

CCS SYSTEM

2020 / 07

System Design & Service Design

Nowadays, Chinese college students cannot do without the online course selection system when choosing the courses they want to take. CCS System (full name "College Course Selection System") is a network course selection system for current college students' course selection.

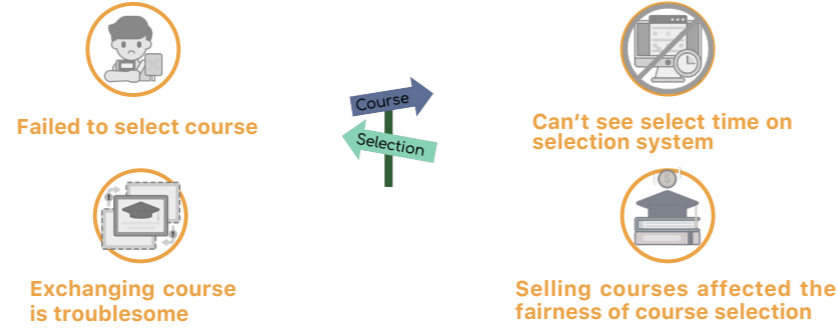


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Designed by Pulei Wang

INTRODUCTION

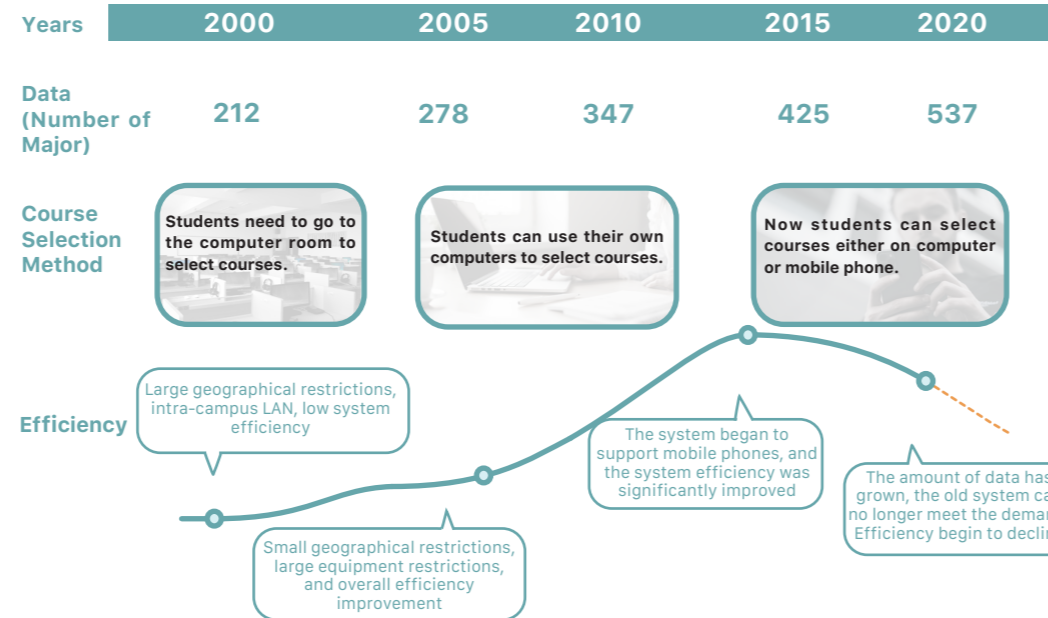
When I was still in college, we all needed to select courses through school website, but our course selection process was not smooth because we encountered various troubles...



It can be seen that students have encountered a lot of trouble when selecting courses, which often results in them not being able to select courses they want.

