

### Student Option Programme (SOP)

Online Briefing: The Redeveloped SOP 25 March 2024





# Programme Rundown

Time	Programme	Speaker
3:00 – 3:10	Overview of the Redeveloped SOP	Representatives of
3:10 – 4:10	Introduction to New/Enhanced Functions of the SOP	EDB
4:10 – 4:30	School Sharing: Feedback on Trial Version Testing	Mr WONG K W
4:30 – 5:00	Q&A Session	



# Overview of the Redeveloped SOP



### Redevelopment Schedule

Launch of the alpha version of SOP (Phase 1)

Launch of the beta version of SOP (Phase 2)

Launch of the **SOP version 2.0** 



Apr 2024



May 2024 to Jun 2024



May 2023 Early Mar 2024

Early May 2024

Early Jul 2024

Development of the alpha version of SOP (Phase 1)

Development of the **beta** version of SOP

Bug fixing and documentation



#### The redeveloped SOP:

- In the second of the second of
- added a new allocation method: elective subject allocation by elective subject queue
- enhanced existing functions e.g. optimised time block generation
- Fine-tuned algorithms e.g. calculation of satisfaction rate
- developed new user-friendly interface



### Main Functions

#### Time Block Design

 Generate optimised time block arrangement based on schools' input and constraints.

#### **Elective Subject Allocation**

 Allocate elective subjects to students based on their options, allocation orders and time block arrangement.

#### **Timetable Printing**

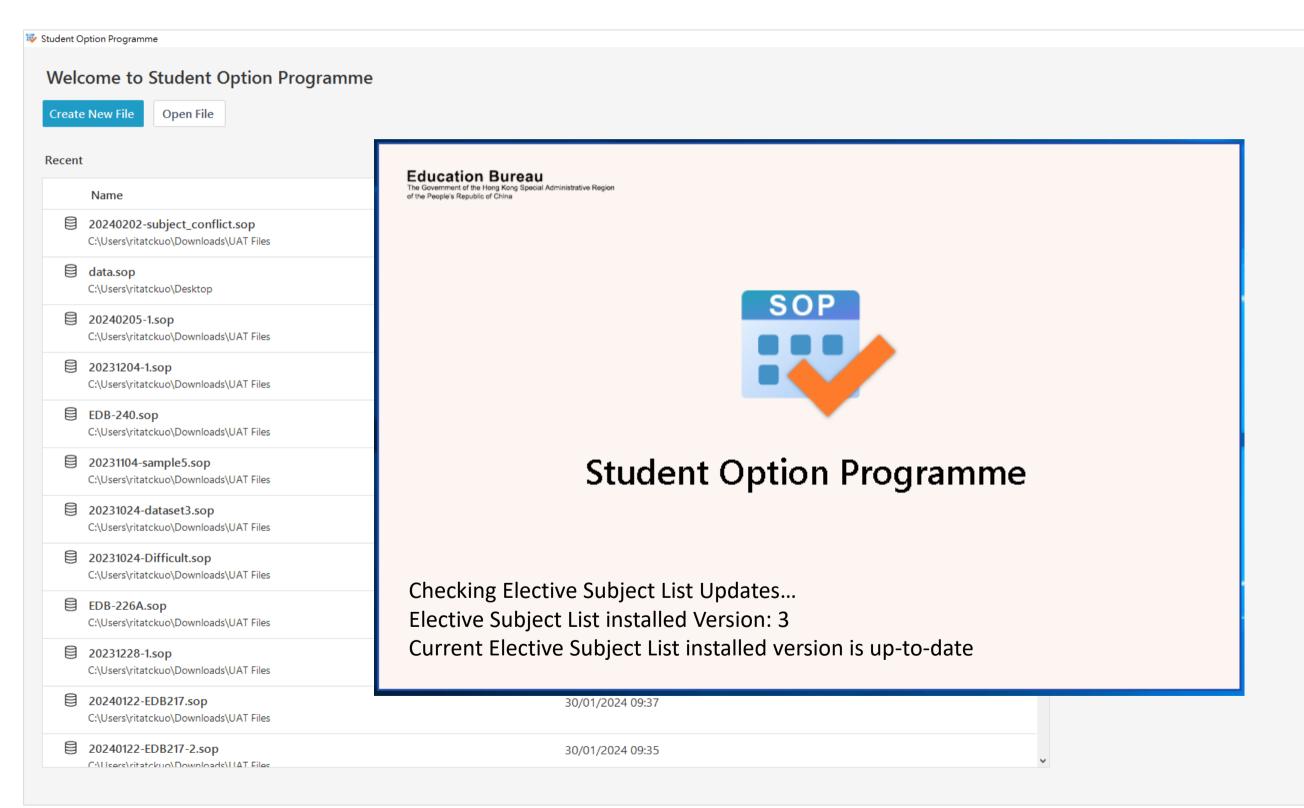
Print student's individual timetable.



# New/Enhanced Functions of the Redeveloped SOP



### **User Interface**





#### **User Interface - Current Status**

Show after data file is opened or click



button in the main menu

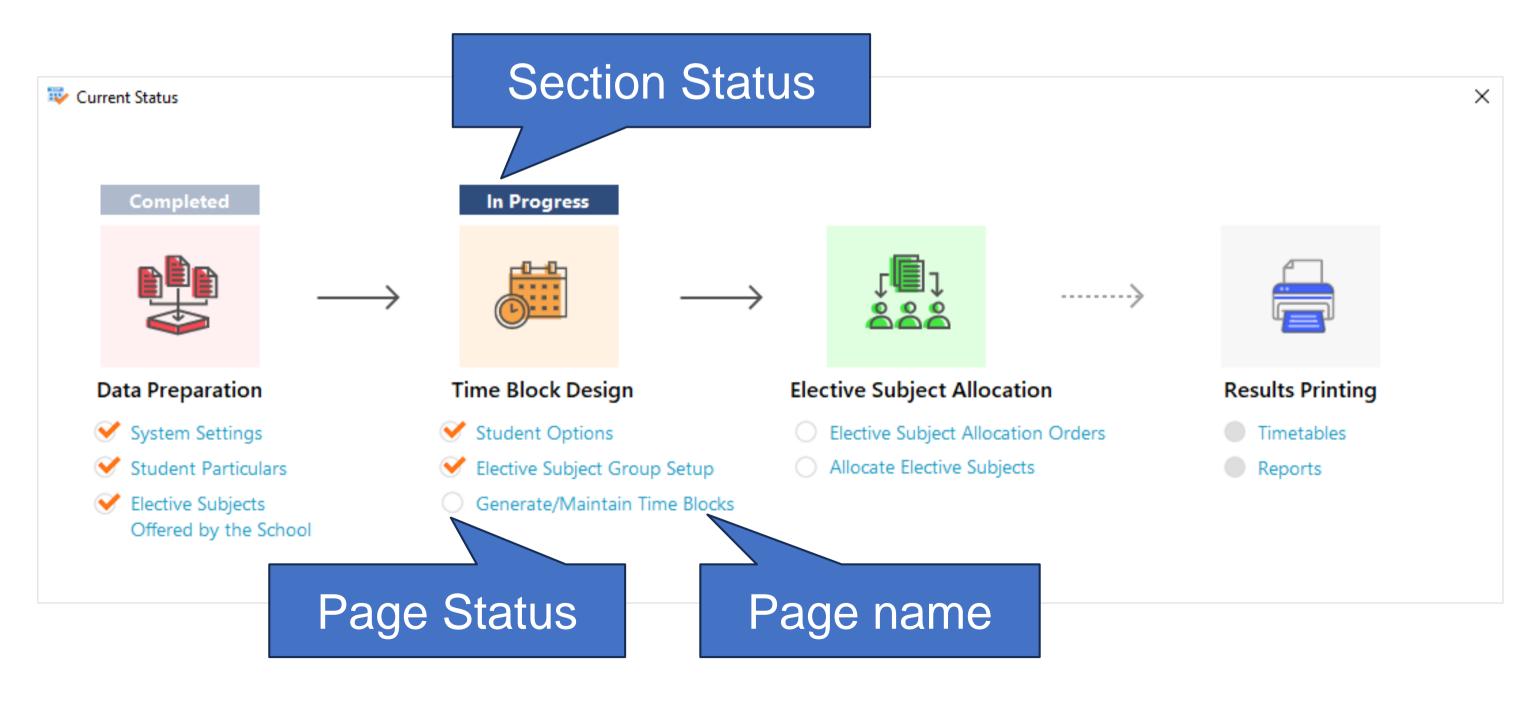
Click the page name to direct to the page

