



ELECTUDE

**Step-by-step Guide
for New Users**

Teacher/Trainer Manual

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Introduction

What is Electude Learning Management System

The Electude LMS (Learning Management System) is an electronic learning environment. Your organization (college or company) has its own website with its own environment.

You use the LMS to provide specially designed learning content to students and to monitor their progress. This learning content consists of modules you can arrange in courses.

To gain access to the learning content, students need an account for the website. You can manage these accounts yourself. To keep the student administration in order, you can arrange the students in groups. You can determine the structure of the groups yourself. For more information see Students and groups.

You can provide content to a complete group or individually to one student. For more information, see Assigning modules and Assigning courses.

On the webpage of the group or student you can monitor their results and progress. For more information, see Results.

Note: the license of the website determines what kind of learning content is available. Not all functionality that is described in this manual may be available to you. This may be because the license limits the functionality or the administrator has not given you all rights.

Learning content of Electude:

- Power train
- Chassis
- Safety and convenient systems
- Electrical engineering
- Tools
- Basic physics & electronics
- Body

Major concepts in Electude

Modules

Modules are the building blocks of all the content in the LMS. You can arrange the modules in a course or use them separately.

The screenshot displays a lesson module interface. On the left, a 3D simulation of a manual transmission is shown, featuring multiple shafts and gears. On the right, a text-based introduction is provided, detailing the components of a manual transmission. The text includes a bulleted list of shaft types and a note about the auxiliary shaft. A progress indicator shows the current position in the module, and a play button is visible at the bottom of the simulation area.

A standard lesson module showing a simulation animation on the left and short wiki-like text snippets on the right.



A simulation module showing a car's engine management system is being diagnosed.

User types

• Student

- The learner in the Electude system.
- Students can only see the learning content assigned by their teachers.

• Teacher/Trainer

- The central organizer of the learning content.
- Teachers can see all the learning content in the system and are responsible for assigning the learning content to students.
- Teachers may also have the rights to manage students and create self-made content.

• Administrator

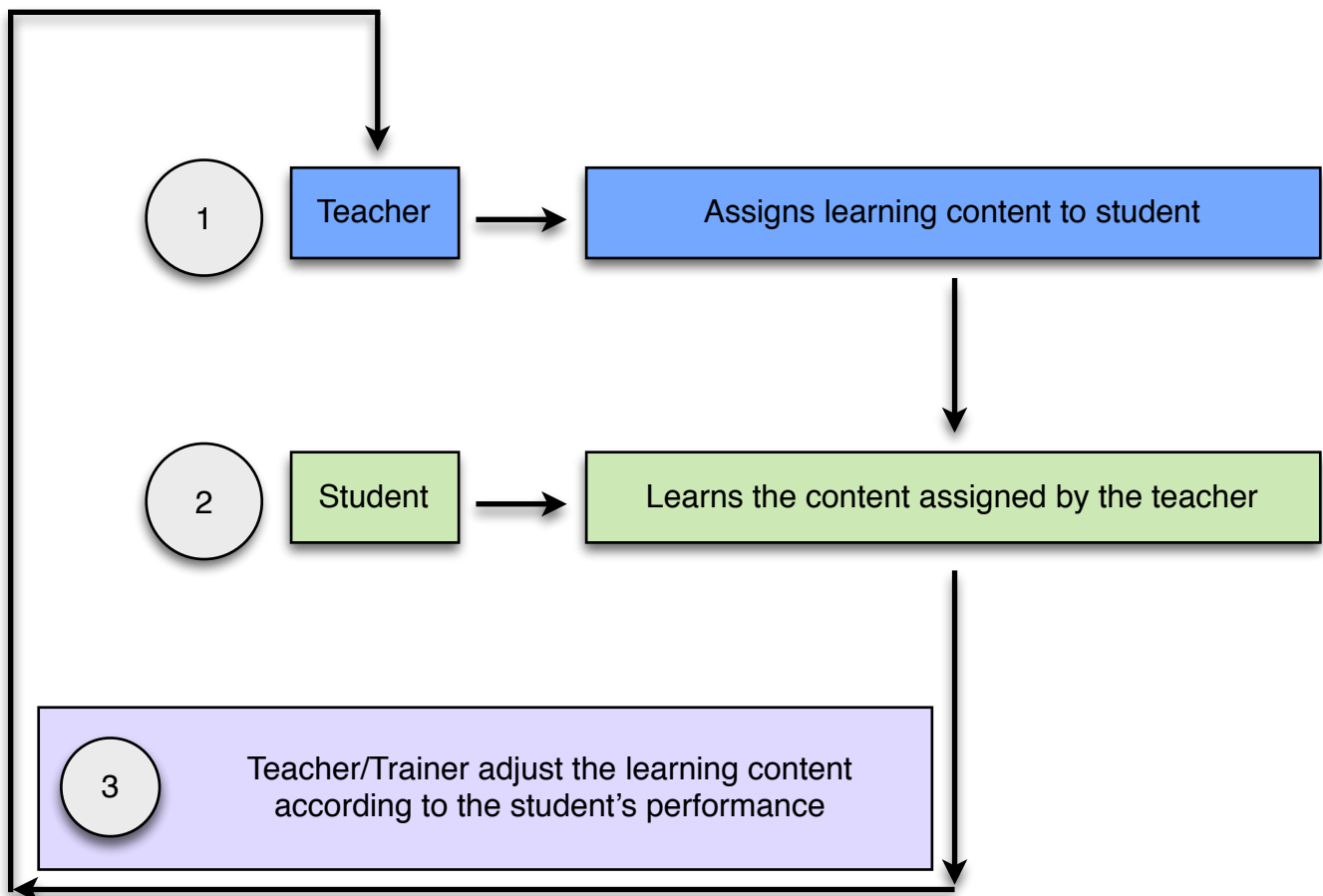
- The site administrator is responsible for managing your Electude site's general settings such as language, time zone, content mapping, site look.
- The site administrator is also responsible for site member management (add/delete student and teacher accounts).

The Learning Process in Electude

In Electude, the learning process starts with a teacher/trainer assigning learning content to students.

The students then log in to their account and learn the content assigned by the teacher(s)/trainer(s). Their performance (learning time, achievement of learning objectives, percentage of correctness, etc.) will be automatically tracked by the system.

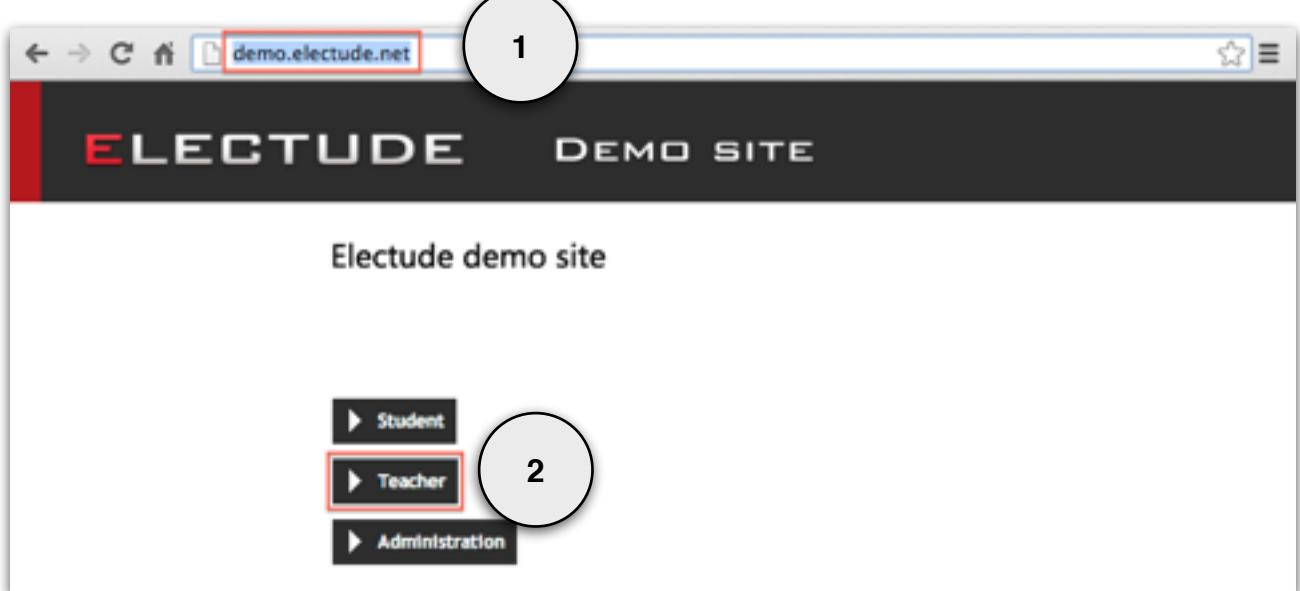
Teachers/Trainers can then adjust the learning content according to the students' performance. This closed-loop process makes learning much more effective.