Map of Educational Data and Efficiency of System

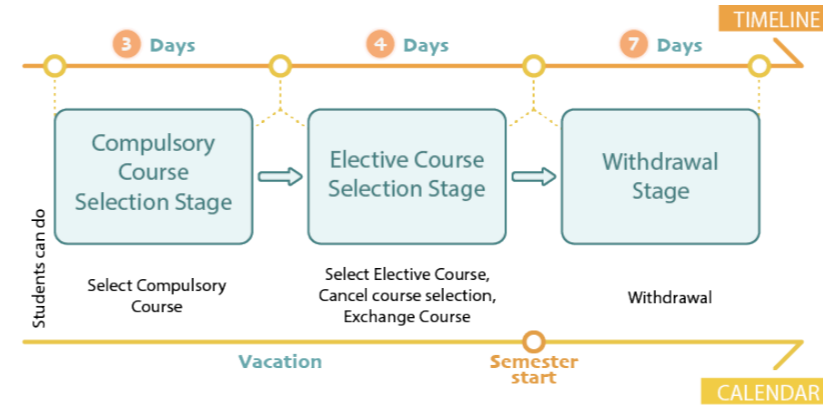
I know that many companies will also use Internet systems to manage data, so the course selection system can also be regarded as a system for colleges and universities to manage student course data. According to this relationship, I get this Map:



INTRODUCTION

From the efficiency trend line in the previous Map, we can find that the old system now seems to be unable to meet the needs of universities and students. In order to find out the specific reasons for the decline in system efficiency, I drew the work flow of old system into a block diagram and summarized the problems we need to explore next.

Work Flow Chart of the Old System



Unreasonable?

Which part of the course selection system is unreasonably designed to lead to a poor course selection experience for students?

Network Delay?

Some students often complain that the website cannot be logged in or the response speed is very slow when selecting courses. Will the network delay affect the student's experience of selecting courses?

Other Factors?

In addition to network affecting students' experience in choosing courses, are there other influencing factors?

New System?

If old system has to design a new system due to lack of functional design, are there any cases that can be referred to?

PRIMARY RESEARCH

Questionnaire

- Which of compulsory courses and elective courses has worse selective experience?
- Will you have a bad course selection experience due to other factors? Please describe details.
- When you are choosing courses, will you have a poor course selection experience due to the network? Please describe the details.
- If you want to add some new functions or improve the old functions in course selection system, what functions do you want to add or improve?

Interview

- Some students even use script for profit (help others select courses or sell the courses they select by script to other students), which is unfair!
- If someone wants to exchange elective courses, it can be difficult to find an exchange partner.
- If seniors fail to select elective courses, they will feel anxious about it, because they may face a situation that they cannot graduate because of insufficient credits.

After analyzing the questionnaire data and interview results, I came to the following conclusions of Main Questions:



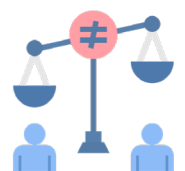
Elective & Withdrawal

The problems of old system were mainly concentrated in elective course selection stage and withdrawal stage.



Network Delay

Large number of students visit system, resulting in a longer system response time. This leads to some students failing to enter system in the first time.



Unfair & Inhumane & Waste

Unfairness caused by automatic course selection script, students cannot exchange courses, the waste of course resources caused by the unreasonable design of the withdrawal stage...

INTRODUCTION

Case Study-1

We found that the behavior of students using script to select courses is similar to the behavior of people using script to snap up live tickets. We will study how the Japanese ticketing website **Eplus** handled this unfair behavior.

The initial process of buying tickets on Eplus



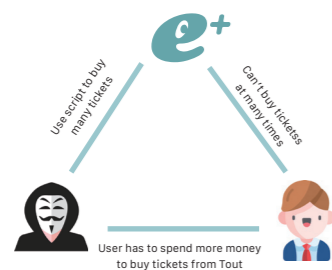
1. User manually enters ticket purchase information and then pays.
2. Eplus sends tickets to users.

The process of using script to buy tickets on Eplus



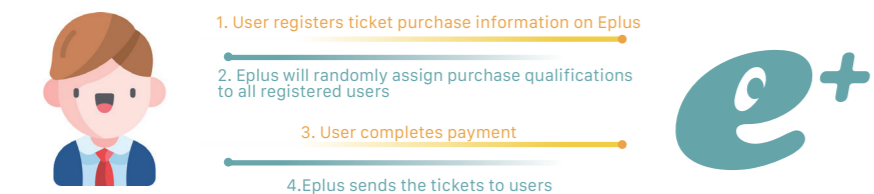
1. Script will automatically enter ticket purchase information, and then automatically pay
2. Eplus sends tickets to users

And then...



