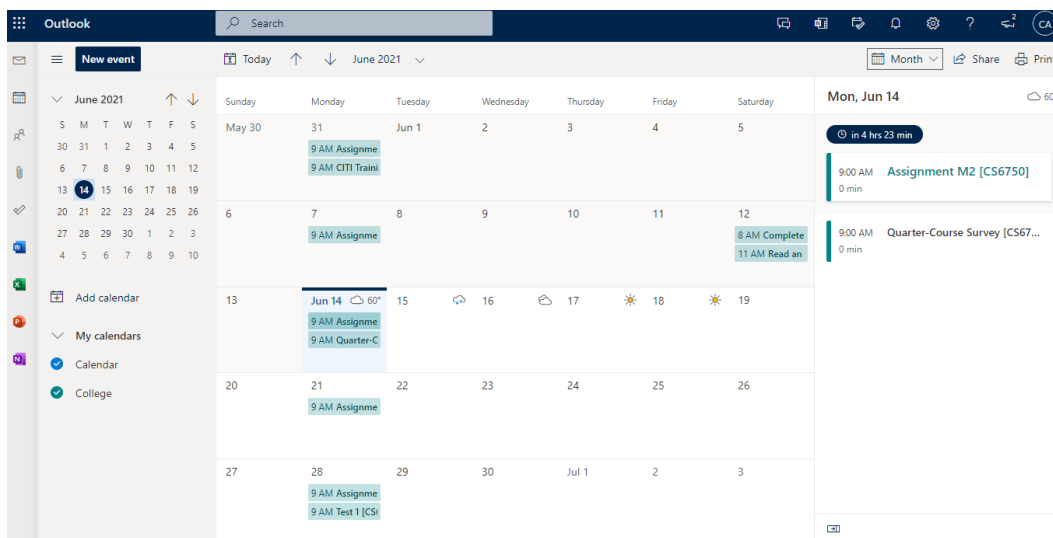
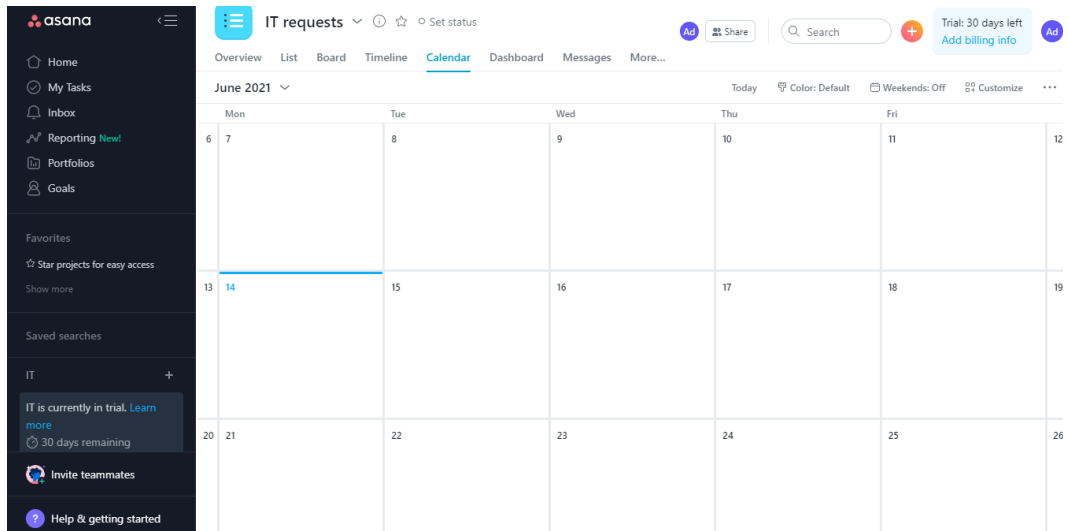


Figure 5 - Outlook Calendar



*Figure 6 - Asana Calendar*