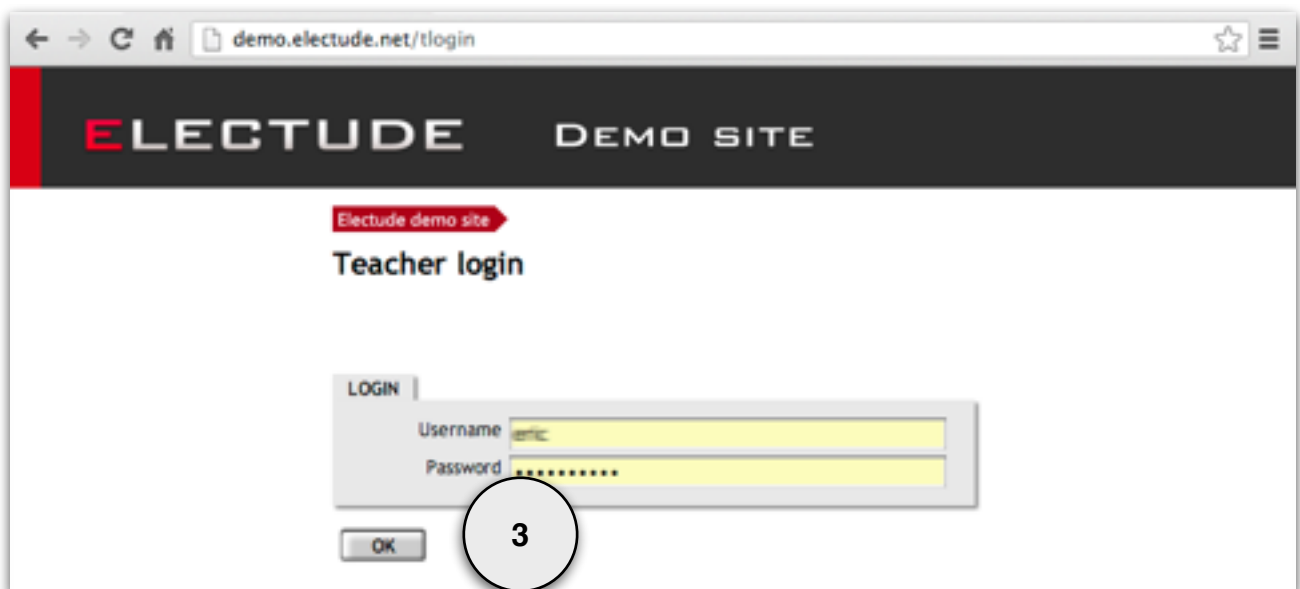
Start using Electude

Step 1 - Login

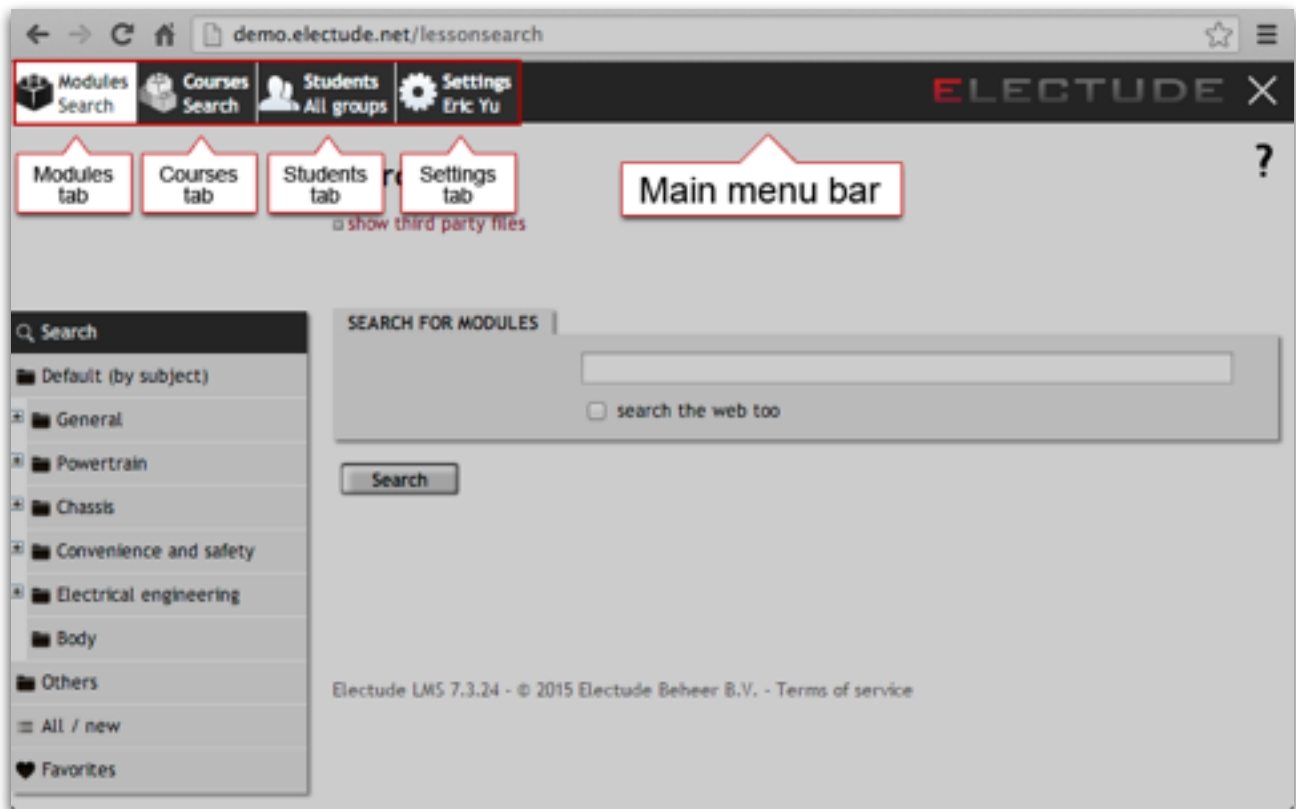
1. Open your Electude learning site in a web browser.
2. Once your site is loaded, click on the "Teacher/Trainer" button.



3. Enter your username and password then click "OK" to login.



Basic user interface



Once you are logged in, you will see the user interface of the teacher/trainer account. On the top of the screen is the “Main menu bar”, which consists of 4 tabs:

Modules tab

- Here you can find all the modules that came with Electude and all the self-made modules.

Courses tab

- Here you can find all the predefined courses that come with Electude and all the self-made courses.

Students tab

- Here you can find all the students and student groups that are visible to you (site administrator can control which groups of students you can see).
- You conduct student management in this tab.

Settings tab

- you can find all the settings for your account.

Step 2 - Update your account information

After you have logged in to your account, we suggest that you update your account information.

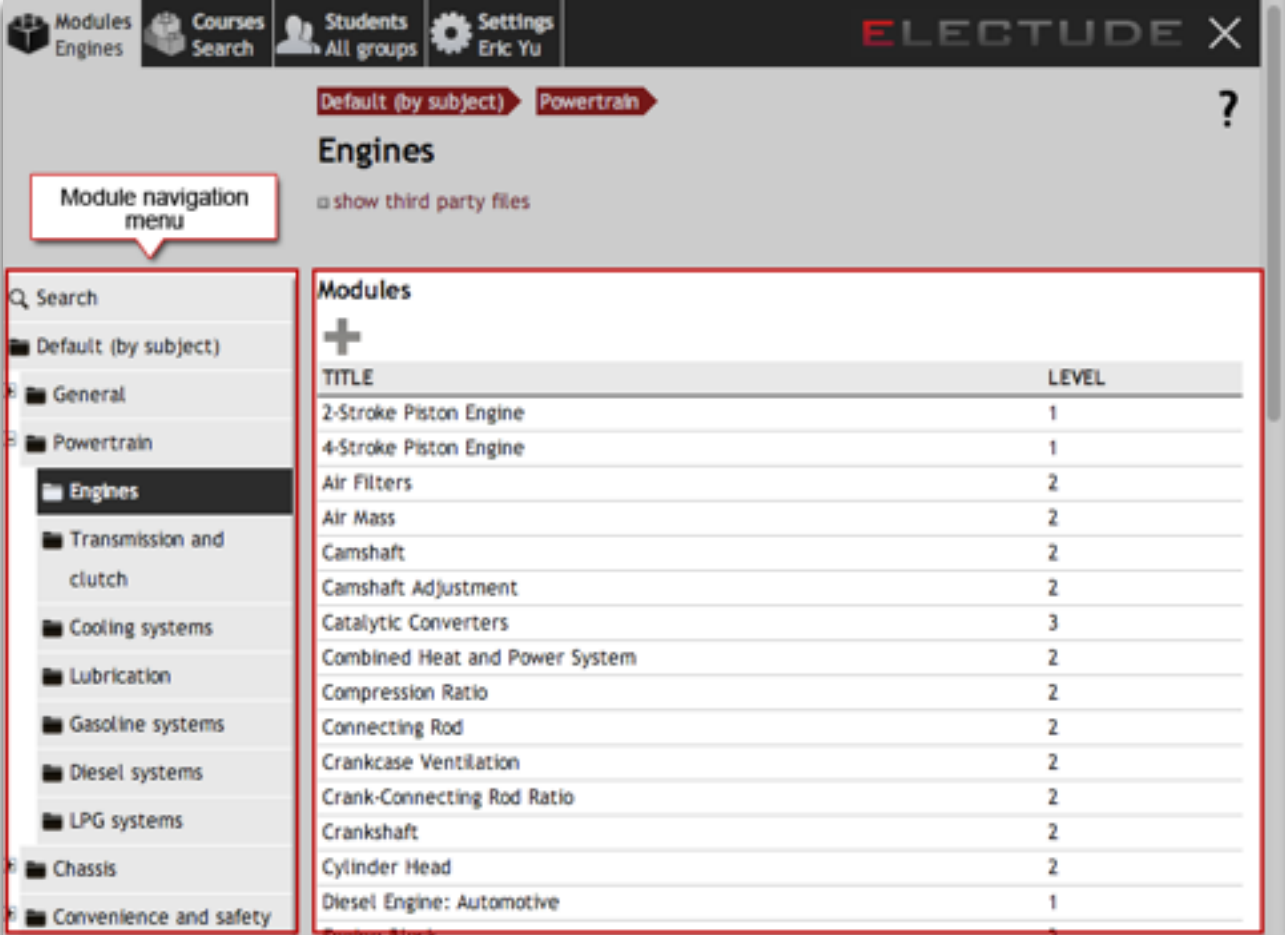
1. Open the “Settings” tab.
2. This displays your user “Account” entry in the submenu.
3. Update your account information and click “OK” to save any changes.