In order to stop such unfairness, Eplus launched a new ticket purchase process.

The new ticket purchase process



Although random selection may still cause some users can't purchase tickets, but this ticket purchase rule successfully prevents users from using script to buy tickets.

Case Study-1

In order to be able to explain clearly the essence of various factors that affect students' experience in selecting courses, I will use the example of "orange distribution" to explain these.



So... a normal course system is like that...



Because the course selection is first come first, so...



By analogy, we can know...

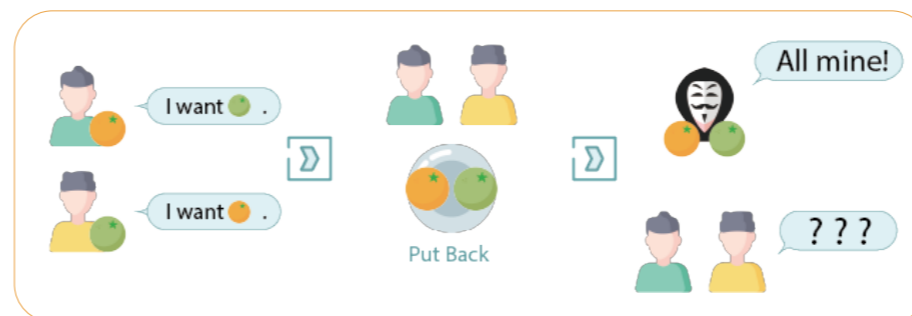
Use script to select course:



Cancel course selection/Withdraw course:



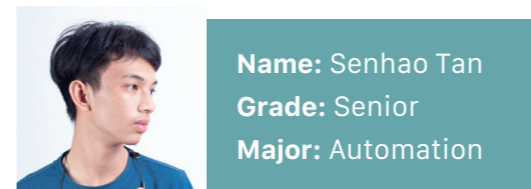
Trouble with course exchange:



COMPREHENSIVE RESEARCH

Persona

After completing the questionnaire survey and interview, we discovered that a classmate might be our specific research object.



Background

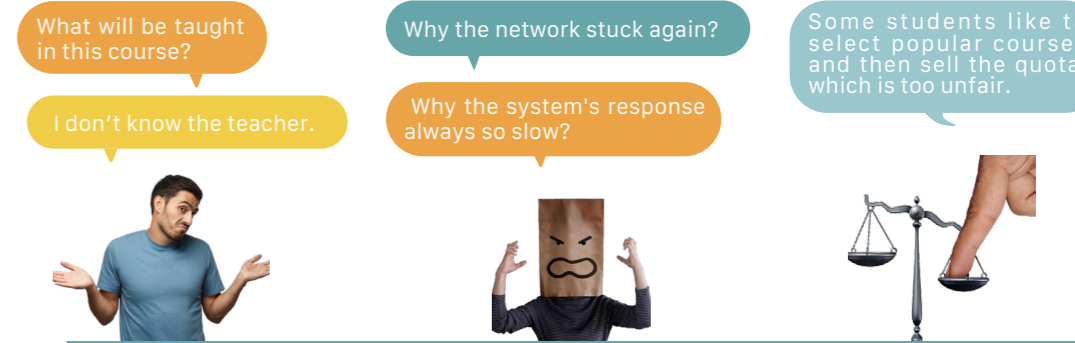
Senhao Tan is an ordinary senior, who likes to study programming related content very much. He also has his own views on the various service websites of the school. As a senior, he complained more than once about the course selection system of his school on social networking platforms.

- Very interested in programming
- Has experienced many failures in select courses
- Very sensitive to web design

Journey

After more communication with Senhao Tan, we came up with such a report-this is Tan's experience of the old course selection system.