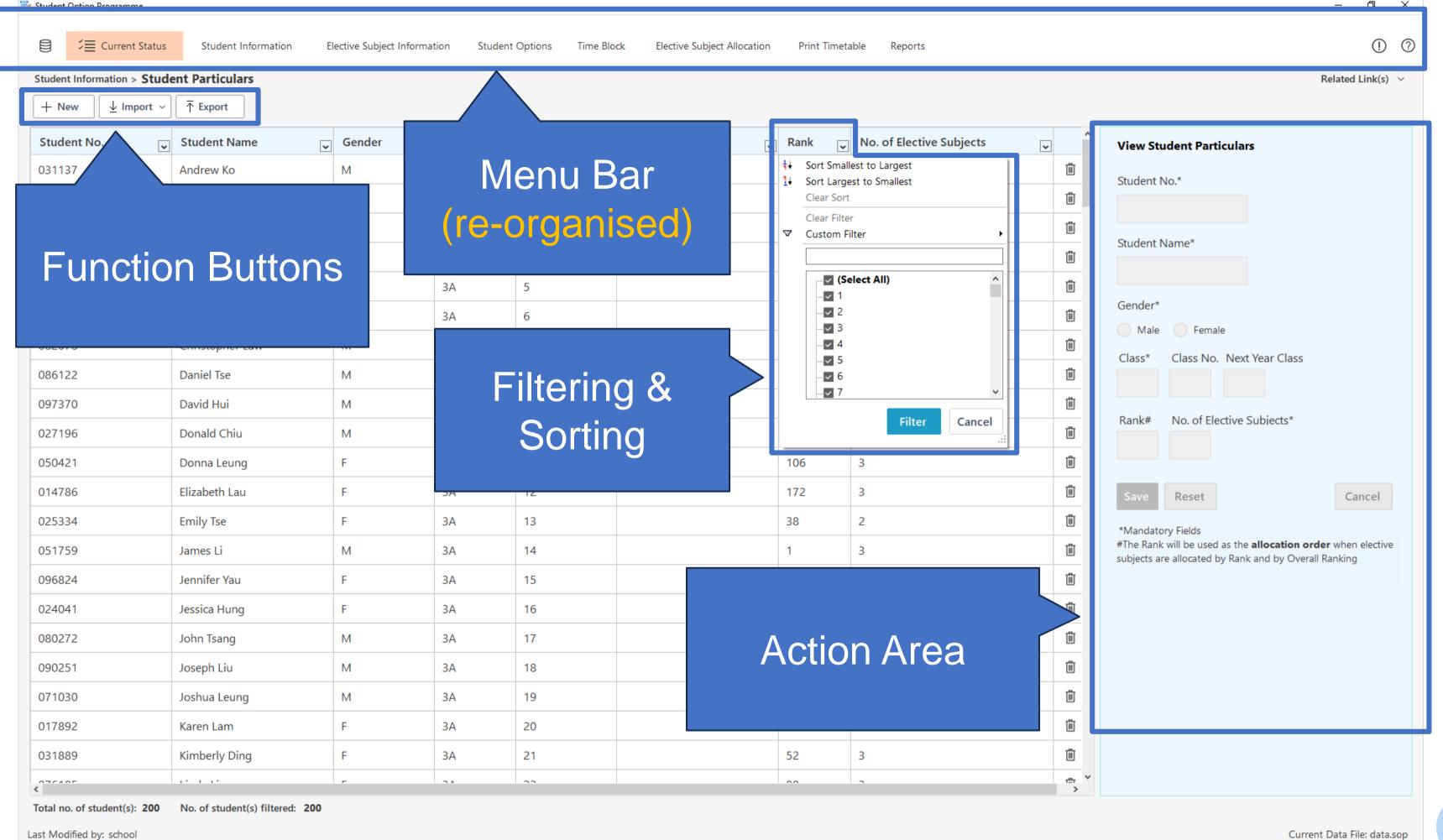


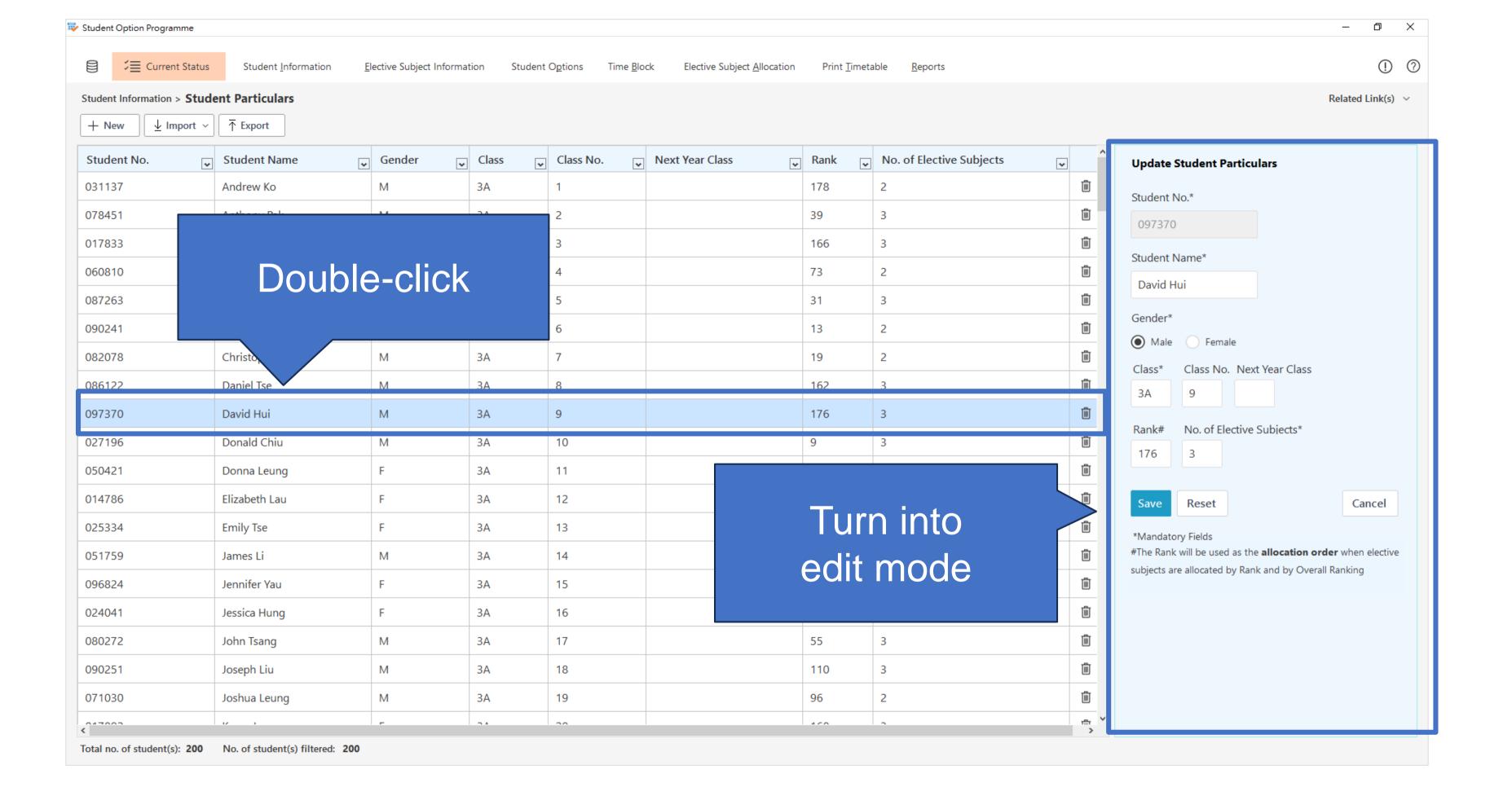
= finished items



= unfinished items









### Time Block Generation

- 1. What is Time Block?
- 2. Generate time blocks to find the best one with estimated satisfaction rate within a time limit
- 3. Generation based on fixed time blocks
- 4. Select a time block structure as confirmed
- 5. Create a customised time block structure
- 6. Calculation of satisfaction rate (top priorities vs all options)

#### 1. What is Time Block?

- Time block refers to the time slots reserved in the school timetable for elective subjects.
- Students can take one of the elective subjects in each time block.
- SOP helps schools to design and optimise the combination of elective subjects for the time blocks based on schools' various constraints (e.g. putting ECON and BAFS into different time blocks if they are taught by the same teacher).

#### Block 1

- PHY
- ECON

•

#### Block 2

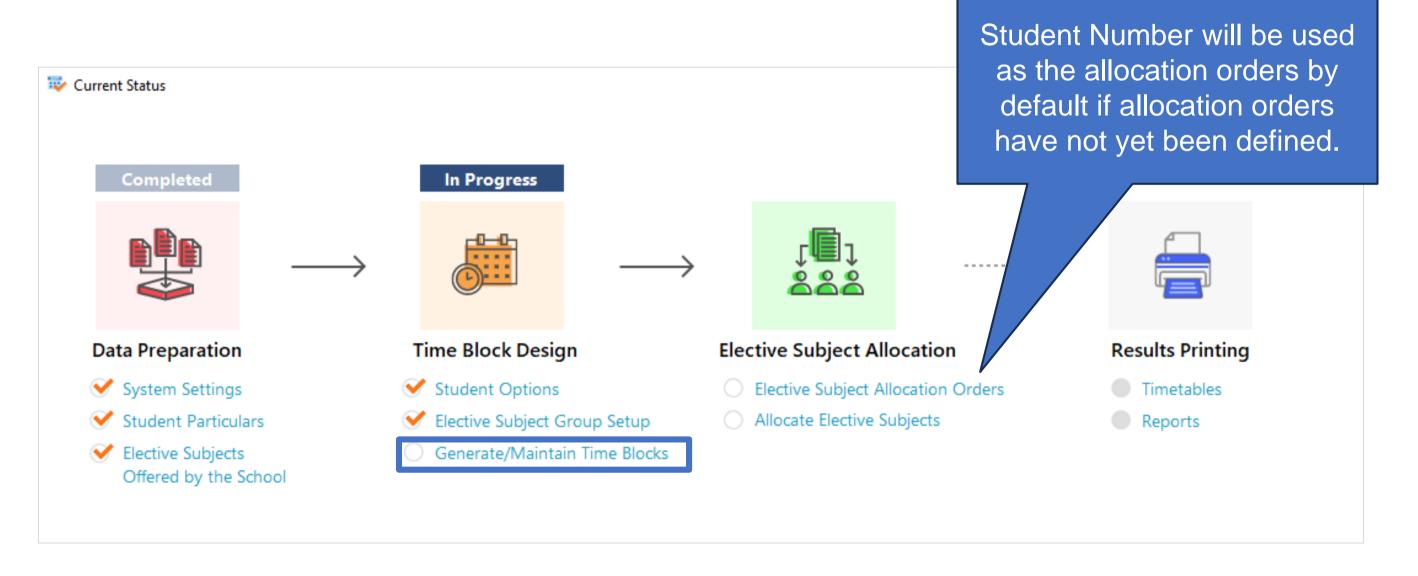
- BIO
- BAFS
- . . .

#### Block 3

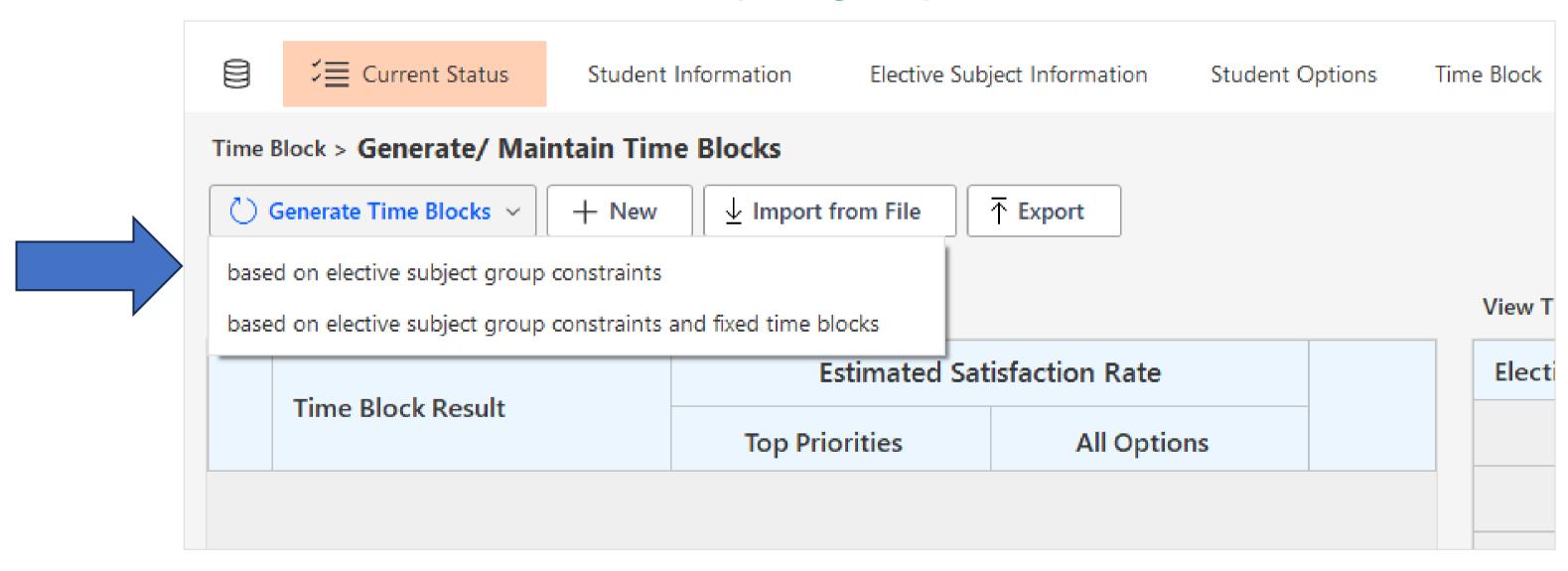
- CHEM
- HIST

The combination of subjects / modules in the time blocks affect the satisfaction rates of students

 Before time block generation, make sure the previous steps are completed.

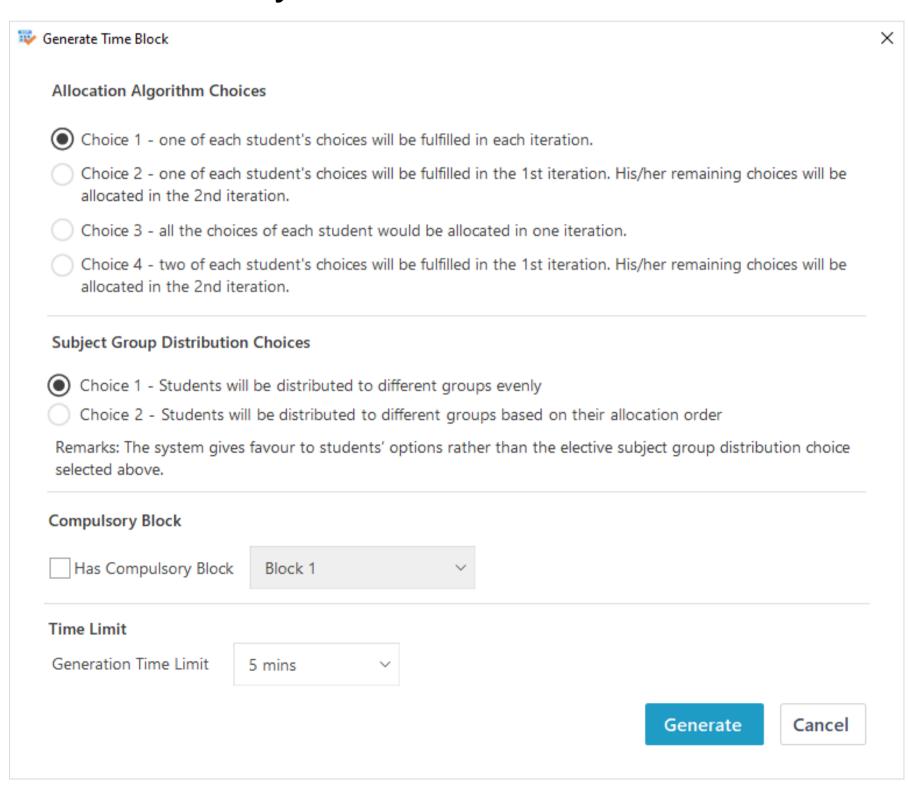


 Users could select to generate time blocks "based on elective subject group constraints" or "based on elective subject group constraints and fixed time blocks"

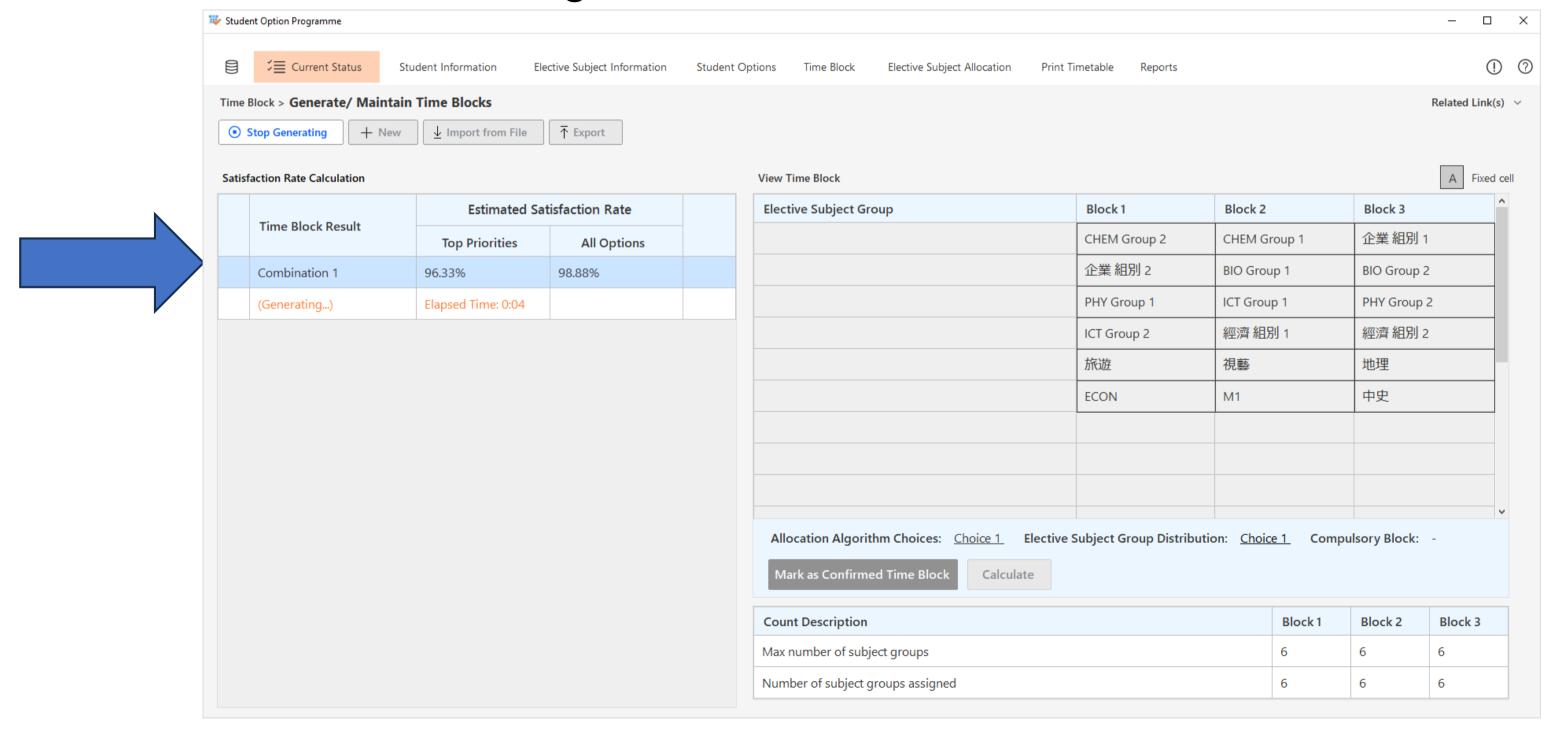


Select the algorithm used by schools and the time limit for the

generation.