The screenshot shows the Electude user interface. At the top, there is a navigation bar with icons for Modules Search, Courses Search, Students All groups, and Settings: Eric Yu (1). The Settings: Eric Yu tab is highlighted. Below the navigation bar, the page title is 'Account' (2). The left sidebar has 'Account' selected. The main content area is titled 'Account' and contains an 'EDIT DETAILS' form. The form has the following fields: * First name (Eric), * Last name (Yu), * Email address (eric.yu@electude.com), Phone, Mobile phone, Address, Zip code, City, Date of birth, Place of birth, Receive feedback (Yes), Language (English (American)), and * Time zone (Asia/Shanghai). There are 'OK' and 'cancel' buttons below the form. Below the form is an 'EDIT PASSWORD' section with fields for * New password and * Repeat password, also with 'OK' and 'cancel' buttons. A red box highlights the 'EDIT DETAILS' form area (3).

Step 3 - Learning content navigation (finding modules and courses)

Finding a module

Using the navigation menu on the left side of the screen, you can locate the module you are interested in. The navigation menu is a tree menu. You select a parent entry on the menu and its child entries or modules will be listed on the right side of the screen.



The screenshot shows the Electude interface with a navigation menu on the left and a list of modules on the right. The navigation menu is a tree structure with the following items:

- Search
- Default (by subject)
- General
- Powertrain
 - Engines**
 - Transmission and clutch
 - Cooling systems
 - Lubrication
 - Gasoline systems
 - Diesel systems
 - LPG systems
- Chassis
- Convenience and safety

The main content area shows the 'Engines' section under the 'Powertrain' subject. A table of modules is displayed:

TITLE	LEVEL
2-Stroke Piston Engine	1
4-Stroke Piston Engine	1
Air Filters	2
Air Mass	2
Camshaft	2
Camshaft Adjustment	2
Catalytic Converters	3
Combined Heat and Power System	2
Compression Ratio	2
Connecting Rod	2
Crankcase Ventilation	2
Crank-Connecting Rod Ratio	2
Crankshaft	2
Cylinder Head	2
Diesel Engine: Automotive	1

If you don't want to go through the whole menu to find your module you can use the built in search function, just click on the "Search" item then enter the keywords and click on the Search button.

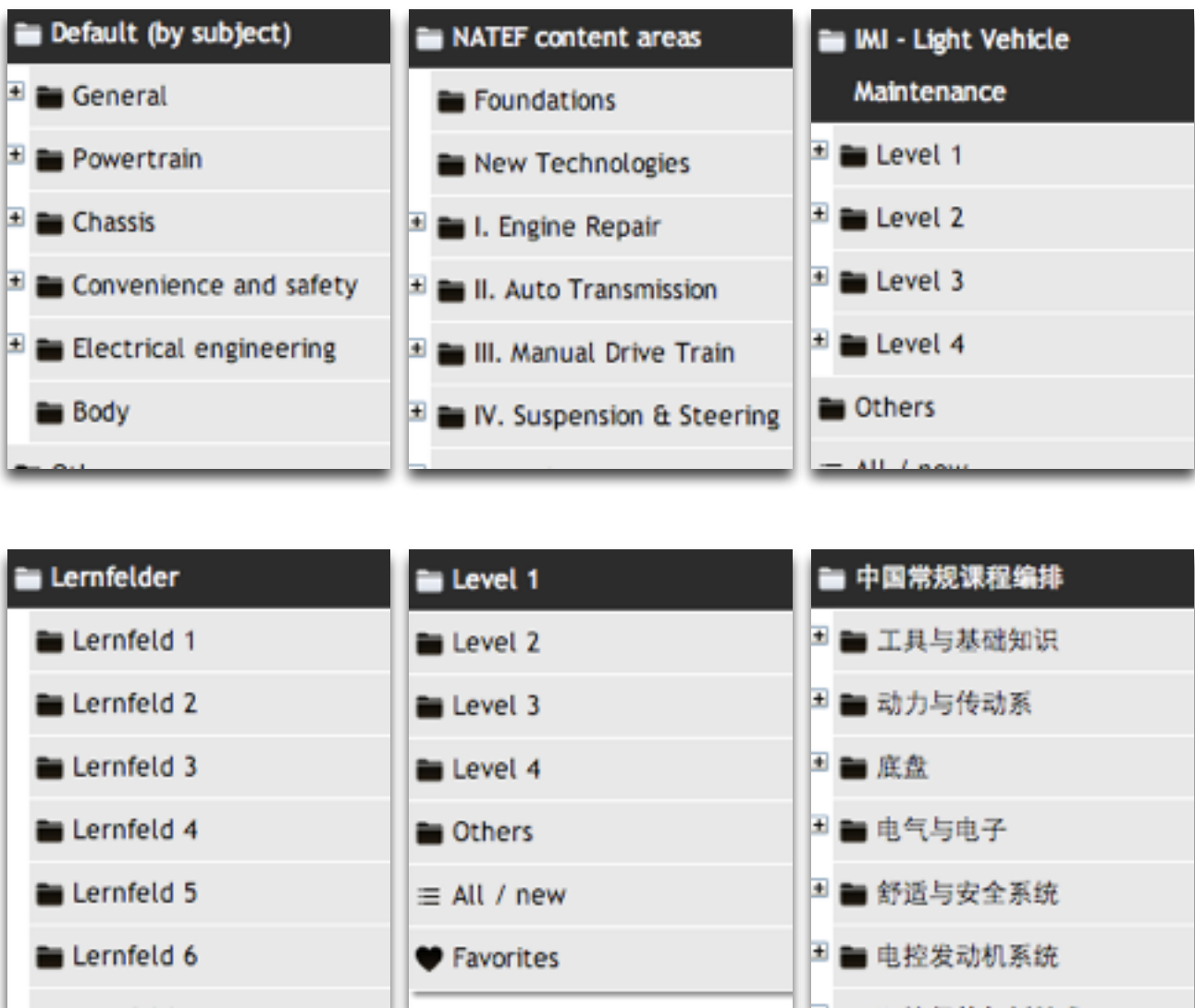
The screenshot shows the Electude search interface. At the top, there are navigation tabs: Modules Search, Courses Predefined, Students Class 1a, and Settings Eric Yu. The main heading is "Search" with a help icon. Below the heading is a link "show third party files". On the left is a sidebar menu with categories like General, Powertrain, Chassis, etc. The search area has a text input field containing "Piston" and a "Search" button. Below the search area, it says "20 items found" and displays a table of results.

TITLE	LEVEL
2-Stroke Piston Engine	1
4-Stroke Piston Engine	1
Brake Lines and Hoses	2
Commercial Vehicle Power Train	2
Compression Ratio	2
Connecting Rod	2
Crankshaft	2

Modules in Electude can be mapped (organized) by different industrial standards. They are:

- By subject (the default mapping)
- NATEF content areas
- Lernfelder
- China standard
- IMI - Light Vehicle Maintenance
- By level (Level 1 - Level 4)

If you want to change the content mapping of your Electude site, you need to contact your site administrator.



Once you are on the Modules page, you can see the Module information and Objectives for the module.

Click on the “Start module” button, to start a module.

As a teacher you can browse through the module without having to answer every question.

The screenshot shows the Electude interface for the '4-Stroke Piston Engine' module. The top navigation bar includes 'Modules', 'Courses', 'Students', and 'Settings'. The breadcrumb trail is 'Default (by subject) > Powertrain > Engines'. The main title is '4-Stroke Piston Engine' with a 'show third party files' link. A search bar is on the left. The 'Start module' button is highlighted with a red box. Below it is the 'MODULE INFORMATION' section with the following details:

Level	1
Type	principle
Duration	00:16:00
Date	10/16/09
Product group	lesson

Below the module information is the 'Objectives' section, which contains a table with the following data:

PROCESS	KEYWORD	WEIGHT
learning	4-stroke engine components	12%
understanding	4-stroke process	88%

At the bottom, the 'Other keywords' section lists '4-stroke, 4-stroke, 4-stroke'. A question is visible at the top right: 'Which combustion principle is used in many gasoline and diesel engines?' with an image of an engine.

