# Cloud Computing Workshop with AWS

## Project Proposal Document

### Project Information

Project Name:  
AcademEase  
  
Student Names:  
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Project Track:  
Applied/Entrepreneurial

### 1. Background

Students often find themselves navigating through multiple platforms/apps for their various academic needs, such as the collage’s platforms (Mama, Yedion), various drives, WhatsApp groups and other niche student-built apps.

The average student will use Yedion for once a semester tasks (course registration and fee payments), Mama for the day-to-day tasks (such as homework, courses updates, etc.).   
Google drive and other tools will be used for knowledge conservation and WhatsApp will be used for some complementary tasks and student-to-student communication.

### 2. Problem Statement

Our team recognized 2 main points of frustration among the students - courses registration and knowledge conservation and sharing.

Course registration:

Before every academic year, each student is required to register for the courses they plan to take. Before registration, most students will go through the courses list, offered this year by the college, and manually pick and choose which courses they want to take. While building a schedule each student is considering multiple constraints (such as which core courses do, they must take, which elective courses they wish to take, making sure there is no overlap between lectures, etc.).  
This process is time costly and may be extremely frustrating, even more so if for some reason you must abandon your original plan and start over.

Knowledge Conservation/Sharing:

Currently, most students use 2 main knowledge sources – The Agudrive and WhatsApp.

The Agudrive is mainly used for searching for lecture notes, solved (and graded) tests and material summaries. The Agudrive is a Google drive, which is a generic “shelf” product, suitable for wide range of use cases. Although, functionally, it serves the students’ basic needs, the user experience could be improved.

WhatsApp is used for day-to-day students’ communication. WhatsApp is a great tool that every student is already using outside of school and is familiar with. However, using an instant messaging app has its weakness. Students will often ask the same question multiple times, important messages will be missed and push further up the chat as time goes on, etc.

### 3. Proposed Solution

Recognizing the challenge challenges stated above, the need for a unified platform to answer those needs is quite evident.

Our proposed solution has two aspects.

Mainly, we want a platform that aspires to contain as many of the tools as the average student will use. That is to reduce the number of various tools and websites the students must know to maximize their learning experience.

Practically, for starters, our system will focus on 3 tools (but is not limited to):

* Academic schedule building tool
* Knowledge sharing blog
* Course assignments partner matching

### 4. Alternative Approaches & Market Research

Course Registration Planning

Current Solutions:

* A designated time in which every student can interact with the current signing method given by the institute.
* Manually creating your own schedule (piece of paper, iPad, etc.)

Our app will provide an alternative to this situation- We will have a feature that will allow students to plan their own schedule based on the course’s information and personal priorities. Some kind of a Student Planner.

Maintained Information Database

Current Solutions: -Agudrive, Stack Overflow, WhatsApp Groups.  
In our app, there will be a maintained database with the relevant information for each course. Our app will unify all the information into one easy to handle platform.

Communication System for Academic needs

Current Solutions:

* MAMA Course Forum
* WhatsApp Groups
* The College’s Email Exchange

In our app, we are planning to have a forum/blog that will be maintained (by the students) with the relevant information. The blogs will contain study material, Q&As, etc.  
Our goal is to combine all those other alternatives to one platform that every user will be able to interact with other students and consume all the available resources.

### 5. Innovation

While there are dozens of schedule planning apps, they require you to input the data manually and prioritize the events by yourself.

Our system will be tailored to students, having all the relevant information in advance (courses details).

The system will offer an engine to produce optimal/need optimal schedules based on user given inputs, liberating the student from the painstaking chore of carefully checking which courses can be bundled together into a realistic schedule.

The main point of innovation is our system is the ability to bundle together multiple tools that currently have partial solutions into a single coherent system which will be greater than the sum of its parts.

### 6. Target Audience

The expected users are current students at each academic institute.  
Each student of each department within the institute will benefit and be able to contribute to the platform.

In addition, the students’ union will benefit from the adoption of some of the provided tools.  
Instead of maintaining a Google drive and other tools the union will use our tailored made solution, which will simplify knowledge conservation.

### 7. Features and User Flow

This project will contain two types of users-

1. Maintainer (a few, selected by the system admins)
2. “Regular” user - student user

The **maintainer** will upload information about the courses that are upcoming for the next academic year (in case this information will not be provided by the collage in a CSV document). In addition, the maintainer will approve uploaded materials to the drive uploaded by the students. Moreover, the maintainer will also act as a forum moderator to keep the discussion respectful and on topic.

The **regular user** will be able to do the actions below:

Create an annual schedule: the user will get a survey that contains a few questions- the user can choose which questions he would like to answer. The system will provide multiple schedule options for the student based on his responses. Each option will maximize slightly different params, giving the user the ability to choose his favorite. Each one of the schedules will be displayed aside a spider chart that will allow the user to understand the benefits of each schedule.

For example:

A diagram of a spider web

Description automatically generated

Personalized blogs for each student: the student will be able to take an active part on the current semester’s courses blogs by **searching** in the blog (the blog will contain discussions from the current year and \*popular discussions from archived past years), **responding** toquestions that other students have been asked and **posting** new questions.

Personalized drive for each student: will contain multiple sources of information that will be provided by the students. A student can **upload** documents that may help other students in the specifics course or **consume information** from the drive. As a starting point we will use the documents that are currently hosted by “Agudrive”.

\*The popular discussions from past years will be decided by the number of upvotes they received. This will allow the blogs to remain relatively clean and discard irrelevant discussions.

### 8. External Dependencies

The system will need to be updated each semester with an up-to-date courses list (courses ids, hour, lecturers, etc.). This information will be provided by the college, either via web-based API or via CSV files which will be loaded to the system (by the maintainers).

This CSV file will have to be provided each semester as soon as the courses are published on Mtamn/Yedion.

Another dependency is the student union’s Google drive (also known as “Agudrive”). As we offer a platform for file sharing, Agudrive will serve as an excellent starting point, to migrate some materials from.

### 9. Deliverables

The system will feature a web-based UI.   
As we recognize the need for a mobile application, android and IOS applications should be developed eventually.

### Submission Details

GitHub Link:  
<https://github.com/mta-final-project/proj>  
  
Workshop Website Registration Link:  
[Provide the link to the project registration on the workshop website]