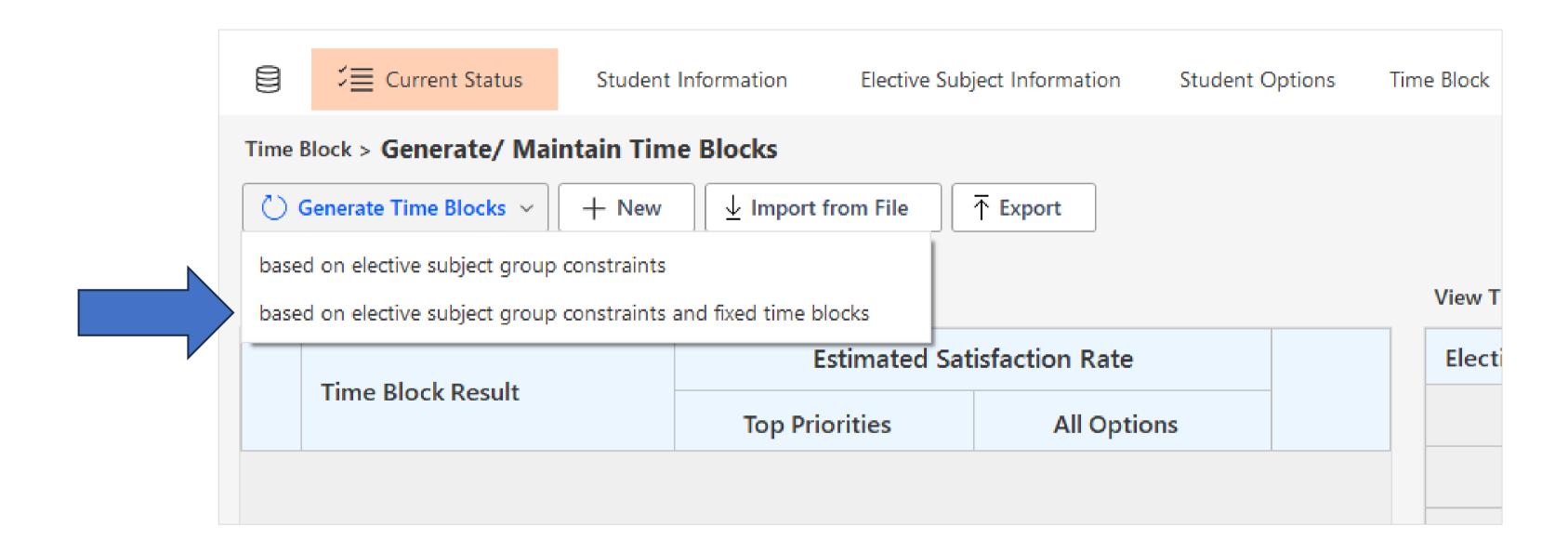


- System starts to generate the time blocks.
- User could click on the generated time block results to check the details.



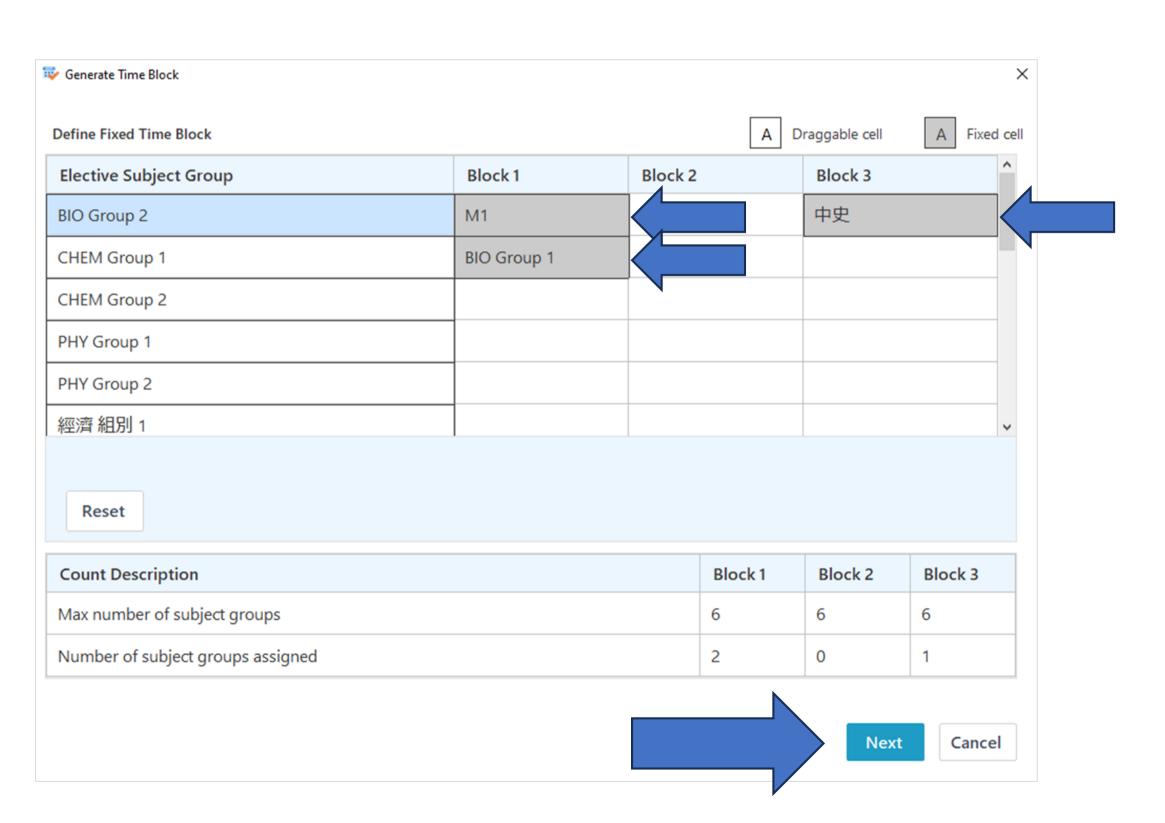
#### 3. Time Block Generation - Generation based on fixed time blocks

 For generation of time blocks "based on elective subject group constraints and fixed time blocks"



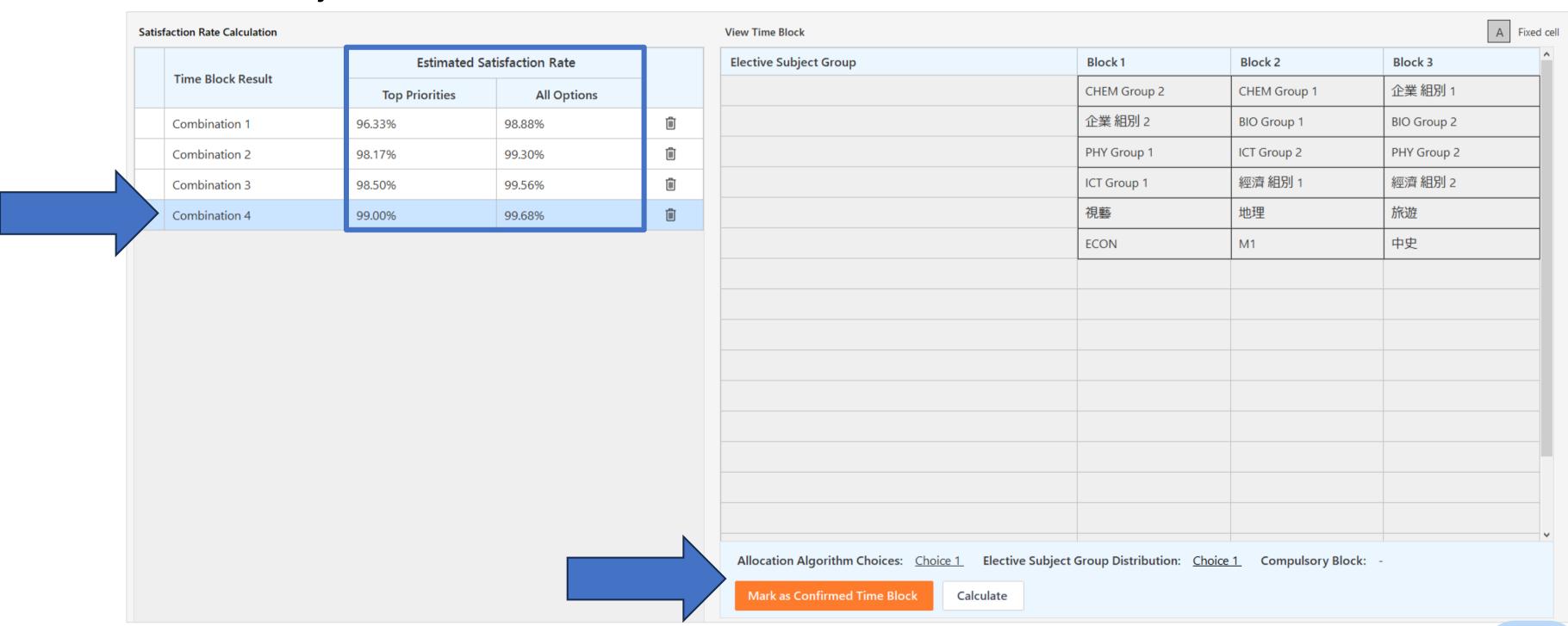
#### 3. Time Block Generation - Generation based on fixed time blocks

• Drag and drop the elective subject to "Block 1", "Block 2" .... to assign and fix the elective subject to the time block



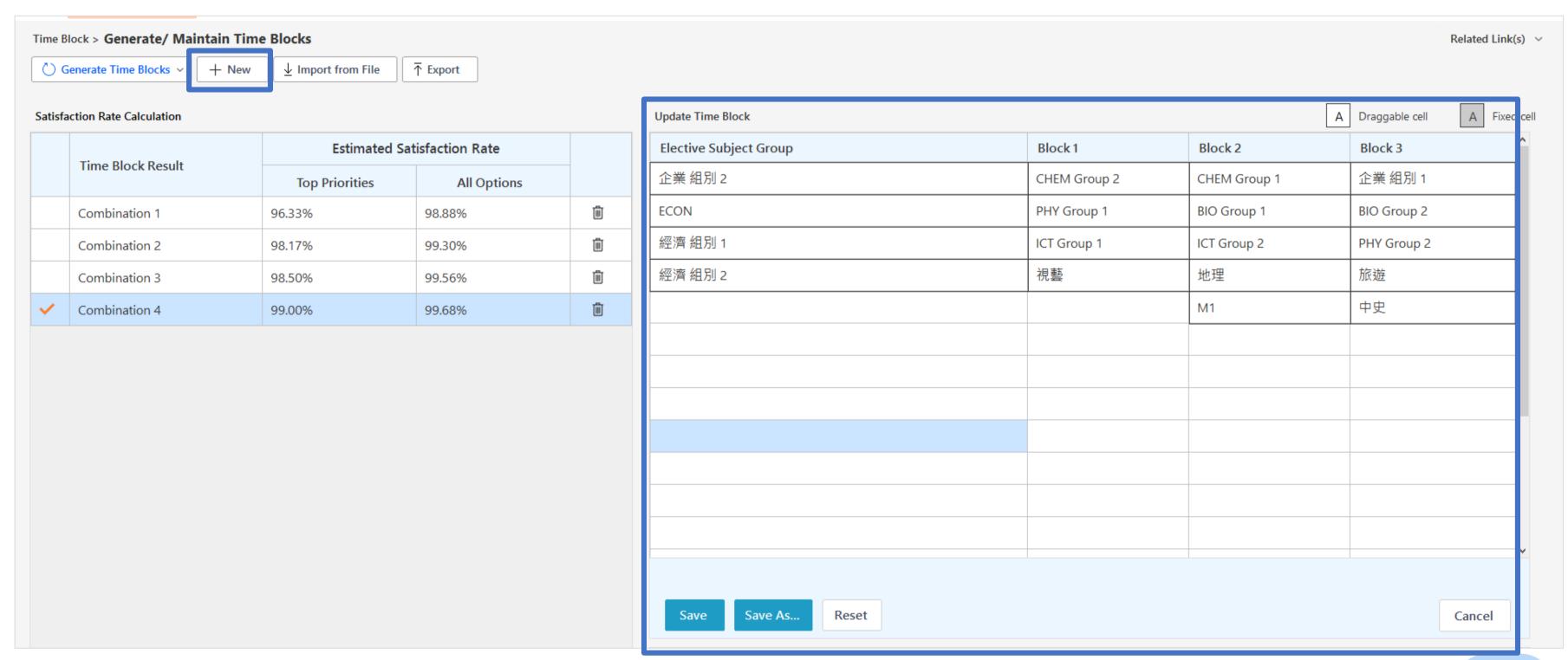
#### 4. Time Block Generation - Select a time block structure as confirmed

 Select a time block as confirmed with reference to the estimated satisfaction rates for subject allocation



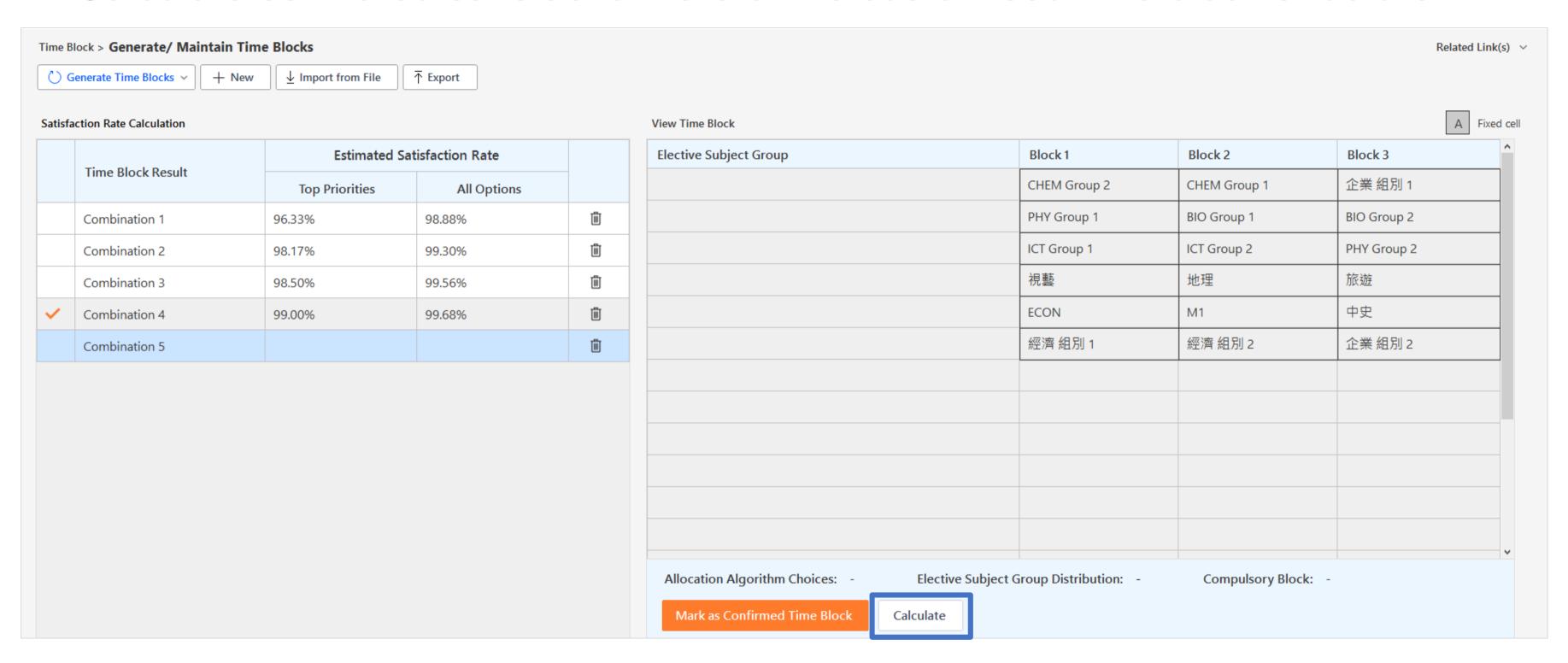
#### 5. Create a customised time block structure

 Create a customised time block by the "New" button or edit and save an existing time block as a new one.