Finding Courses

In the Courses tab, you can find the predefined and self-made courses. You can navigate through the courses the same way as with modules.

The screenshot shows the Electude interface with the 'Courses' tab selected. The top navigation bar includes 'Modules', 'Courses', 'Students', and 'Settings'. The 'Courses' section is titled 'Electude courses' and features a 'Predefined' filter. A 'Course navigation menu' is visible on the left, with options for 'Search', 'Self-made', 'Predefined', and 'Favorites'. The 'Predefined' option is currently selected. Below the menu is a table of predefined courses.

TITLE	LEVEL	MODULES	DURATION	PUBLICATION
Basics		268	121:34	06/25/13
Advanced		251	118:10	06/25/13
Specialist		22	11:16	06/25/13

Step 4 - Student Navigation

Now that you know how to navigate through the content, let's see how to find the target student or student group to assign content to.

One, open the "Students" tab (Item 2). On the left side of the screen are the submenus in navigation panel.

Two, students are organized in groups. A group may contain subgroups (Item 2). You can assign content to a group or to an individual student. If you assign content to a group, then all the students in the group will be able to see the content. If you assign content to only one student then only he/she will be able to see the content.

You can use the navigation panel or the search function to locate the target group or student.

The screenshot shows the ELECTUDE interface with the 'Students' tab selected in the top navigation bar (Item 1). The left sidebar navigation panel has 'Class 1a' highlighted (Item 2). The main content area displays the following data:

FIRST NAME	LAST NAME	TIME SPENT	PROGRESS
Andrew	Johnson	03:00:41	<div style="width: 75%;"></div>
Emma	Williams	01:30:48	<div style="width: 25%;"></div>
Ryan	Garcia	01:02:01	<div style="width: 50%;"></div>
Tom	Clark	05:30:55	<div style="width: 75%;"></div>

TITLE	TIME SPENT	PROGRESS
Basic electronics	02:04:52	<div style="width: 75%;"></div>
Self made course 1	00:02:50	<div style="width: 10%;"></div>

TITLE	TIME SPENT	PROGRESS
Alternator: Rotor	00:00:50	<div style="width: 75%;"></div>
Duty Cycle	00:08:08	<div style="width: 50%;"></div>
EDT 3: Injector 1 - open circuit	00:02:00	<div style="width: 25%;"></div>

Step 5 - Assigning content

Assigning modules

You can assign a module in three ways:

- A. (1) Navigate to the desired module via the tab "Modules". (2) The title of the module appears in the tab. Navigate to the desired course, group or student. Click the plus icon "+"; to add a new module under the heading "Modules" on the right side of the screen. (3) The first item, of the list that appears, is the desired module. (4) Click 'add' to add the module to the assigned content.

1. Open "Modules" tab

2. Locate the module you want to assign

Search

- NATEF content areas
 - Foundations
 - New Technologies
 - I. Engine Repair
 - A. General**
 - B. Cylinder Head & Valve Train
 - C. Engine Block Assembly
 - D. Lubrication & Cooling
 - Tests
 - MLR

Start module

MODULE INFORMATION

- Level 2
- Type principle
- Duration 00:25:00
- Date 03/10/10
- Product group lesson

3. Open "Courses" / "Students" tab

4. Click to choose module

FIRST NAME	LAST NAME	TIME SPENT	PROGRESS
Andrew	Johnson	02:09:55	<div style="width: 100%;"></div>
Emma	Williams	01:29:43	<div style="width: 100%;"></div>
Ryan	Garcia	00:58:00	<div style="width: 100%;"></div>
Tom	Clark	04:04:47	<div style="width: 100%;"></div>

Group content

Courses

TITLE	TIME SPENT	PROGRESS
Basic electronics	02:03:26	<div style="width: 100%;"></div>

Modules

TITLE	TIME SPENT	PROGRESS
Starter Motor: Shift Lever	00:05:10	<div style="width: 100%;"></div>
EDT 3: Injector 1 - open circuit	00:02:00	<div style="width: 100%;"></div>

The screenshot shows the Electude interface with a navigation menu on the left and a main content area. The main content area displays a table of students and their progress, followed by a 'Group content' section with a table of courses. Below the courses table, there is a 'Modules' section with an 'ADD MODULE' button and a dropdown menu. The dropdown menu is open, showing 'Module' and 'Compression Ratio' selected. A red box highlights the 'add' button, and a red arrow points to it with the text '6. Click to assign module'. Another red arrow points to the 'Compression Ratio' option in the dropdown menu with the text '5. Select module form the drop down list'.

FIRST NAME	LAST NAME	TIME SPENT	PROGRESS
Andrew	Johnson	02:09:55	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Emma	Williams	01:29:43	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Ryan	Garcia	00:58:00	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Tom	Clark	04:04:47	<div style="width: 100%;"><div style="width: 100%;"></div></div>

TITLE	TIME SPENT	PROGRESS
Basic electronics	02:03:26	<div style="width: 100%;"><div style="width: 100%;"></div></div>

- B. If you want to reuse the module more often, you can add it to your personal favorites (see Managing favorites). When you click the plus icon "+", 'Add to favorites' balloon appears. Click on the next screen to add the modules to your Favorites List.

The screenshot shows the Electude interface with a navigation menu on the left and a main content area. The main content area displays the 'Cylinder Head' module page. A red box highlights a heart icon with a plus sign, and a red arrow points to it with the text 'Click to add to favorites'. Below the heart icon, there is a 'Start module' button and a 'MODULE INFORMATION' section. The 'MODULE INFORMATION' section contains the following details:

Level	2
Type	object
Duration	00:39:00
Date	10/28/09
Product group	lesson

- C. If you want to add many different modules quickly, you can navigate to the course, group or student first. (1) The name of the course, group or student will appear in the tab. (2) Open the Modules tab. (3) Drag the desired modules from the list to the tab of the course, group or student.

Students

1. Choose the course / group / student to assign to

FIRST NAME	LAST NAME	TIME SPENT	PROGRESS
Andrew	Johnson	02:09:55	<div style="width: 100%;"></div>
Emma	Williams	01:29:43	<div style="width: 100%;"></div>
Ryan	Garcia	00:58:00	<div style="width: 100%;"></div>
Tom	Clark	04:04:47	<div style="width: 100%;"></div>

Group content

Courses

Before assignment

TITLE	TIME SPENT	PROGRESS
Basic electronics		<div style="width: 100%;"></div>

Modules

TITLE	TIME SPENT	PROGRESS
Starter Motor: Shift Lever	00:09:10	<div style="width: 100%;"></div>
EDT 3: Injector 1 - open circuit	00:02:00	<div style="width: 100%;"></div>

Modules

2. Open "Modules" tab

3. Drag the module onto "Courses" / "Students" tab and drop

Which components make up an engine block?

TITLE	LEVEL
Compression Ratio	2
Cylinder Head	2
Diesel Engine: Automotive	1
Engine Block Types	1
Engine Mechanical Components	1
Flywheel	2
Gasoline Engine: Otto Cycle	1
Piston Engines	1
Piston Velocity	2
Power Diagram	1
Stroke Volume	2
Wankel Engine	1

FIRST NAME	LAST NAME	TIME SPENT	PROGRESS
Andrew	Johnson	02:09:55	<div style="width: 100%;"></div>
Emma	Williams	01:29:43	<div style="width: 100%;"></div>
Ryan	Garcia	00:58:00	<div style="width: 100%;"></div>
Tom	Clark	04:04:47	<div style="width: 100%;"></div>

TITLE	TIME SPENT	PROGRESS
Basic electronics		<div style="width: 100%;"></div>

TITLE	TIME SPENT	PROGRESS
Starter Motor: Shift Lever	00:05:10	<div style="width: 100%;"></div>
EDT 3: Injector 1 - open circuit	00:02:00	<div style="width: 100%;"></div>
Engine Mechanical Components		<div style="width: 100%;"></div>

The order of the modules in the list assigned to a course, group or student, can be changed by dragging a module up or down. Press the left mouse button, drag the module name and release the mouse button above the new position.

To delete a module from the assigned content list, click on the module, then click on the delete icon "✕"; 'Delete module'.

All groups > 1st year > Class 1a

Group results Engine Mechanical Components

✕ Click to delete an assigned module

PROCESS	KEYWORD	PROGRESS
learning	camshaft function	<div style="width: 100%;"></div>
learning	connecting rod function	<div style="width: 100%;"></div>
learning	coolant pump function	<div style="width: 100%;"></div>
learning	crankshaft function	<div style="width: 100%;"></div>
learning	cylinder head function	<div style="width: 100%;"></div>
learning	engine block function	<div style="width: 100%;"></div>
learning	engine components	<div style="width: 100%;"></div>
learning	flywheel function	<div style="width: 100%;"></div>
learning	oil pan function	<div style="width: 100%;"></div>
learning	oil pump function	<div style="width: 100%;"></div>

Assigning courses to student or student group

You can assign a course in three ways:

- A. (1) Open the 'Courses' tab. Navigate to the course via the tab 'Courses'. Choose a Course from the predefined list on the left.
- (2) The title of the course appears in the tab.
- (3) Navigate to the desired group or student.
- (4) Click the plus icon "+" (Add course).
- (5) The top item of the list that appears is the desired course.
- (6) Click 'add' to add the Course to the assigned content.