Tan's emotion on the old system



Tan's thoughts and refinement

STUTTER

There will always be a stuttering phenomenon when selecting courses without warning.

CAN'T PREVENT

School seems to be unable to prevent students from selling course quota

NOBODY CAN EXCHANGE

Sometimes I want to find other to exchange courses but is difficult to find students who can exchange.

WASTE

Sometimes I withdraw course, but I find that even after I withdraw, other students still cannot select this course.

NEW METHOD

School can introduce a new course selection method to try to avoid such a situation.

ELECTIVE STAGE

The reason why school cannot stop students from selling quota is that the design of elective courses stage is not reasonable.

EXCHANGE FUNCTION

System can let students to change courses freely, even if two students do not know each other.

PREVENT WASTE

System can add some related mechanisms to prevent the waste of course resources.

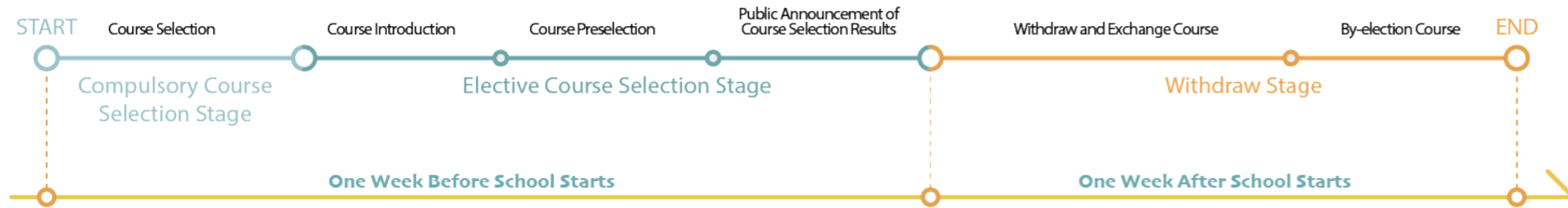
Conclusion

- Add more functions to enrich students' experience of selecting courses.
- Detailed design of elective course selection stage links to achieve fair.

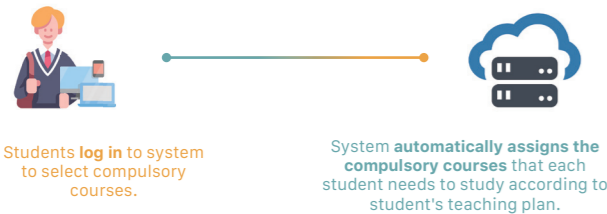
CONCEPT DEVELOPMENT

Service Blueprint

After we conducted a series of investigations and analyses, we designed a new system workflow based on the needs of students and the current problems in the system.