#### 5. Create a customised time block structure

Calculate estimated satisfaction rate of the customised time block structure



#### 6. Calculation of satisfaction rate (top priorities vs all options)

Duplicated/crashed elective subjects with lower priorities are not counted

Allocated Subjects/Modules
Options to be cleaned

No. of Elective Subjects taken by the student = 3

Option	1	2	3	4	5	6
Elective Subjects	BIO	生物	CHEM	PHY	ECON	GEO
Allocation 1	1		2	3	4	5
Allocation 2	1	2	3	4	5	6
Allocation 3	1	2	3	4	5	6

#### 6. Calculation of satisfaction rate (top priorities vs all options)

- Top priorities: calculate allocated subjects in top 3 priorities
- All options: calculate allocated subjects in all options

Allocated Subjects/Modules
Options to be cleaned

No. of elective subjects taken by the student = 3



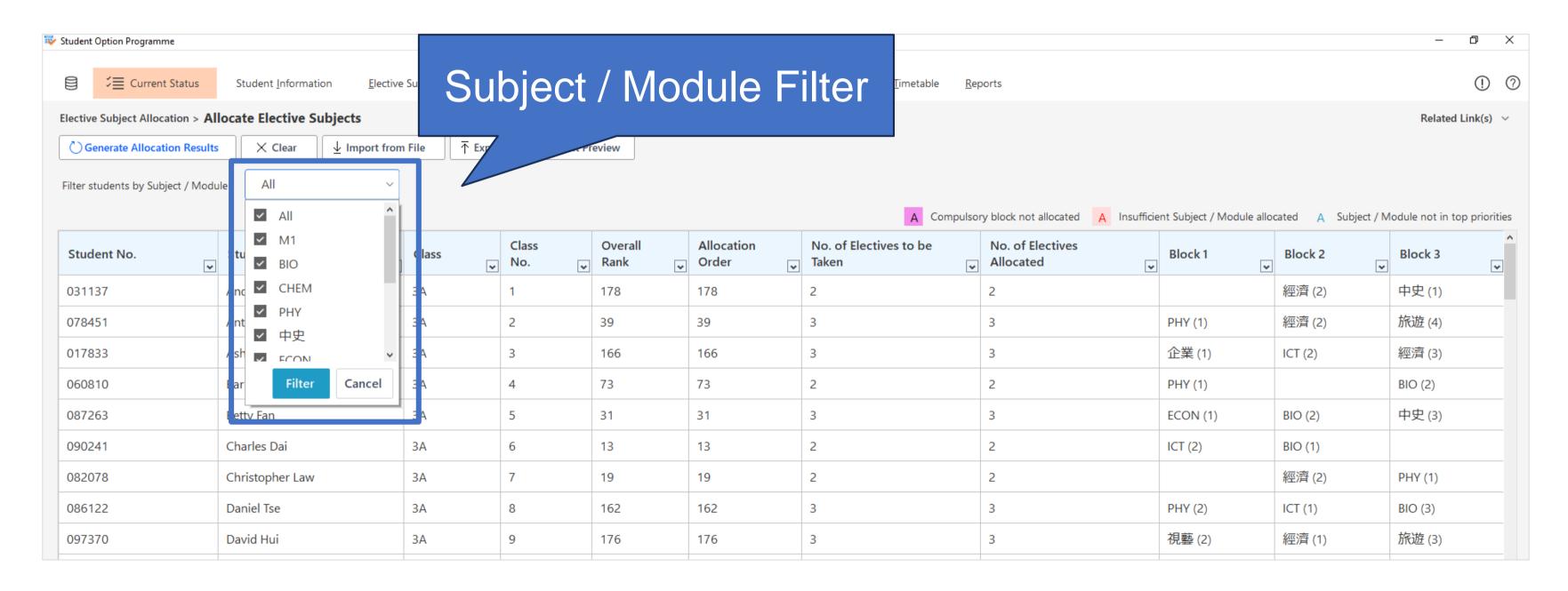
Option	1	2	3	4	5		Satisfaction Rate	
Elective Subjects	BIO	生物	CHEM	PHY	ECON	Allocated Options	Top Priorities	All Options
Allocation 1	1		2	3	4	1, 2, 3	100%	100%
Allocation 2	1	2	3	4	5	2, 3, 4	100/3+ 100/3+ 0 = 66.67%	100/3+ 100/3+ 100/4 = <b>91.67%</b>
Allocation 3	1	2	3	4	5	2, 3, 5	100/3+ 100/3+ 0 = 66.67%	100/3+ 100/3+ 100/5 = <b>86.67%</b>



### Elective Subject Allocation

- 1. New UI arrangement (by overall ranking)
- 2. Selecting students for partial allocation (using ctrl & shift) keys)
- 3. New allocation method (elective subject queue)
- 4. New backtracking function

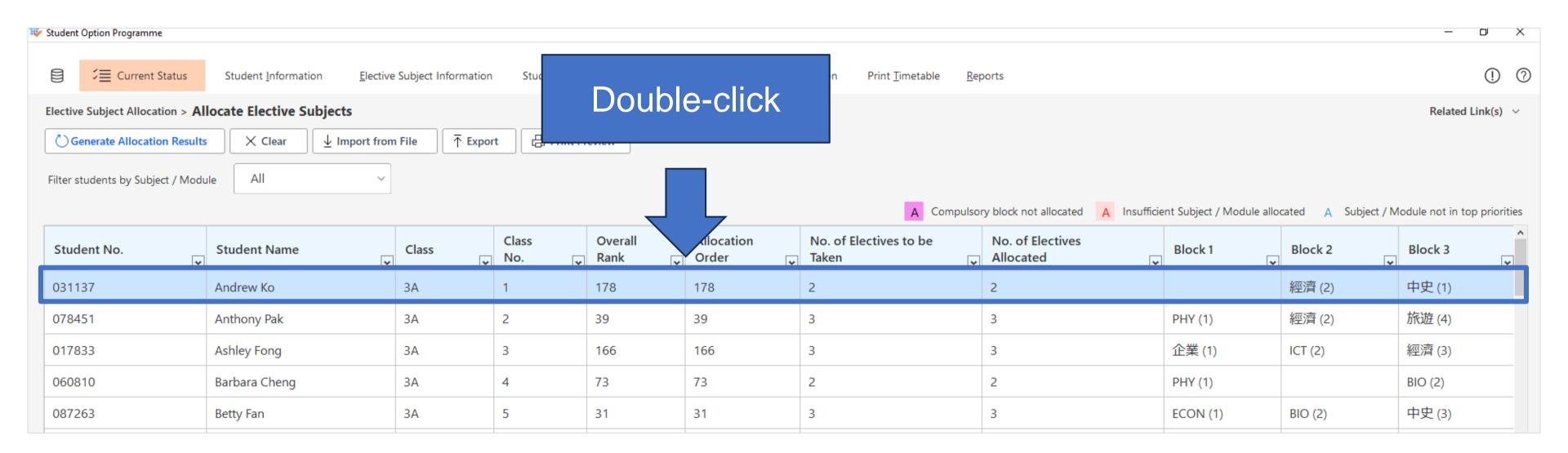
- Filter the students by allocated subject / module
- Support multiple selections on the elective subjects



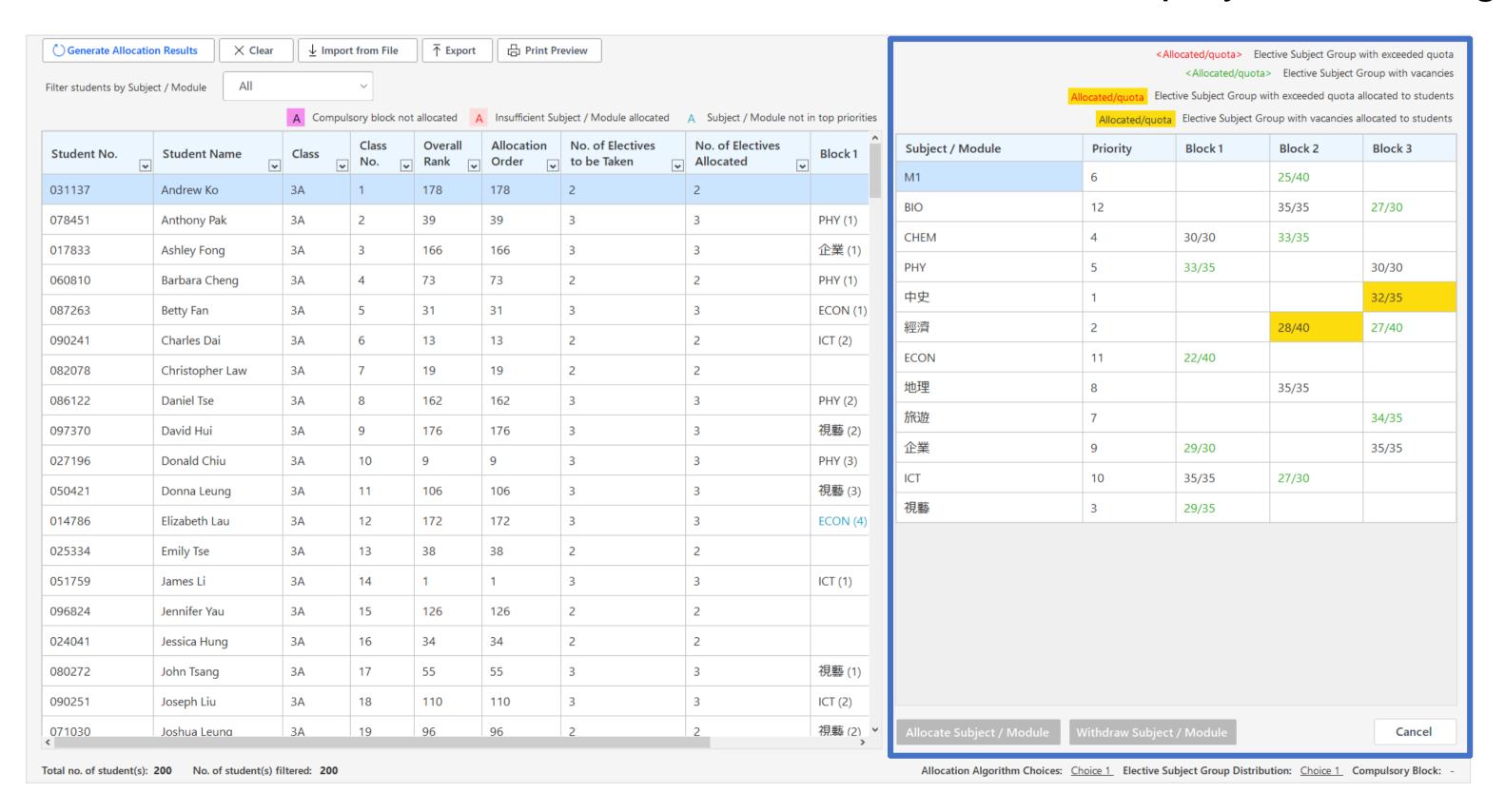
Allocated subjects / modules not in top priorities will be highlighted in blue

Student No.	Student Name	Class	Class No.	Overall Rank	Allocation Order	No. of Electives to be Taken	No. of Electives Allocated	Block 1	Block 2 ✓	Block 3
031137	Andrew Ko	3A	1	178	178	2	2		經濟 (2)	中史 (1)
078451	Anthony Pak	3A	2	39	39	3	3	PHY (1)	經濟 (2)	旅遊 (4)
017833	Ashley Fong	3A	3	166	166	3	3	企業 (1)	ICT (2)	經濟 (3)
060810	Barbara Cheng	3A	4	73	73	2	2	PHY (1)		BIO (2)
087263	Betty Fan	3A	5	31	31	3	3	ECON (1)	BIO (2)	中史 (3)
090241	Charles Dai	3A	6	13	13	2	2	ICT (2)	BIO (1)	
082078	Christopher Law	3A	7	19	19	2	2		經濟 (2)	PHY (1)
086122	Daniel Tse	3A	8	162	162	3	3	PHY (2)	ICT (1)	BIO (3)
097370	David Hui	3A	9	176	176	3	3	視藝 (2)	經濟 (1)	旅遊 (3)
027196	Donald Chiu	3A	10	9	9	3	3	PHY (3)	CHEM (1)	經濟 (2)
050421	Donna Leung	3A	11	106	106	3	3	視藝 (3)	經濟 (1)	企業 (2)
014786	Elizabeth Lau	3A	12	172	172	3	3	ECON (4)	CHEM (1)	BIO (2)
025334	Emily Tse	3A	13	38	38	2	2		ICT (1)	經濟 (2)
051759	James Li	3A	14	1	1	3	3	ICT (1)	BIO (2)	中史 (3)
)96824	Jennifer Yau	3A	15	126	126	2	2		BIO (1)	旅遊 (2)
)24041	Jessica Huna	3A	16	34	34	2	2		經濟 (1)	中史 (2)