The screenshot shows the Electude interface with the 'Courses' tab selected. The 'Basic electronics' course is highlighted in the predefined list. Red arrows indicate the steps: '1. Open "Courses" tab' and '2. Locate the course you want to assign'.

TITLE	LEVEL	MODULES	DURATION	PUBLICATION
Ohm's Law	2		00:26:00	
Voltmeter	2		00:15:00	
Ohmmeter	2		00:19:00	
Ammeter	2		00:10:00	
Multimeter Auto Range	2		00:03:00	
Current Clamp	2		00:18:00	
Series Circuits	2		00:48:00	

3. Open "Students" tab, choose a group of student

FIRST NAME	LAST NAME	TIME SPENT	PROGRESS
Andrew	Johnson	02:09:55	<div style="width: 100%;"></div>
Emma	Williams	01:29:43	<div style="width: 100%;"></div>
Ryan	Garcia	00:58:00	<div style="width: 100%;"></div>
Tom	Clark	04:04:47	<div style="width: 100%;"></div>

4. Click to select course

TITLE	TIME SPENT	PROGRESS
Starter Motor: Shift Lever	00:05:10	<div style="width: 100%;"></div>
EDT 3: Injector 1 - open circuit	00:02:00	<div style="width: 100%;"></div>
Engine Mechanical Components		<div style="width: 100%;"></div>

6. Click to assign course

5. Select course from the drop down list

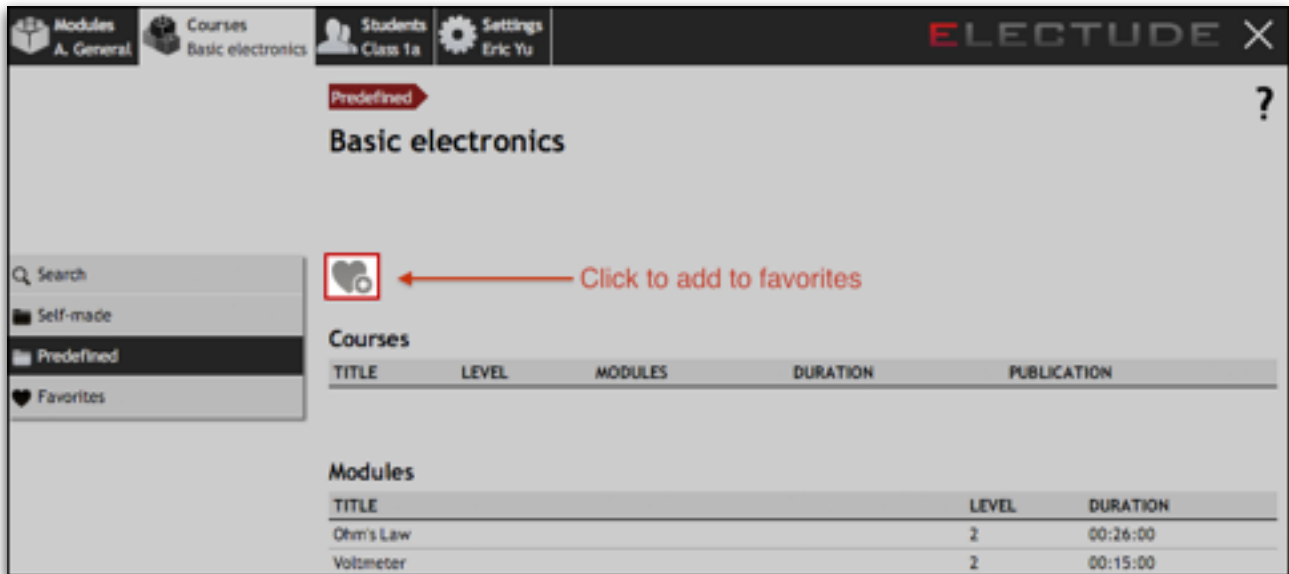
FIRST NAME	LAST NAME	TIME SPENT	PROGRESS
Andrew	Johnson	02:09:55	<div style="width: 100%;"></div>
Emma	Williams	01:29:43	<div style="width: 100%;"></div>
Ryan	Garcia	00:58:00	<div style="width: 100%;"></div>
Tom	Clark	04:04:47	<div style="width: 100%;"></div>

add cancel

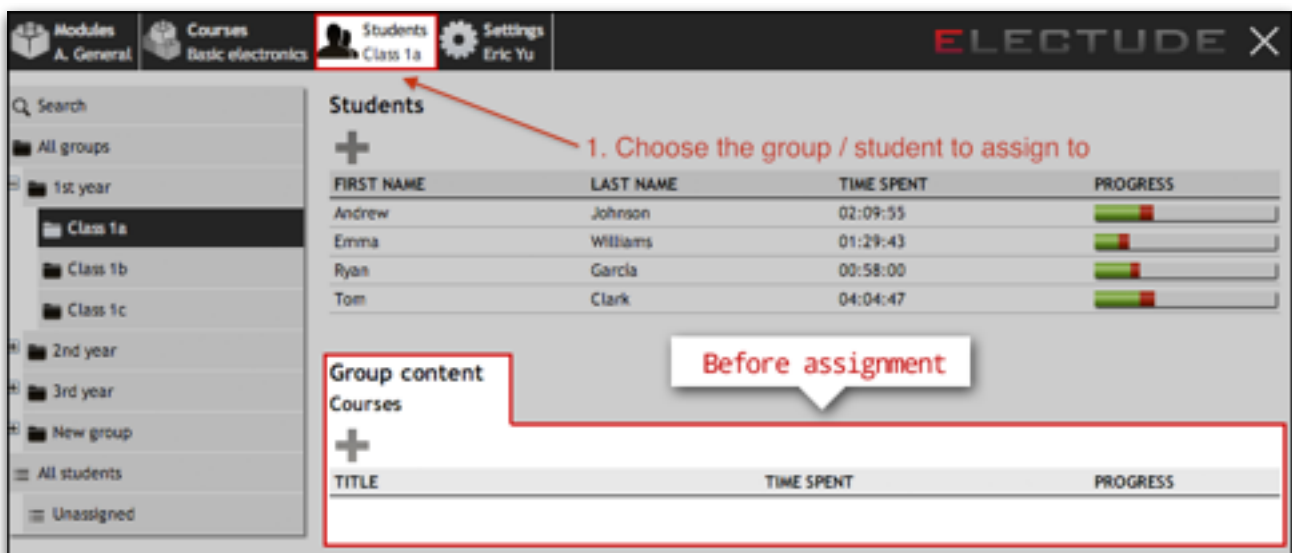
- Basic electronics
- Brakes advanced
- Electronic Diesel Control basics

- B. If you want to reuse the course often, you can add it to your personal favorites (see Managing favorites). When you click the plus icon “+” (Add favorite).

Then click on the Students tab for a group or student. Click on the plus icon “+” and a dropdown list of your favorite courses appears, sorted alphabetically. Select the desired course and click ‘add’.



- C. (1) If you want to add many different courses quickly, navigate to the group or student.
 (2) The name of the group or student will appear in the tab. Navigate to the tab 'Courses' and drag the desired courses from the list to the tab of the group or student.



2. Open "Students" tab

3. Drag the course you want to assign onto the "Students" tab and drop

TITLE	LEVEL	MODULES	DURATION	PUBLICATION
Air conditioning	2	15	02:12	01/12/10
Aligning advanced	3	14	05:35	08/12/11
Aligning basics	2	8	02:57	08/12/11
Basic electronics	2	15	06:41	05/12/09
Brakes advanced	3	22	09:17	08/12/11
Brakes basics	2	21	08:52	08/12/11
CAN bus advanced	4	7	03:07	05/12/09
CAN bus basics	2	5	02:22	05/12/09
Common Rail Diesel advanced	3	9	04:09	12/06/11
Common Rail Diesel basics	2	4	01:32	01/12/10
Cooling	1	12	04:21	05/12/09
Cooling	2	15	05:13	05/12/09

After assignment

FIRST NAME	LAST NAME	TIME SPENT	PROGRESS
Andrew	Johnson	02:09:55	<div style="width: 100%;"></div>
Emma	Williams	01:29:43	<div style="width: 100%;"></div>
Ryan	Garcla	00:58:00	<div style="width: 100%;"></div>
Tom	Clark	04:04:47	<div style="width: 100%;"></div>

TITLE	TIME SPENT	PROGRESS
Basic electronics		

The order of the courses in the list of assigned content for a group or student can be changed, by dragging a course up or down. Press the left mouse button, drag the course and release the mouse button above the new position.

To delete a course from the list, click on the Course. Then click on the delete icon “✖” (Delete course).