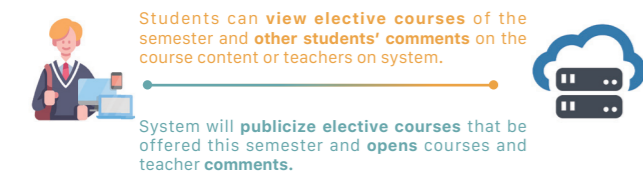


Compulsory Course Selection Stage

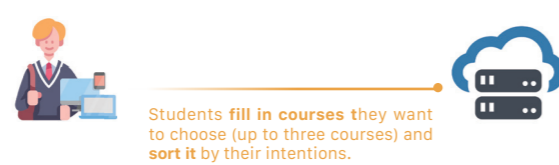


Elective Course Selection Stage

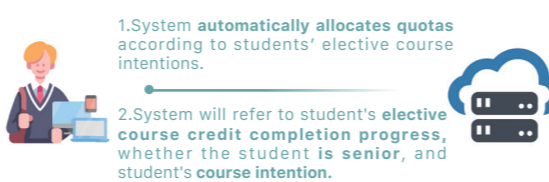
Course Introduction



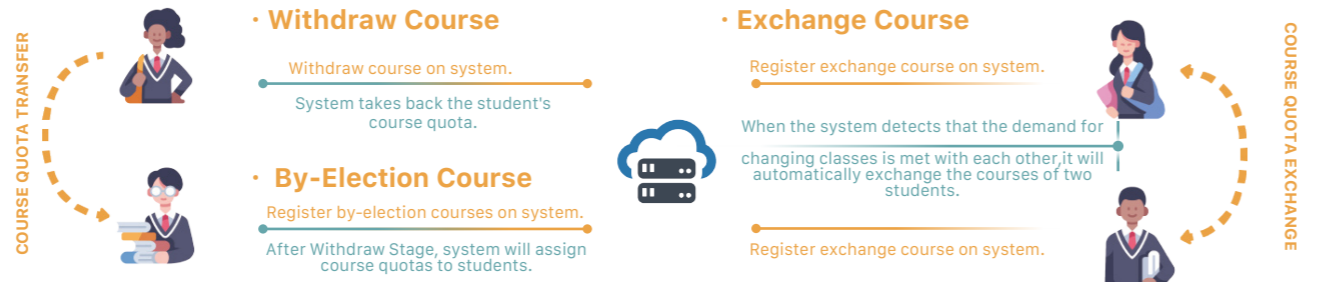
Course Preselection



Public Announcement of Course Selection Results



Withdraw Stage



Story Board

In order to introduce some new changes more clearly, we will introduce them in the form of storyboards.

COURSE INTRODUCTION

Amanda once took psychology, she thought it was very interesting, so she recommended it in comment of system.

Psychology is a very nice class!

Serena has taken algebra. She thinks that Professor Li is a very strict teacher, so she reminded of this in comment.

Professor Li is very strict!

Chen is freshman, he didn't know what he would learn at first. After reading systematic course introduction and comments, he decided to take Python-Programming.

COURSE PRESELEC & PUBLIC ANNOUNCEMENT

Amanda select Python-Programming and Sculpture in Course Preselection stage. Fortunately, she takes both.

Chen only took Python-Programming, but because he is freshman, he is not the object of priority allocation of course resources, so he failed to take this course.

Alex pre-selected Film History and Literature. Since he is senior, he is the object of priority allocation, so he has taken both.

Serena pre-selected Photography and Literature, but in the end she only takes Photography.

EXCHANGE COURSE

After they registered their exchange requirements in system, system arranged course exchange for them. Finally, they successfully switched to the course they wanted.

Alex found that Literature was boring, so he decided to exchange Literature for Photography.

Serena took Photography class and found that students need to shooting homework outdoors, which would affect her study plan. So she decided to exchange Literature classes with other students.

WITHDRAW COURSE & BY-ELECTION COURSE

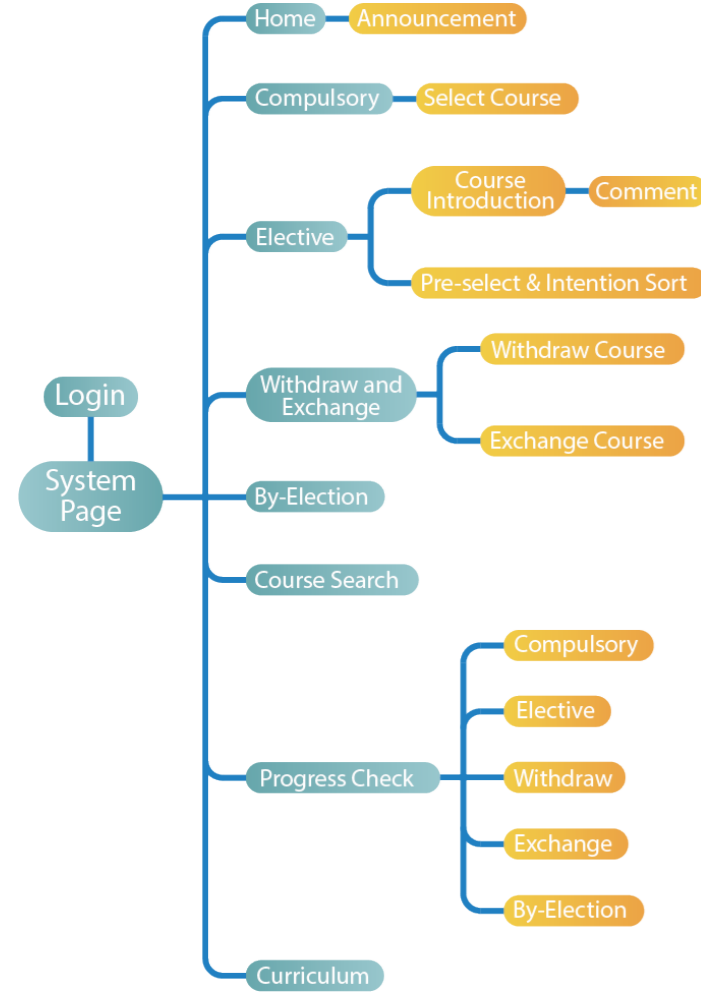
Because Amanda withdrew Python-Programming, there was one more quota. And Chen registered by-election course, so Chen finally successfully selected Python-Programming.