 Select and double click a student to view elective subject allocation result with the student's options or perform manual allocation



The allocation result of the selected student will be displayed on the right



 Select the allocated subject and click "Withdraw Subject / Module" button to withdraw the selected subject manually

Subject / Module	Priority	Block 1	Block 2	Block 3				
M1	6		25/40					
BIO	12		35/35	27/30				
СНЕМ	4	30/30	33/35					
PHY	5	33/35		30/30				
中史	1			32/35				
經濟	2		28/40	27/40				
ECON	11	22/40						
地理	8		35/35					
旅遊	7			34/35				
企業	9	29/30		35/35				
ICT	10	35/35	27/30					
視藝	3	2						
	,		'	'				
Allocate Subject / Mo	Allocate Subject / Module Withdraw Subject / Module Cancel							

Subject / Module	Priority	Block 1	Block 2	Block 3
M1	6		25/40	
BIO	12		35/35	27/30
CHEM	4	30/30	33/35	
PHY	5	33/35		30/30
中史	1			32/35
經濟	2		27/40	27/40
ECON	11	22/40		
地理	8		35/35	
旅遊	7			34/35
企業	9	29/30		35/35
ICT	10	35/35	27/30	
視藝	3	29/35		
	,	,		,
Allocate Subject / Module	Withdra	w Subject / M	odule	Cancel

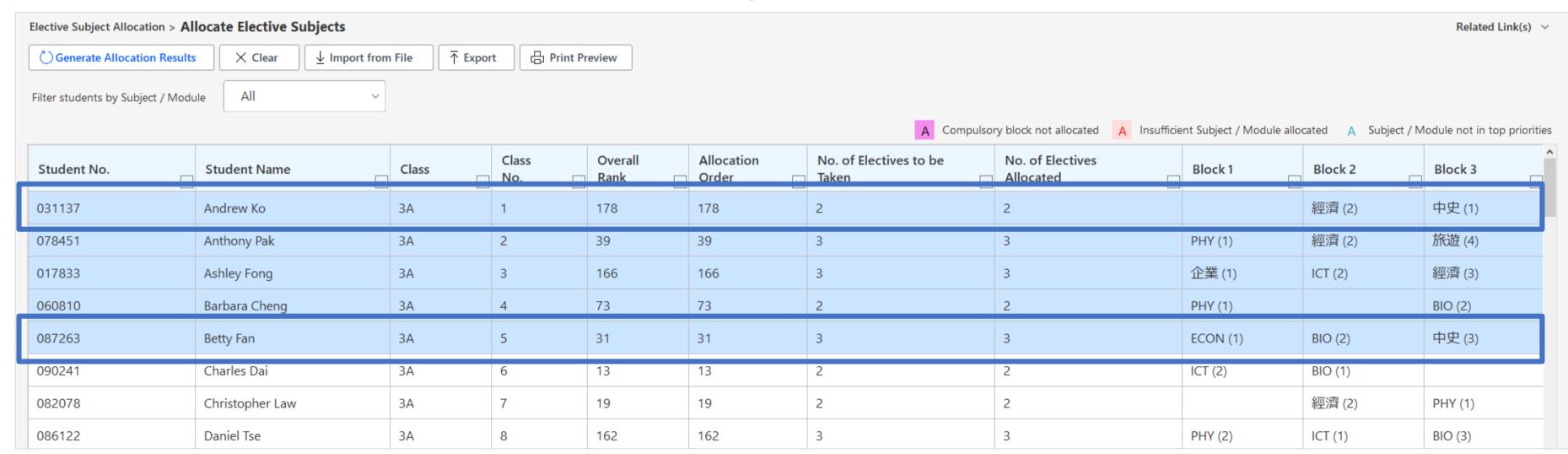
 Select the non-allocated subject and click "Allocate Subject / Module" button to allocate the subject manually

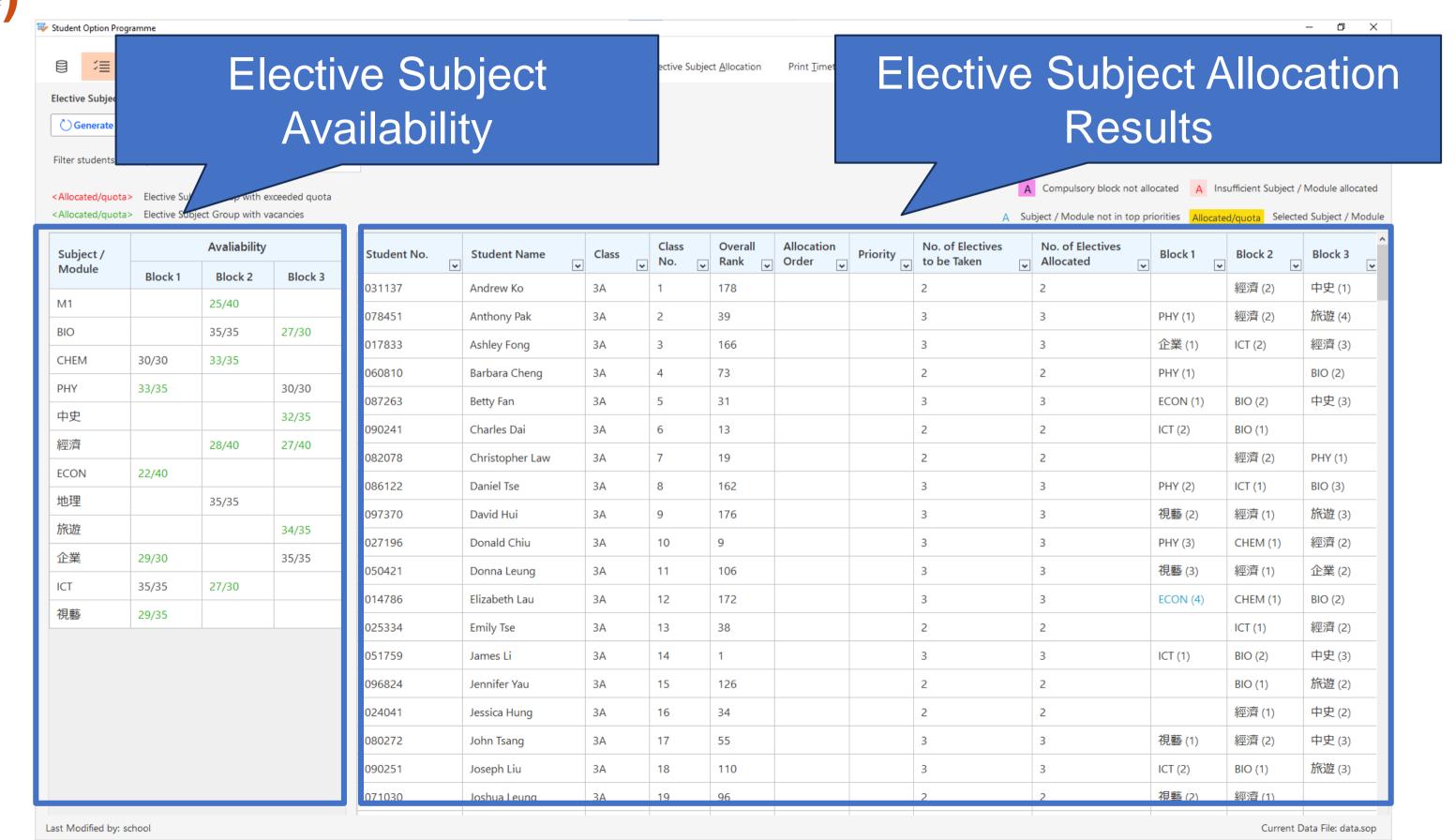
Subject / Module	Priority	Block 1	Block 2	Block 3
M1	6		25/40	
BIO	12		35/35	27/30
СНЕМ	4	30/30	33/35	
PHY	5	33/35		30/30
中史	1			32/35
經濟	2		27/40	27/40
ECON		22/40		
地理	8		35/35	
旅遊	7			34/35
企業	9	29/30		35/35
ICT	10	35/35	27/30	
視藝	3	29/35		
	,	,	·	,
Allocate Subject / Mo	odule Withd	raw Subject /	Module	Cancel

Subject / Module	Priority	Block 1	Block 2	Block 3		
M1	6		Enha	inced to a	allow th	
BIO	12		excess of elective s			
CHEM	4	30/30	group	quota by allocatio		
PHY	5	33/35		30/30		
中史	1			32/35		
經濟	2		27/40	27/40		
ECON	11	23/40				
地理	8		35/35			
旅遊	7			34/35		
企業	9	29/30		35/35		
ICT	10	35/35	27/30			
視藝	3	29/35				
	,		,	'		
Allocate Subject / Mod	dule Withdr	aw Subject /	Module	Cancel		

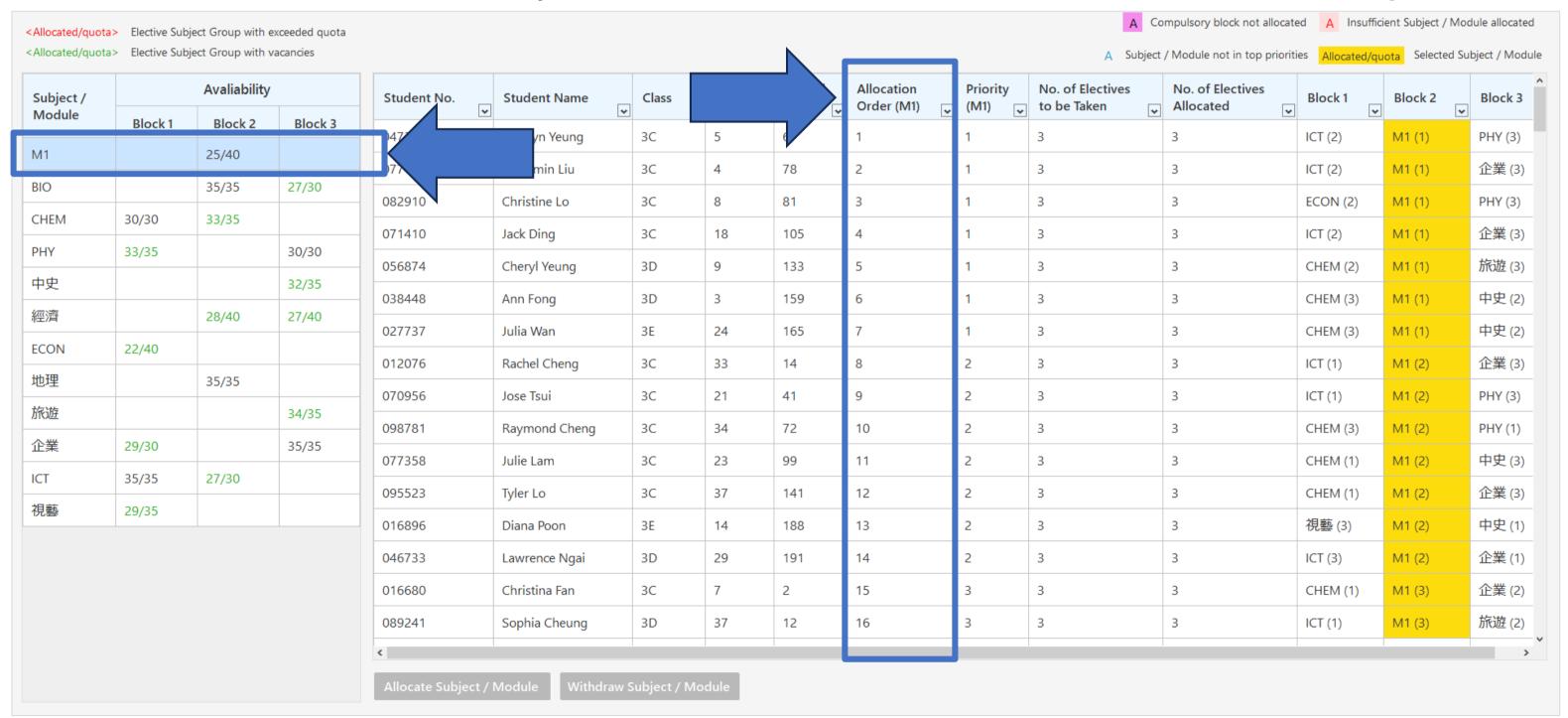
# 2. Elective Subject Allocation – Selecting students for partial allocation (using ctrl & shift keys)

- Ctrl key + Left click: To select multiple non-consecutive students
- Shift key + Left click: To select a range of consecutive emails