The screenshot shows the Electude interface for 'Group content Basic electronics'. The top navigation bar includes 'Modules A. General', 'Courses Predefined', 'Students Group content Basic electronics', and 'Settings Eric Yu'. The main content area has a breadcrumb trail: 'All groups > 1st year > Class 1a'. Below this is the title 'Group content Basic electronics' and a search icon. A sidebar on the left contains a search bar and a list of groups: 'All groups', '1st year', 'Class 1a' (selected), 'Class 1b', 'Class 1c', '2nd year', '3rd year', 'New group', 'All students', and 'Unassigned'. The main content area features a table titled 'Average results Modules' with columns for 'TITLE', 'COMPLETED BY', 'TIME SPENT', and 'PROGRESS'. A red box highlights a delete icon (✖) next to the table, with an arrow pointing to it and the text 'Click to delete course'.

TITLE	COMPLETED BY	TIME SPENT	PROGRESS
Ohm's Law	4	00:19:21	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Voltmeter	3	00:06:25	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Ohmmeter	2	00:08:58	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Ammeter	2	00:05:12	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Multimeter Auto Range	3	00:05:15	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Current Clamp	2	00:09:24	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Series Circuits	1	00:13:18	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Parallel Circuits	0	00:02:14	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Kirchhoff's First Law	0	00:02:16	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Power Law	0	00:06:53	<div style="width: 100%;"><div style="width: 100%;"></div></div>
DC and AC Voltage	0	00:11:21	<div style="width: 100%;"><div style="width: 100%;"></div></div>

Step 6 - View student performance

After step 5 students should be able to see the content you have assigned to them and start working on them. At the same time you can view the performance statistics of your students.

Results

The results of modules and courses can be viewed in many ways. There are overviews for every group and every student, for a collection of courses, for one course only or for one module only. You can print or export these views, e.g. to process them in a spreadsheet program like Excel or OpenOffice. For more information, see Exporting results.

When you zoom in on the individual results of one module, the path you take is shown below the main menu. By clicking an item from this path you can quickly retrace your steps.





Students			
+			
FIRST NAME	LAST NAME	TIME SPENT	PROGRESS
Andrew	Johnson	02:09:55	<div style="width: 100%;"><div style="width: 80%;"></div></div>
Emma	Williams	01:29:43	<div style="width: 100%;"><div style="width: 70%;"></div></div>
Ryan	Garcia	00:58:00	<div style="width: 100%;"><div style="width: 90%;"></div></div>
Tom	Clark	04:04:47	<div style="width: 100%;"><div style="width: 60%;"></div></div>

Group content		
Courses		
+		
TITLE	TIME SPENT	PROGRESS
Basic electronics	02:03:26	<div style="width: 100%;"><div style="width: 85%;"></div></div>

Modules		
+		
TITLE	TIME SPENT	PROGRESS
Starter Motor: Shift Lever	00:05:10	<div style="width: 100%;"><div style="width: 95%;"></div></div>
EDT 3: Injector 1 - open circuit	00:02:00	<div style="width: 100%;"><div style="width: 60%;"></div></div>
Engine Mechanical Components		<div style="width: 100%;"><div style="width: 0%;"></div></div>
Flywheel		<div style="width: 100%;"><div style="width: 0%;"></div></div>
Gasoline Engine: Otto Cycle		<div style="width: 100%;"><div style="width: 0%;"></div></div>
Piston Engines		<div style="width: 100%;"><div style="width: 0%;"></div></div>

The progress bar

All progress is shown in a bar chart. This chart consists of a green, a red, a white and sometimes a grey area. These colors represent parts of the learning content and have the following significance:

-  green: finished correctly
-  red: finished incorrectly
-  grey: finished, but with unknown result
-  white: not finished yet

For example:



The chart shows that 75% of the course, module or objective (depending on the context) has been completed: the remaining 25% is still white. The size of the green area in relation to the red area shows the ratio of correct answers to incorrect answers. The weight of the answers is used to calculate this ratio. In this case the ratio is 2:1.

The relative progress and the percentage of correct answers are shown numerically when you move the cursor over the diagram.

For some modules (e.g. files or links) it is only clear that the student has viewed the module; the result remains unknown. This is represented by a grey area. If, for example, one half of a group has opened a file, the 'group result' of this file will look like this:



You can change the result for this type of modules manually, see Individual results of a module.

Sometimes the contents of a lesson changes slightly. E.g. a question is added, an objective is altered or the weight of a question changes. This can result in a grey bar appearing in the progress diagram. This can occur, for example, when a student has viewed the previous form of a module and a new question has been added at the start of the module. The student has not answered this question, but is already 'past' the new question. The score for this question is therefore uncertain and is shown as a grey bar. This will appear as follows:



A grey area may also appear during practical work, if there are exercises that cannot be evaluated automatically. The report of the results of practical work may show extra information that you can evaluate yourself. For more information see Lesson, practical work or test results.

Calculating the score of a lesson

The administrator of the site can select to use all answers or just the first answer to calculate the score. By default all attempts are used in the calculation.

Suppose the weight of the first question in a module makes up 10% of the total weight of the module. If the student answers this question incorrectly, the progress bar will look like this:



The colored part is completely red because all questions were answered incorrectly. When the student answers the question again and now provides the correct answer, the chart will not change as only the first attempt is scored. If all attempts count, the progress changes to this diagram:



The white part has remained the same size (the student has not progressed in the module), while the red part has become smaller as only 50% of the answers is now incorrect.

Group results

The page of a group shows the results for all group content (the courses and modules that are assigned to the group).

In the table of students the last two columns show how long each student has spent on the group content and what their progress is. By moving the cursor over the progress graph, a detailed list with the results of every assigned course or module is shown. This list can easily be compared to the group average.

The average result of all students in the group can be seen below the table of students. By clicking a row in this table, you can zoom in on the group results of a course or the group results of a module.

Group results of a course

The first table on this page shows the average results of all students in the group for each module the course contains. When you click on a row in this table, you zoom in on the Group results of a module.

The screenshot shows the 'Group content Basic electronics' page. A callout box labeled 'Group results of a course' points to the 'Average results' table. The table lists modules with their completion counts, time spent, and progress bars.

TITLE	COMPLETED BY	TIME SPENT	PROGRESS
Ohm's Law	4	00:19:21	<div style="width: 100%;"></div>
Voltmeter	3	00:06:25	<div style="width: 100%;"></div>
Ohmmeter	2	00:08:58	<div style="width: 100%;"></div>
Ammeter	2	00:05:12	<div style="width: 100%;"></div>
Multimeter Auto Range	3	00:05:15	<div style="width: 100%;"></div>
Current Clamp	2	00:09:24	<div style="width: 100%;"></div>
Series Circuits	1	00:13:18	<div style="width: 100%;"></div>
Parallel Circuits	0	00:02:14	<div style="width: 0%;"></div>
Kirchhoff's First Law	0	00:02:16	<div style="width: 0%;"></div>
Power Law	0	00:06:53	<div style="width: 0%;"></div>
DC and AC Voltage	0	00:11:21	<div style="width: 0%;"></div>
Ground-Switched and Positive-Switched	1	00:07:40	<div style="width: 100%;"></div>
Relay	1	00:09:04	<div style="width: 100%;"></div>
Duty Cycle	0	00:08:08	<div style="width: 0%;"></div>
Fault Finding	0	00:07:59	<div style="width: 0%;"></div>

The second table on this page shows the results of every student, over all the modules in the course. When you click on a row in this table, you zoom in on the Individual results of a course.

The screenshot shows the 'Students' table for the 'Basic electronics' course. The table lists individual students with their first and last names, the number of finished modules, time spent, and progress bars.

FIRST NAME	LAST NAME	FINISHED MODULES	TIME SPENT	PROGRESS
Andrew	Johnson	5	01:59:22	<div style="width: 100%;"></div>
Emma	Williams	6	01:19:37	<div style="width: 100%;"></div>
Ryan	García	4	00:50:00	<div style="width: 100%;"></div>
Tom	Clark	4	04:04:47	<div style="width: 100%;"></div>

At the bottom of this page there may also be a table with modules that need 'to be graded'. It appears when the course is associated with a qualification and there are students that have finished modules with performance indicators that have not yet been graded. Through this table you can add grades. For more information see adding a performance indicator.

Group results of a module




If the module contains objectives, this page shows the average results for each objective in the first table. The width of every progress bar is determined by the weight of the objective.