Amanda found that the content taught in Python-Programming was not what she wanted to learn, so she withdraws this course in the course selection system.

Chen didn't select course successful in elective course selection stage, so he registered by-election course in system.

SYSTEM DESIGN

System Structure



Web Wireframe

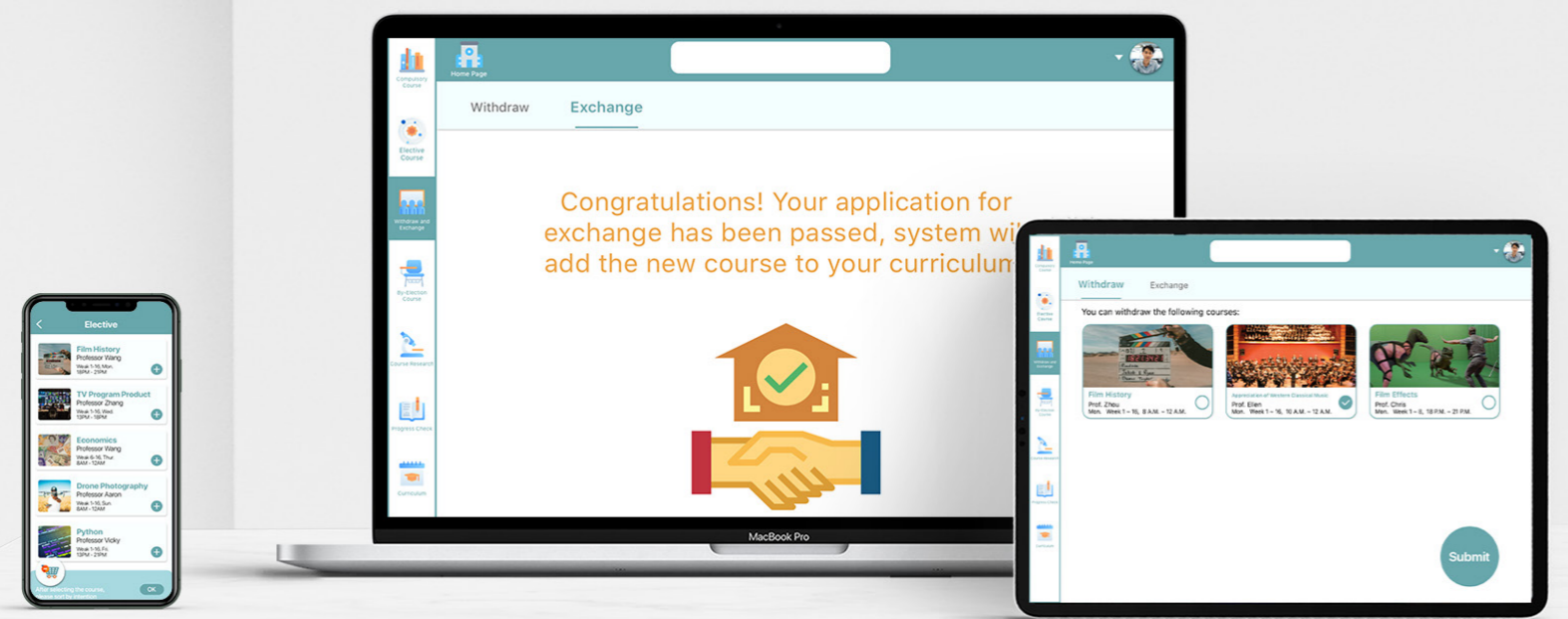


On Different Devices



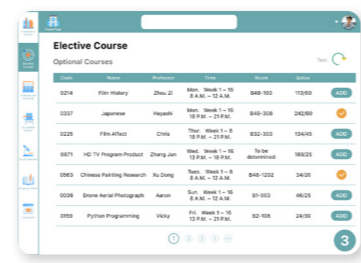
PAGES SHOW

CCS system is intended to solve many problems encountered by students when selecting courses, and improve the efficiency of entire course selection system and students' use experience.

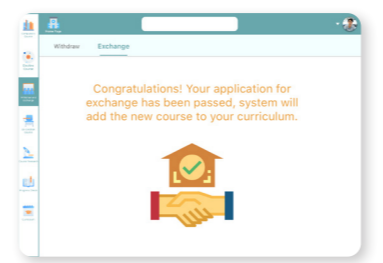