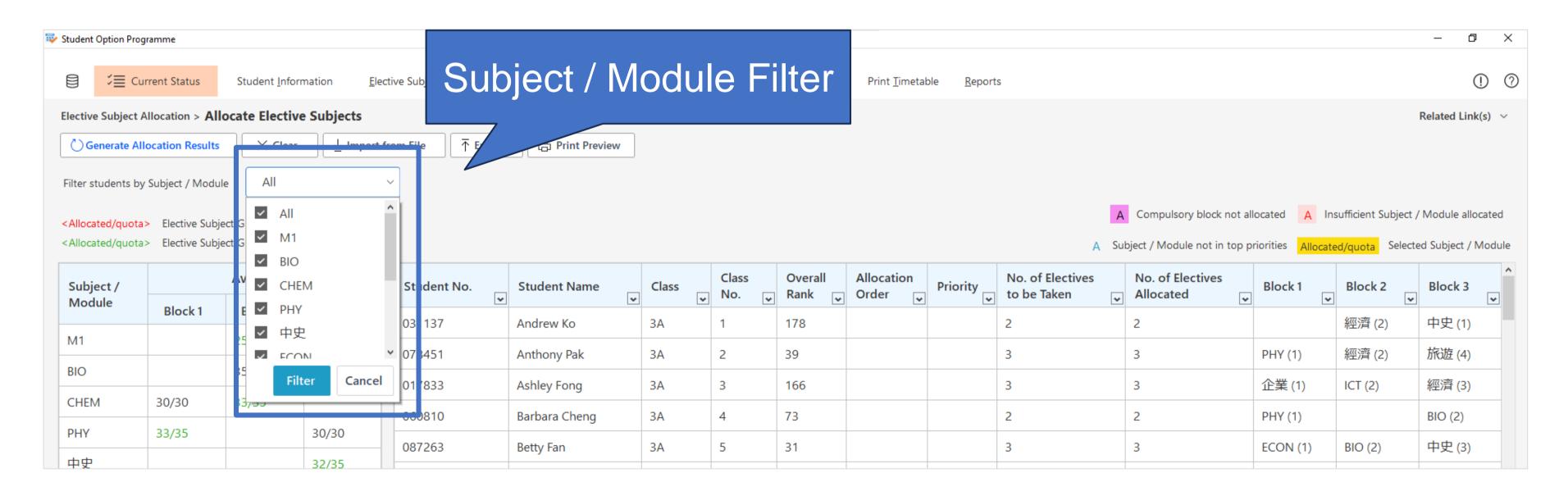




- Select one of the subjects on the Elective Subject Availability table
- Students will be sorted by the allocation order of the selected subject



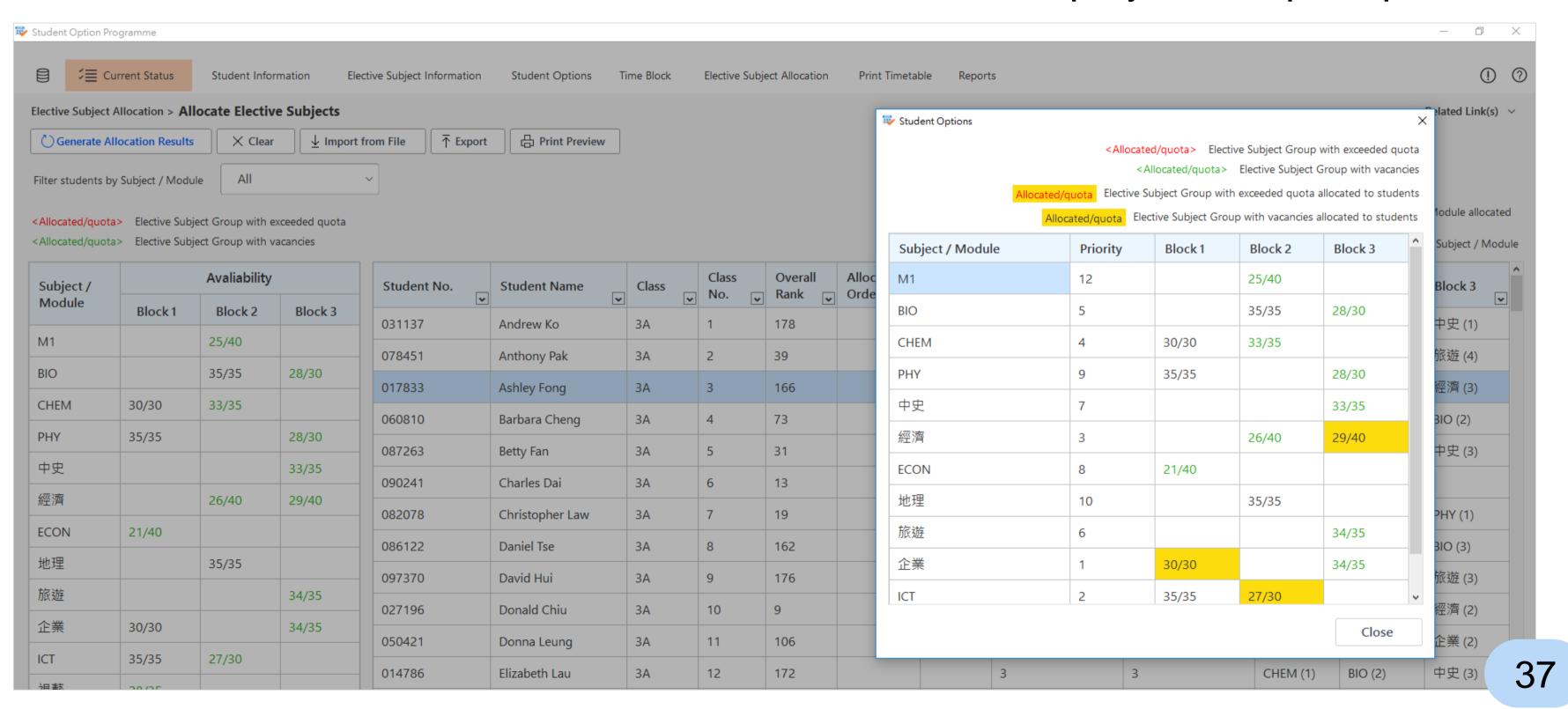
- Filter the students by Subject / Module
- Support multiple selections on the elective subjects



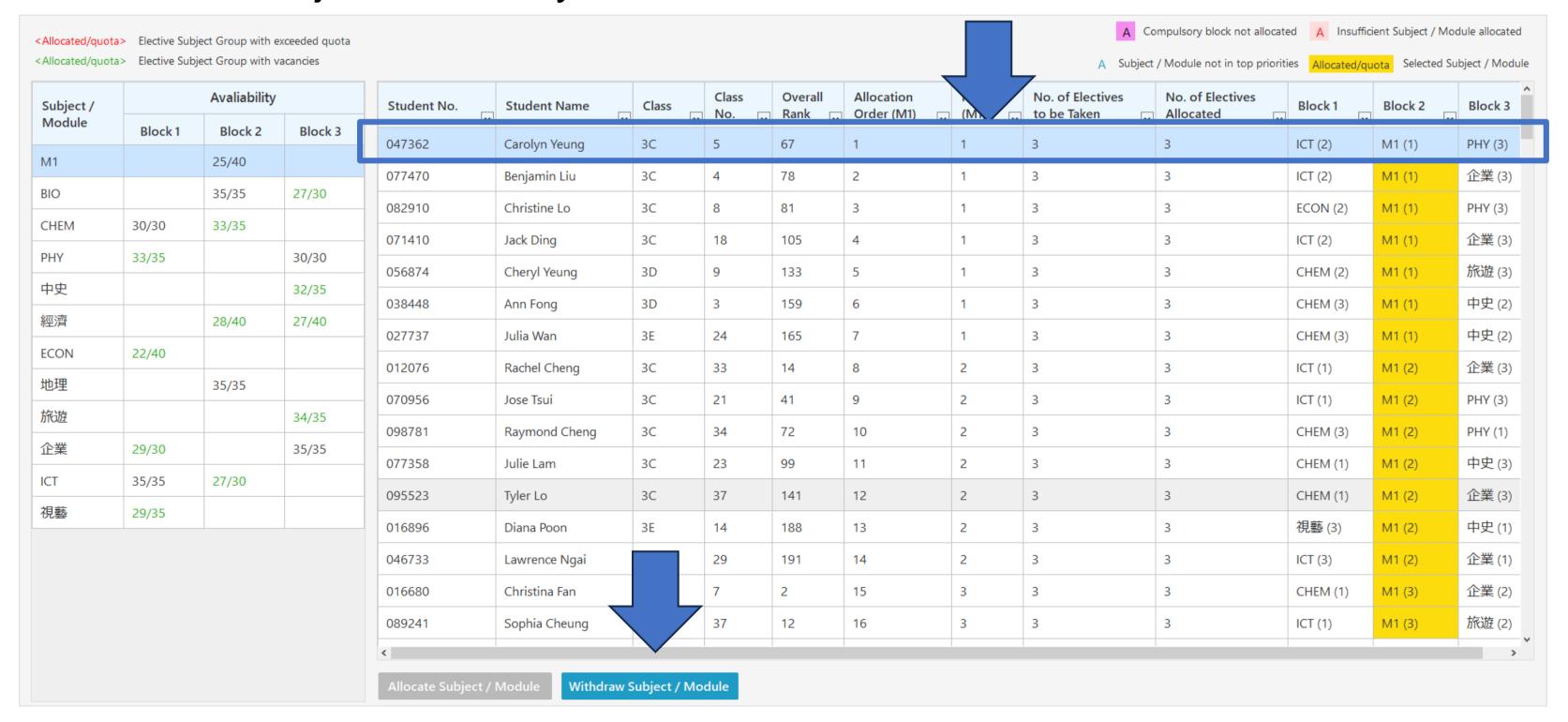
 Select and double click a student to view elective subject allocation result with the student's options



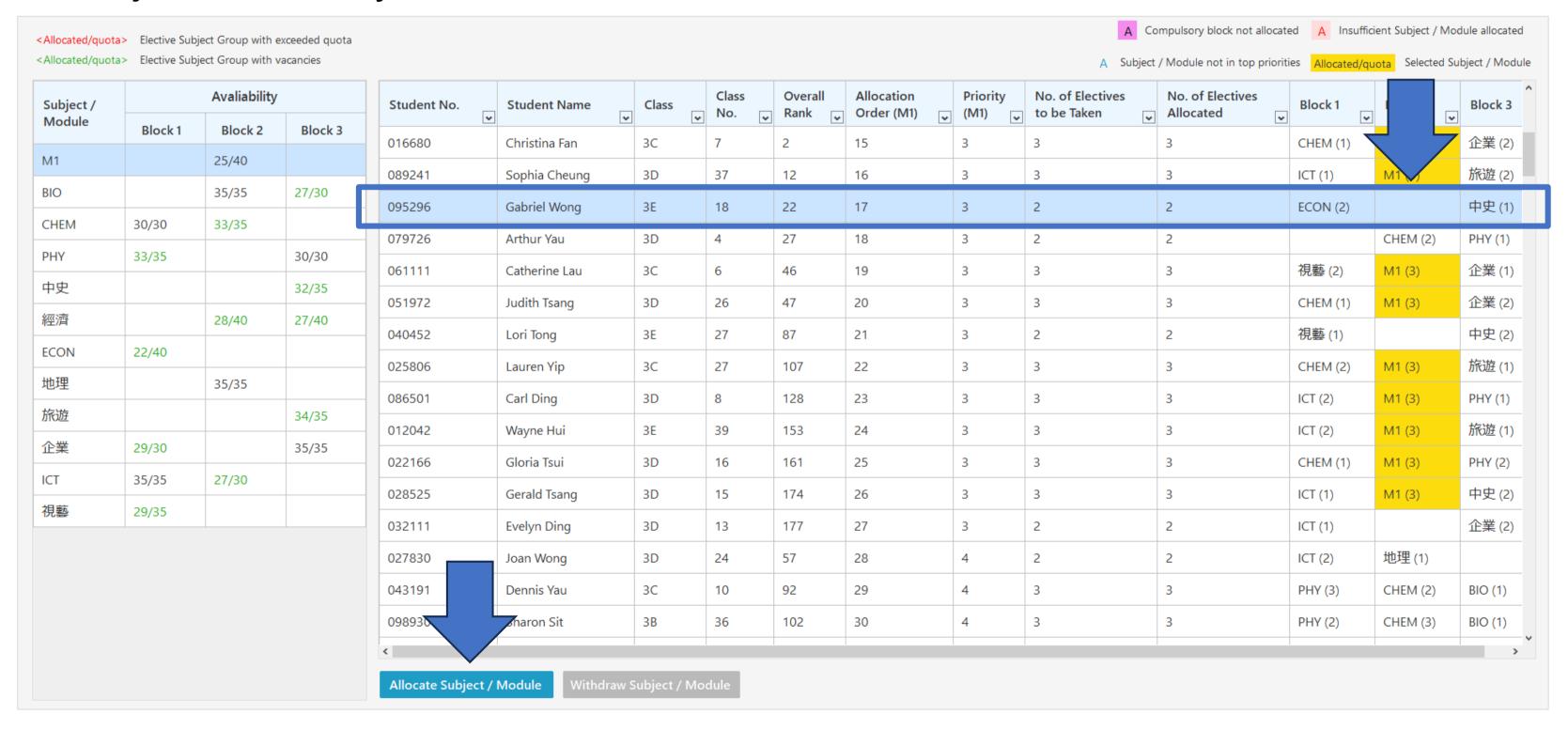
• The allocation result of the selected student will be displayed in a prompt window



 Select a student and click "Withdraw Subject / Module" button to withdraw the selected subject manually



 Select a student and click "Allocate Subject / Module" button to allocate the subject manually