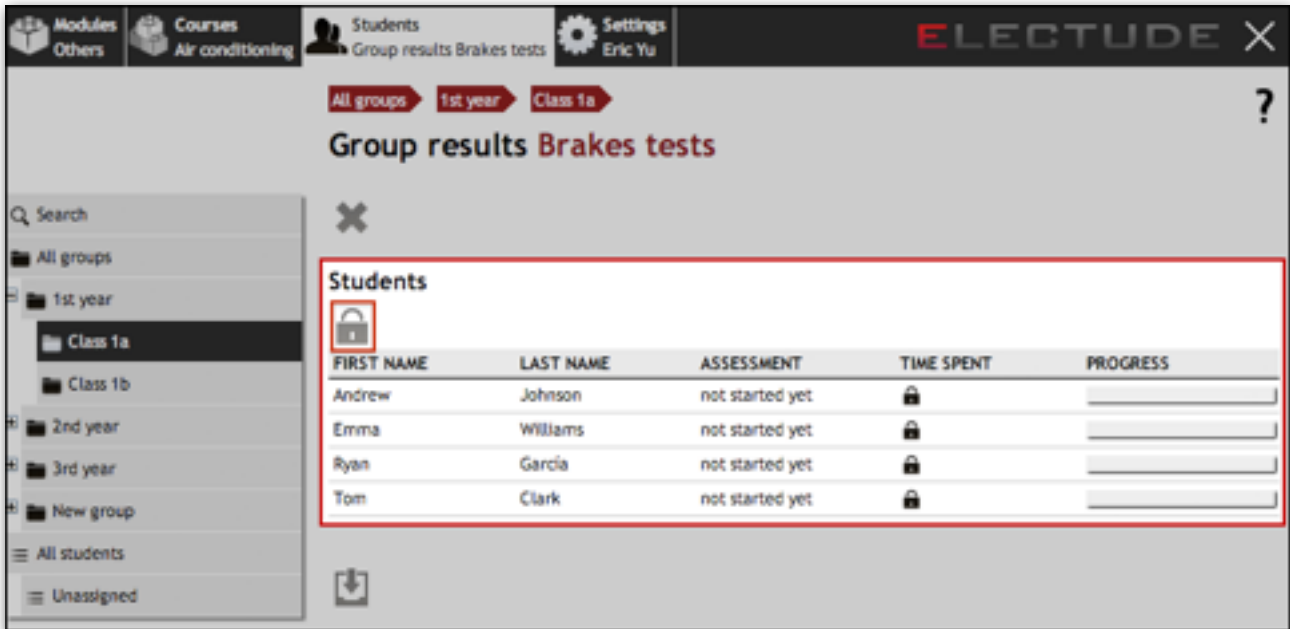
In the table with students, the result for each student is shown. If a student has started the module, you can click on the row to zoom in on the Individual results of a module.

The screenshot displays the Electude interface for 'Group results Starter Motor: Shift Lever'. The top navigation bar includes 'Modules', 'Courses', 'Students', and 'Settings'. The main content area shows a breadcrumb trail: 'All groups > 1st year > Class 1a'. Below this, there are two tables: 'Objectives' and 'Students'. The 'Objectives' table shows average results for various learning and understanding objectives with progress bars. The 'Students' table lists individual students with their first and last names, the number of sessions, time spent, and their progress.





PROCESS	KEYWORD	PROGRESS
learning	Components of the overrunning clutch	<div style="width: 25%;"></div>
learning	components of the shift lever	<div style="width: 75%;"></div>
learning	function of the overrunning clutch	<div style="width: 25%;"></div>
learning	function of the shift lever	<div style="width: 25%;"></div>
learning	function of the spiral splines	<div style="width: 25%;"></div>
learning	shift lever	<div style="width: 25%;"></div>
understanding	functioning of the overrunning clutch	<div style="width: 75%;"></div>
understanding	functioning of the shift lever	<div style="width: 75%;"></div>


FIRST NAME	LAST NAME	SESSIONS	TIME SPENT	PROGRESS
Andrew	Johnson	1	00:10:32	<div style="width: 75%;"></div>
Emma	Williams	1	00:10:06	<div style="width: 75%;"></div>
Ryan	Garcia			<div style="width: 0%;"></div>
Tom	Clark			<div style="width: 0%;"></div>

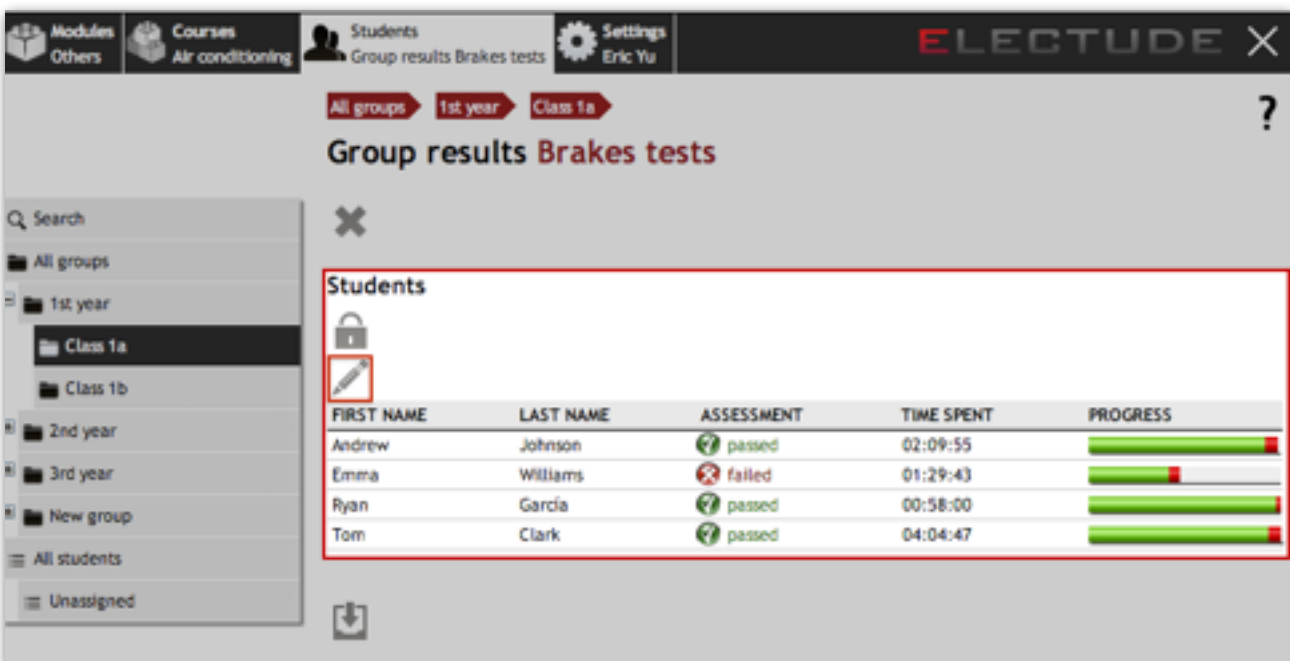
If the module is a test, it may be the administrator has restricted access to the module. In this case access has to be granted explicitly. You can do this for all students in a group by clicking the icon above the table  'Edit access for all students'. The table shows for every student whether the test is  unlocked or  locked. The access can also be changed for every student by clicking these icons.







The screenshot shows the 'Group results Brakes tests' page. The breadcrumb trail is 'All groups > 1st year > Class 1a'. The table below shows the test status for four students:

FIRST NAME	LAST NAME	ASSESSMENT	TIME SPENT	PROGRESS
Andrew	Johnson	not started yet		<input type="text"/>
Emma	Williams	not started yet		<input type="text"/>
Ryan	Garcia	not started yet		<input type="text"/>
Tom	Clark	not started yet		<input type="text"/>

If the results concern a test, you can change the evaluation of the test for this group by clicking the icon  'Edit evaluation'. You can then change the passing score. For each passing score the number of students that will pass and the number of students that will fail the test is shown. Select a percentage and confirm. The evaluation of all students is changed accordingly.



The screenshot shows the 'Group results Brakes tests' page after evaluation. The breadcrumb trail is 'All groups > 1st year > Class 1a'. The table below shows the test results for four students:

FIRST NAME	LAST NAME	ASSESSMENT	TIME SPENT	PROGRESS
Andrew	Johnson	 passed	02:09:55	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Emma	Williams	 failed	01:29:43	<div style="width: 100%;"><div style="width: 25%;"></div></div>
Ryan	Garcia	 passed	00:58:00	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Tom	Clark	 passed	04:04:47	<div style="width: 100%;"><div style="width: 100%;"></div></div>

Linking the results of two students

To enable 'teamwork' the results of two students on one module can be linked. This way students can work together on a module while the results appear on both student accounts.

Students can only be linked before they start the module. Click in the overview with group results of a module on a student that has not started the module yet. Then select in the form to link results the other student from the same group. Only students that are not linked yet and have not started the module yet, may be selected. You can undo a link by selecting 'Not linked' from the list.

In the overview with group results of a module the icon after the name of the student indicates his results are linked with another student.

When one of the two students starts the module, all results will be saved automatically for both student accounts. Once the students have started the module, they can only be unlinked when the results are removed. When results are deleted, this happens for both accounts.



For tasks both students can be evaluated individually with separate scores. See Task results for more information.

The results of tests cannot be linked.