The newly designed system can be used on PC, Pad and even mobile phone, and integrates many new functions to serve students anytime, anywhere.

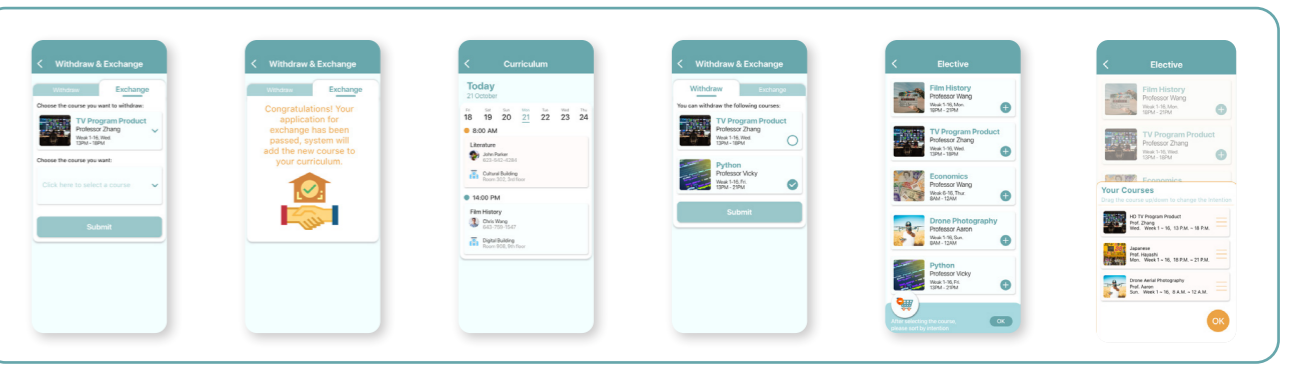
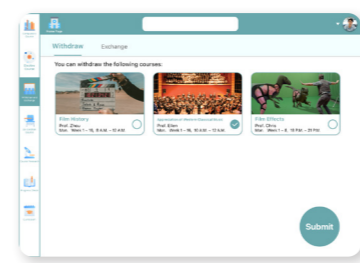
SELECT COURSE



EXCHANGE COURSE



WITHDRAW COURSE



IN LIFE



The time reminder located on the system login page allows students to accurately grasp the timing of course selection.



Students can view the introduction of elective courses on their mobile phones, which is convenient and quick.



Thanks to the wide display area of the computer, it can convey more information to students in the first time.