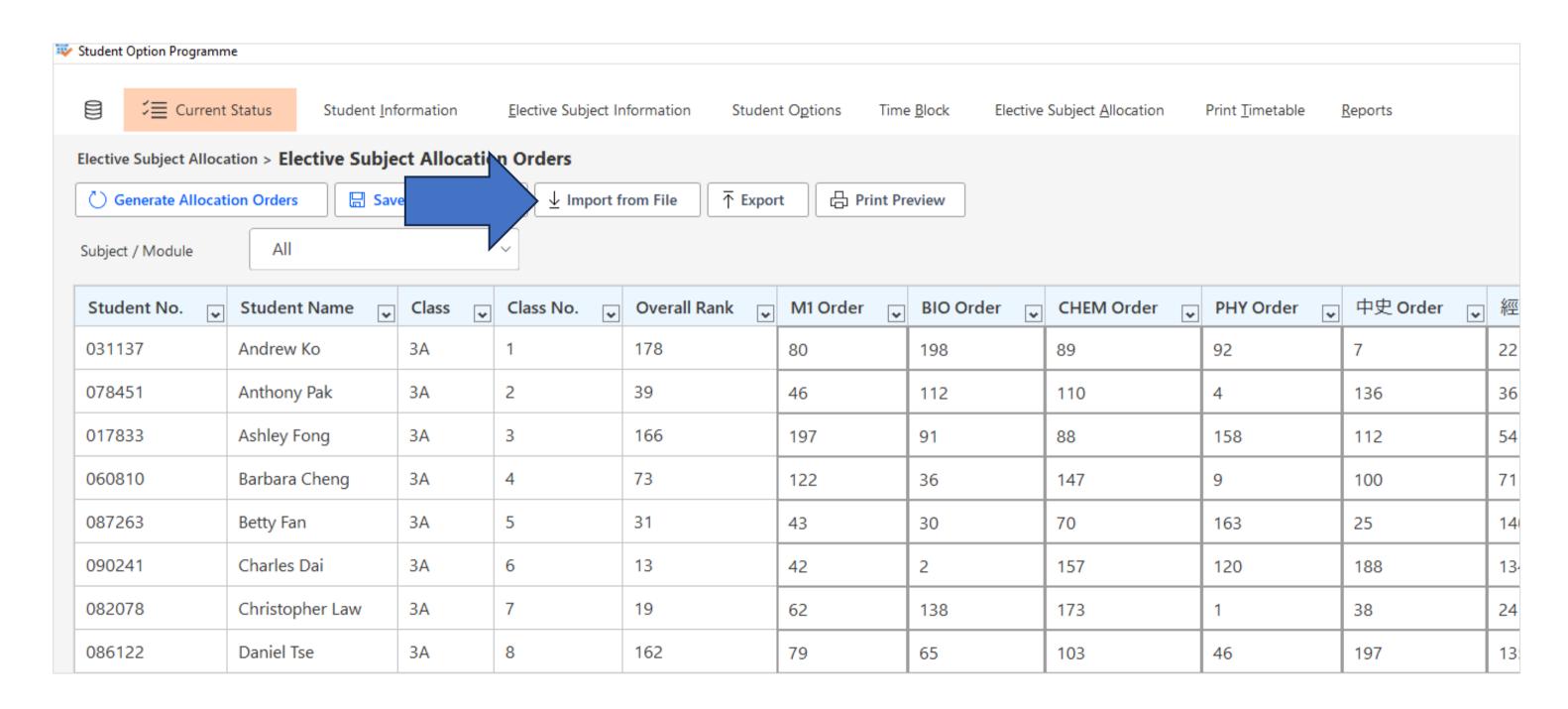
Select the allocation method when user creates a new SOP file

v Create New File			
Setup the Data File			
No. of Time Blocks			
3			
No. of Elective Subjects	to be taken by Students in general		
3			
Method of Elective Subj	ect Allocation		
by Overall Ranking	by Elective Subject Queue		
		Next	Cancel

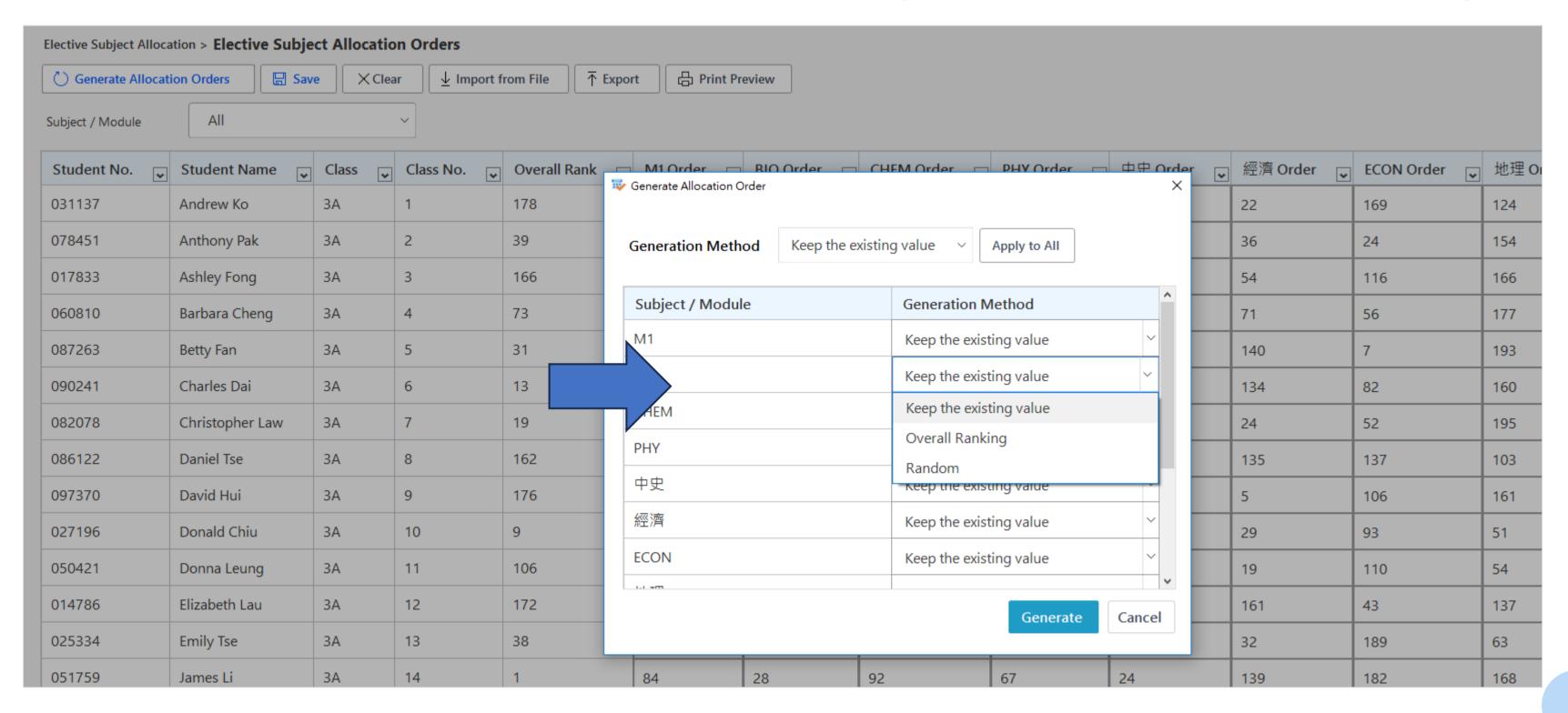
• Define students' subject allocation orders of all elective subjects offered

⊜ %≣ Curr	rent Status Student Ir	formation	Elective Subject	Information Studer	nt Options Tim	e Block Elective	Subject Allocation	Print Timetable	Reports				Q	D (
ective Subject Al	llocation > Elective Subj	ect Allocatio	on Orders										Related Lin	ık(s)
C Generate Allo	ocation Orders 🖫 Sa	ve X Clea	ar <u></u>	t from File	rt 🖟 Print Pr	review						Α	Duplicated allocation	n ord
ubject / Module	All		~											
Student No.	Student Name	Class	Class No.	Overall Rank	M1 Order	BIO Order	CHEM Order	PHY Order	中史 Order 🖂	經濟 Order	ECON Order	地理 Order 🔻	旅遊 Order	~
031137	Andrew Ko	3A	1	178	80	198	89	92	7	22	169	124	102	1
078451	Anthony Pak	3A	2	39	46	112	110	4	136	36	24	154	48	
017833	Ashley Fong	3A	3	166	197	91	88	158	112	54	116	166	84	1
060810	Barbara Cheng	3A	4	73	122	36	147	9	100	71	56	177	158	
087263	Betty Fan	3A	5	31	43	30	70	163	25	140	7	193	89	+
090241	Charles Dai	3A	6	13	42	2	157	120	188	134	82	160	31	T
082078	Christopher Law	3A	7	19	62	138	173	1	38	24	52	195	111	†
086122	Daniel Tse	3A	8	162	79	65	103	46	197	135	137	103	173	T
097370	David Hui	3A	9	176	60	197	139	114	54	5	106	161	32	1
027196	Donald Chiu	ЗА	10	9	116	152	2	48	59	29	93	51	164	T
050421	Donna Leung	ЗА	11	106	165	146	118	128	193	19	110	54	59	1
014786	Elizabeth Lau	3A	12	172	174	46	18	113	35	161	43	137	64	1
025334	Emily Tse	3A	13	38	120	153	142	51	96	32	189	63	165	
051759	James Li	3A	14	1	84	28	92	67	24	139	182	168	199	
096824	Jennifer Yau	3A	15	126	167	17	80	172	130	153	28	85	18	
024041	Jessica Hung	3A	16	34	44	188	126	182	11	1	105	142	45	
080272	John Tsang	3A	17	55	184	72	145	165	27	23	131	184	70	
090251	Joseph Liu	3A	18	110	58	13	132	143	139	168	85	48	25	
071030	Joshua Leung	3A	19	96	151	130	116	58	191	18	91	71	36	1
017892	Karen Lam	3A	20	168	198	80	138	192	93	8	108	162	65	
031889	Kimberly Ding	3A	21	52	48	127	6	27	87	50	145	57	95	

Import students' subject allocation orders

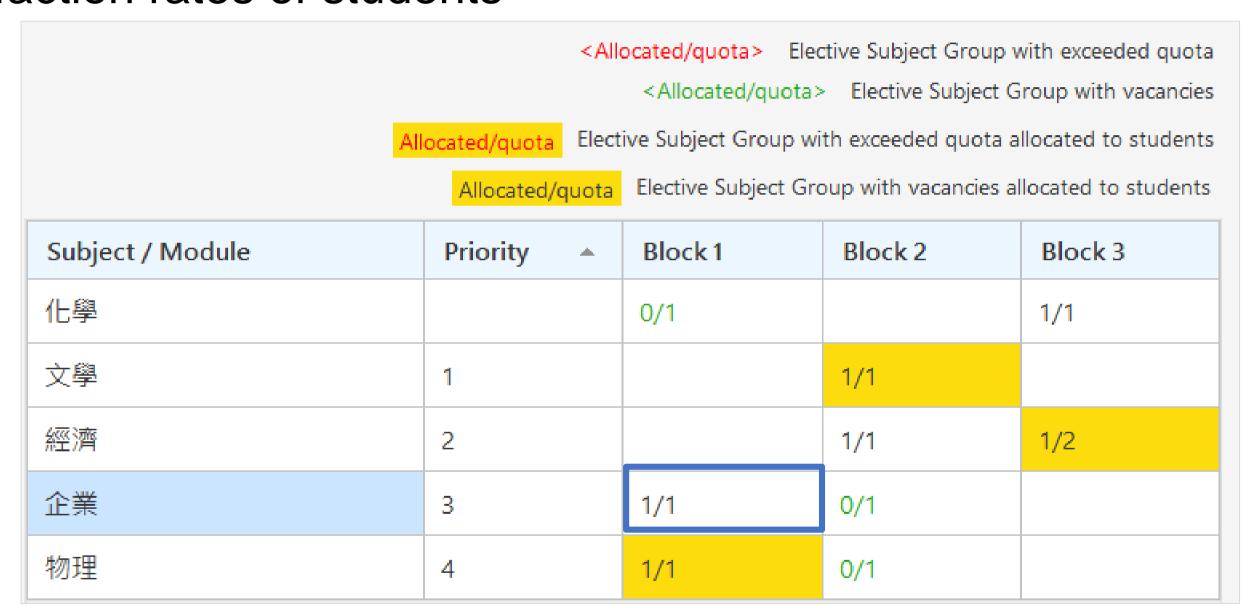


Generate allocation order by overall ranking, random or keep the existing value



### 4. New backtracking function

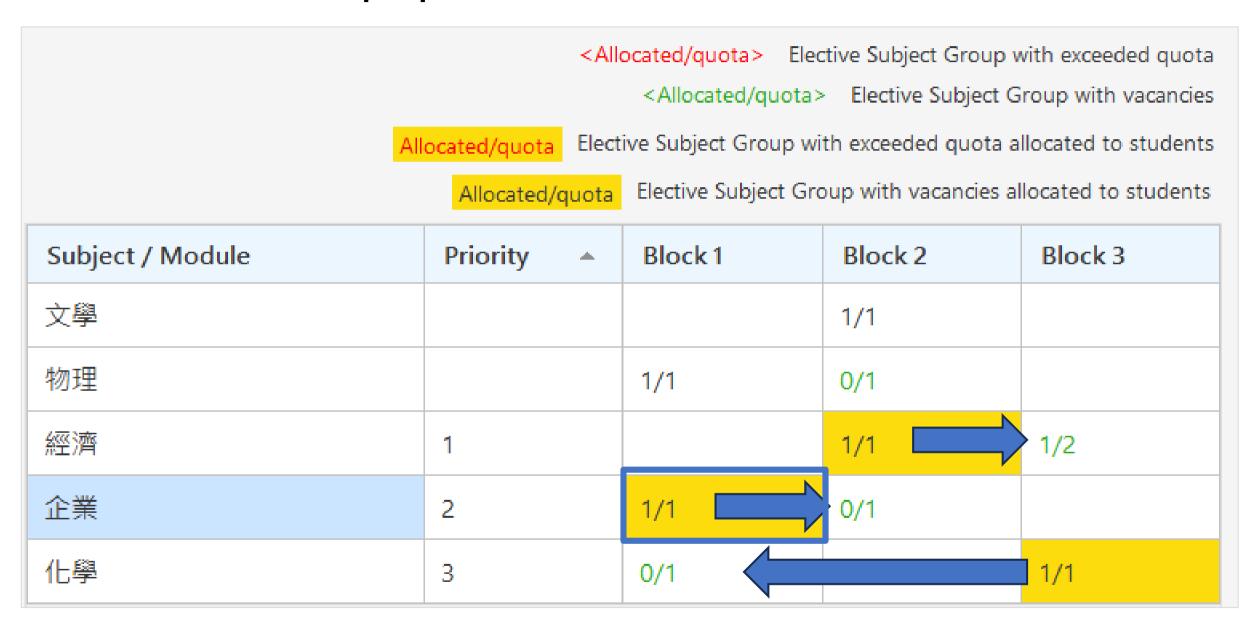
 SOP will try to improve the allocation results so as to increase the overall satisfaction rates of students



Allocation result of student A

### 4. New backtracking function

 SOP will swap the elective subject allocated without affecting the satisfaction rate of student B to free up quota for student A



Allocation result of student B

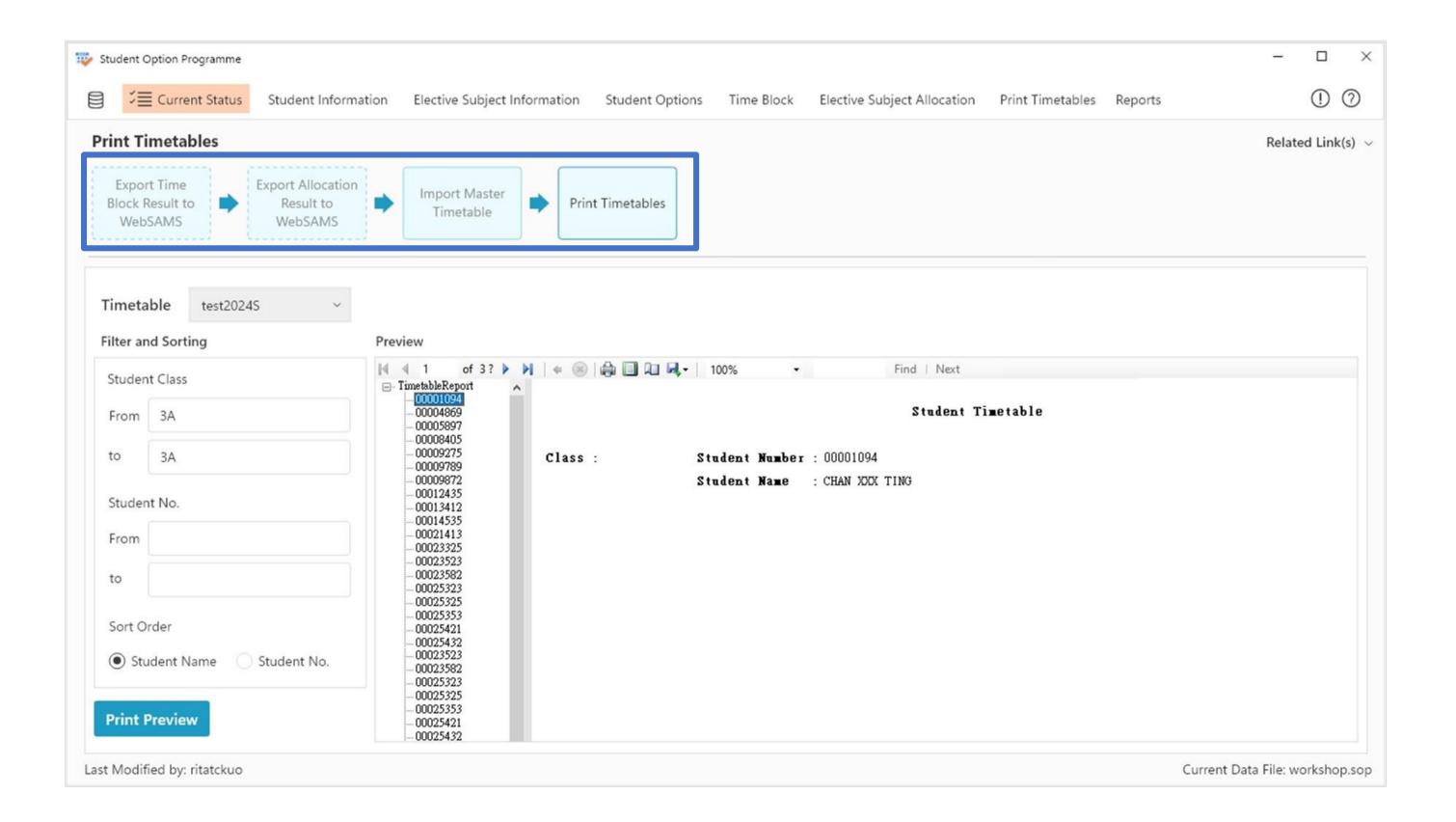


## Other Improvements

- 1. New UI of printing timetables
- 2. Allocation of subjects / modules without duplication
- 3. Setup elective subject groups with different quotas
- 4. Allocate elective subjects to students taking different no. of elective subjects
- 5. No merged cells in the reports exported in Excel format
- 6. Data security

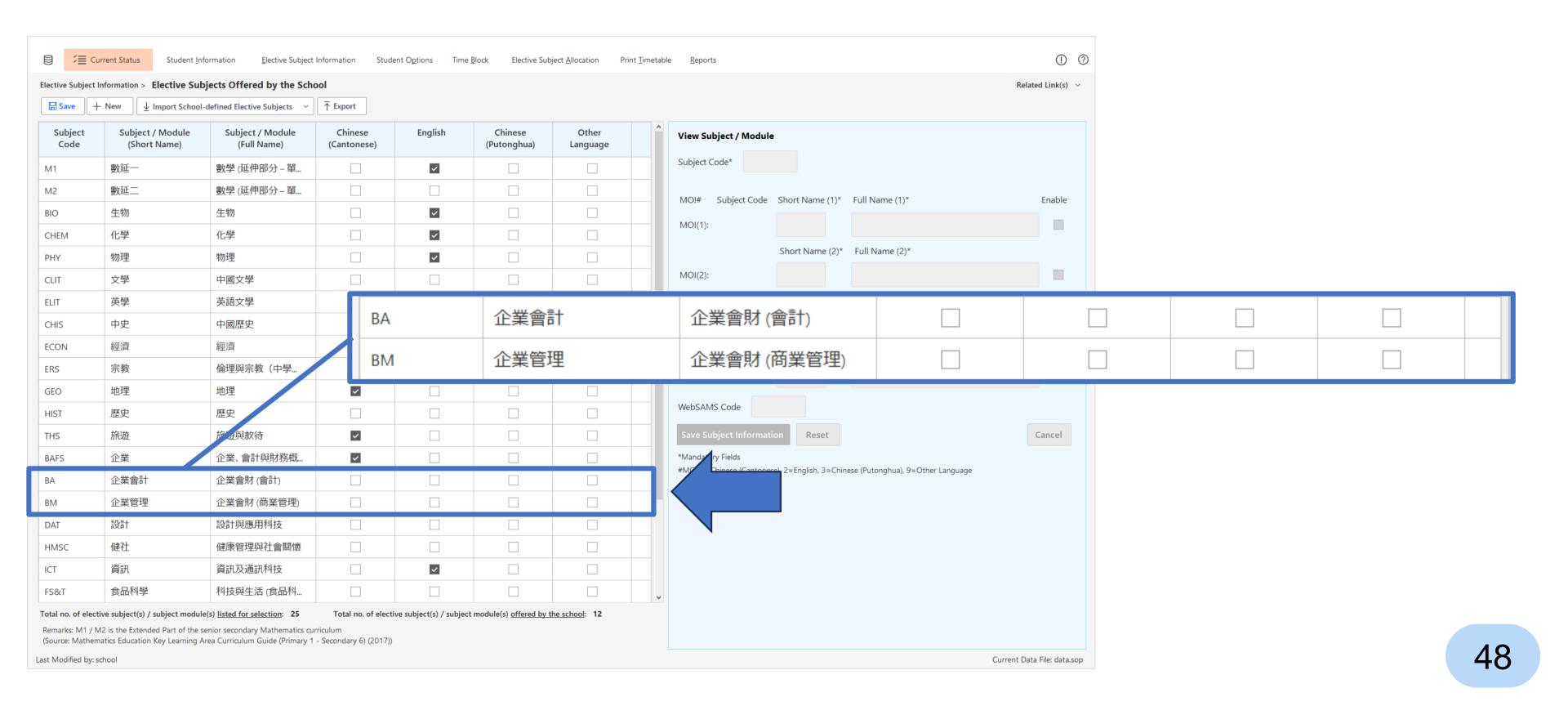
### 1. New UI of printing timetables

The UI of workflow guiding users to go through the steps required for printing timetables



### 2. Allocation of subjects / modules without duplication

No longer need to use different MOIs to represent BAFS (Business) and BAFS (Accounting)



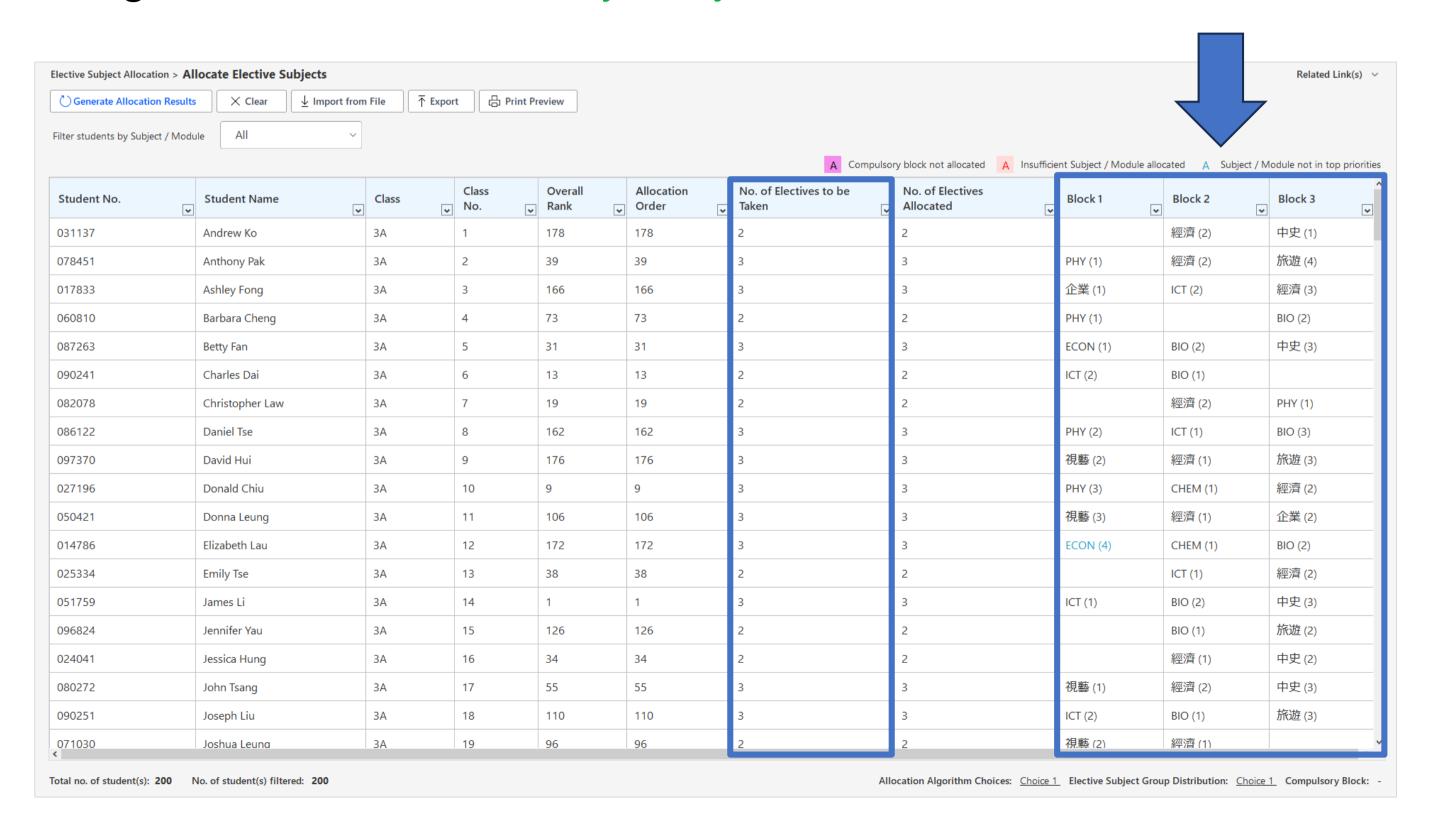
### 3. Setup elective subject groups with different quotas

No longer need to use dummy students

Subject / Module	NOR*	No. of Elective Subject Groups	Group 1 Quota	Group 2 Quota	Group 3 Quota
11	24	1	40		
Ю	63	2	35	30	
CHEM	64	2	35	30	
HY	63	3	40	40	40
史	33	1	35		
涇濟	54	2	40	40	
CON	21	1	40		
也理	36	1	35		
<b>飞遊</b>	35	1	35		
業	64	2	35	30	
T	61	2	35	30	

## 4. Allocate elective subjects to students taking different no. of elective subjects

no longer need to use dummy subjects



### 5. No merged cells in the reports exported in Excel format

### Facilitate easy data manipulation

_ /	В	С	D	E	F	G	Н	1	J	K
1 Report ID		st of Student C			Programme der & Elective	Subject Alloca	ation		Date:04/03/202 Page:1	
Stn No.	Name	Class	Class Number	Rank	Option 01	Option 02	Option 03	Option 04	Option 05	Option 06
S3A01	S3A01	3A	1	40	CHEM	BIO	GEO	ECON	歷史	中史
7 S3A02	S3A02	3A	2	14	PHY	資訊	M2	企業管理	ECON	視藝
<b>3</b> S3A03	S3A03	3A	3	9	PHY	CHEM	資訊	BIO	ECON	M2
9 S3A04	S3A04	3A	4	11	CHEM	PHY	M2	資訊	BIO	ECON
O S3A05	S3A05	3A	5	43	CHEM	BIO	PHY	M2	資訊	旅遊
<b>1</b> S3A06	S3A06	3A	6	33	BIO	CHEM	ECON	M2	企業管理	PHY
<b>2</b> S3A07	S3A07	3A	7	64	BIO	CHEM	資訊	GEO CEO	PHY	ECON
<b>3</b> S3A08	S3A08	3A	8	93	歷史	中史	資訊	ECON	旅遊	企業管理
<b>4</b> S3A09	S3A09	3A	9	35	BIO	CHEM	GEO	ECON	旅遊	PHY
<b>5</b> S3A10	S3A10	3A	10	17	歷史	中史	文學	視藝	旅遊	ECON
6 S3A11	S3A11	3A	11	23	PHY	BIO	CHEM	M2	GEO	企業管理
<b>7</b> S3A12	S3A12	3A	12	16	PHY	BIO	中史	歷史	CHEM	文學
8 S3A13	S3A13	3A	13	57	BIO	視藝	中史	歴史	GEO	ECON
9 S3A14	S3A14	3A	14	58	ECON	M2	企業管理	BIO	PHY	資訊
O S3A15	S3A15	3A	15	45	BIO	CHEM	ECON	GEO	企業管理	文學
1 S3A16	S3A16	3A	16	81	企業管理	ECON	M2	GEO .	BIO	資訊
2 S3A17	S3A17	3A	17	30	PHY	資訊	M2	CHEM	ECON	企業管理
23 S3A18	S3A18	3A	18	36	CHEM	BIO	ECON	歷史	中史	旅遊

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### 6. Data security

Protecting the data file by user-defined password