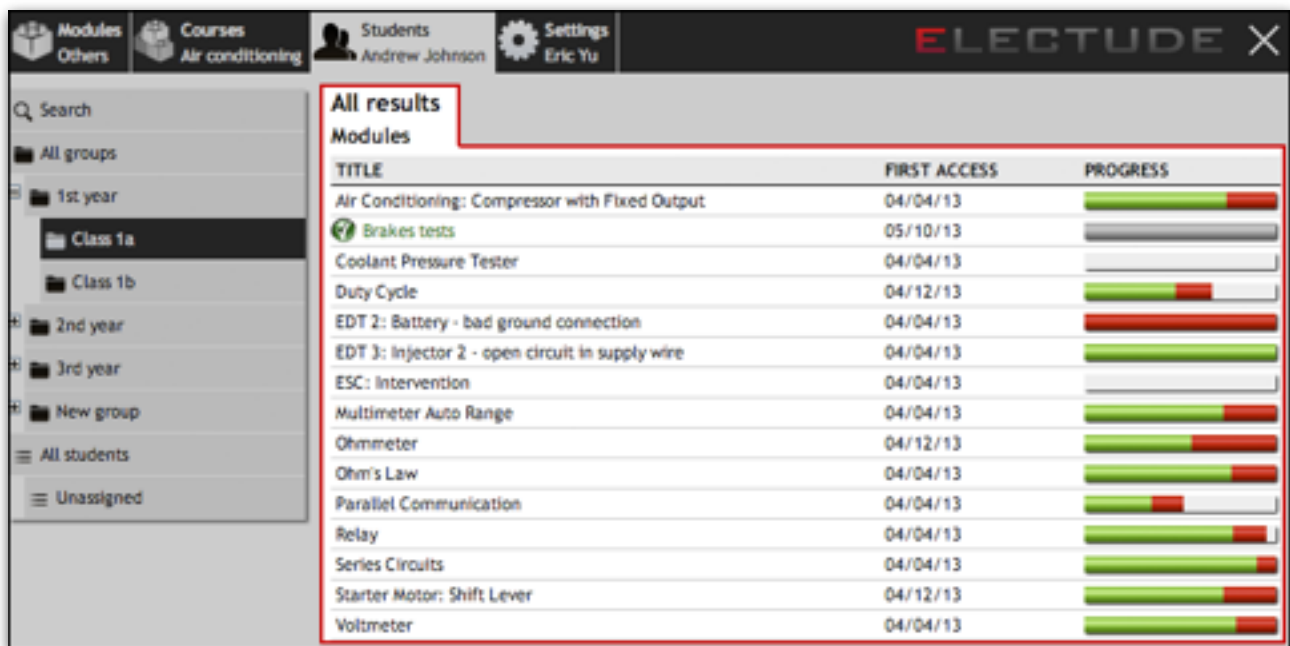



Individual results

The page for each student displays the results of all individual content, in the same way as the results of the group content is displayed. If you have assigned individual content to the student, you can use the table of results to click to the Individual results of a course or Individual results of a module.

If the administrator has restricted access to test, the table shows for every test whether it is  unlocked or  locked. The access can be changed for every test by clicking these status icons.

Below the heading 'All results', all modules the student has opened in the past are listed. From this list you can click to access the Individual results of a module.



All results		
Modules		
TITLE	FIRST ACCESS	PROGRESS
Air Conditioning: Compressor with Fixed Output	04/04/13	<div style="width: 100%;"><div style="width: 100%;"></div></div>
 Brakes tests	05/10/13	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Coolant Pressure Tester	04/04/13	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Duty Cycle	04/12/13	<div style="width: 100%;"><div style="width: 100%;"></div></div>
EDT 2: Battery - bad ground connection	04/04/13	<div style="width: 100%;"><div style="width: 100%;"></div></div>
EDT 3: Injector 2 - open circuit in supply wire	04/04/13	<div style="width: 100%;"><div style="width: 100%;"></div></div>
ESC: Intervention	04/04/13	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Multimeter Auto Range	04/04/13	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Ohmmeter	04/12/13	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Ohm's Law	04/04/13	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Parallel Communication	04/04/13	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Relay	04/04/13	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Series Circuits	04/04/13	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Starter Motor: Shift Lever	04/12/13	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Voltmeter	04/04/13	<div style="width: 100%;"><div style="width: 100%;"></div></div>

Individual results of a course

On this page the results of one student on each module in the course are shown. You can click to the detailed Individual results of a module, when the student has started the module.

The screenshot shows the Electude interface for a student named Tom Clark in the 'Basic electronics' course. The breadcrumb trail indicates the path: All groups > 1st year > Class 1a > Tom Clark. The main content area displays a table of modules with their titles, time spent, and progress bars. The progress bars are color-coded: green for completed or in-progress, and red for locked or not started.

TITLE	TIME SPENT	PROGRESS
Ohm's Law	00:06:31	100%
Voltmeter	00:02:53	100%
Ohmmeter	00:01:31	100%
Ammeter	00:03:37	100%
Multimeter Auto Range	00:01:42	100%
Current Clamp	00:17:34	100%
Series Circuits	00:21:07	100%
Parallel Circuits	00:08:55	100%
Kirchhoff's First Law	00:09:02	100%
Power Law	00:27:31	100%
DC and AC Voltage	00:42:36	100%
Ground-Switched and Positive-Switched	00:27:21	100%
Relay	00:27:20	100%
Duty Cycle	00:15:05	100%
Fault Finding	00:31:54	100%

If the administrator has restricted access to test, the table shows for every test whether it is unlocked or locked. The access can be changed for every test by clicking these status icons.

Individual results of a module

On this page you can see all detailed results of one student on one module. For all kinds of modules, the status of the selected student, the number of sessions the student has had, and the first and last times the module was accessed are shown. For most modules, the progress and the time spent on the module are also shown.

You can delete the individual results by clicking and confirming ✕ 'Delete results'. When the results of a lesson are deleted, the student has to start again from the beginning.

The screenshot shows the Electude interface for a student named Stator. The top navigation bar includes 'Modules Others', 'Courses Predefined', 'Students Results Alternator: Stator', and 'Settings Eric Yu'. The main content area is titled 'Results Alternator: Stator' and features a 'Delete results' button (✕). Below this is a 'STATISTICS' section with the following data:

Status	completed (04/12/13)
Progress	100% (correct: 82%, incorrect: 18%)
Sessions	1
Time spent	00:03:18
First access	04/12/13
Last access	04/12/13

Below the statistics is a 'PROGRESS' bar. The 'Objectives' section is a table with columns for PROCESS, KEYWORD, and PROGRESS:

PROCESS	KEYWORD	PROGRESS
learning	components of the stator	<div style="width: 100%;"></div>
learning	delta connection	<div style="width: 5%;"></div>
learning	star connection	<div style="width: 80%;"></div>
learning	stator fault	<div style="width: 90%;"></div>
learning	task of the stator	<div style="width: 85%;"></div>
learning	types of stator connections	<div style="width: 100%;"></div>

The 'Responses' section shows 'Page 1' with two questions:

Question 1 (learning components of the stator)
 Click on the alternator to view the stator.
 Correct.

Question 2 (learning task of the stator)
 Move the mouse over the stator to view the names of the components.
 What is the task of the stator core?
 To amplify the magnetic field.
 To increase the voltage generated.

You can specify a percentage manually for modules that cannot be evaluated automatically, like tasks, files or links. Click ✎ 'Edit result' and select a score.

Lesson, practical work or test results

For these kinds of modules, a progress bar for each objective is shown below the general statistics.

The answers the student has given to the questions are listed. Only the first answer to every question is shown. All attempts are displayed as a green or red square, next to the question. When a student has answered the question incorrectly twice and correctly once, one green square and two red squares are displayed. Answers will be stored for three months only before disappearing.

For practical work additional results can appear between the objectives and the answers. These results can be tables, graphs or diagrams created by the student. It may not be possible to evaluate these results automatically, for example because they depend on the condition of the hardware. You can evaluate these tables, graphs and diagrams for yourself. A grey area that represents these results may appear in the progress bar of the module.

The evaluation of tests (passed or failed) can be changed. Click ✎ 'Edit result', select 'passed' or 'failed' and confirm by clicking 'ok'.

Task results

Tasks are not evaluated automatically. When the student has finished a task, it's status becomes 'completed'. Using the button 'review module' you can see the answers, tables and drawings the student created. Then you can use ✎ 'Edit result' to specify a percentage score manually.

Simulation results

Results **Mike Lee**

STATISTICS

Status	completed (07/10/15)
Progress	100% (correct: 88%, incorrect: 13%)
Sessions	2
Time spent	00:06:15
First access	07/10/15
Last access	07/10/15
Diagnosis and work performed	Injector 1 was faulty, resistance too high. Injector 1 was replaced, fault solved.
Final inspection	The failure is resolved, but there are other issues. There are stored fault codes.

Invoice

ITEM	NUMBER / MINUTES	PRICE	AMOUNT
OBD scan	1	\$ 30	\$ 30
Injector	1	\$ 76	\$ 76
Troubleshooting time	7	\$ 1	\$ 7
Additional labor time	25	\$ 1	\$ 25
TOTAL			\$ 138

Simulations are only evaluated automatically when this is has been specified in the module. The score will then be determined by three factors:

- Efficiency (50%)
Unnecessary actions, like replacing a part that was not faulty, will result in a lower percentage.
- Tidy work (50%)
When things are not returned in a correct state, the percentage is will be lower.
- The number of attempts before the failure is solved
For every failed attempt, the score is halved.

How the score is calculated exactly is described in the manual of the Electude Simulator. You can always adjust the score manually. Click 'Edit result', select the desired score and confirm by clicking 'ok'.

The final inspection that is generated by the simulator is included in the results. When a work order is specified in the simulation, the results will also contain the diagnosis the student has filled in.


When an invoice is included in the simulation, it is displayed here as well. It shows a summary of the actions the student has performed.

All performed actions are shown chronologically in the log file. Any additional data like oscilloscope images are shown at the bottom of the page.

Exporting results

In the different views of the results, you can export the results shown by clicking the icon.

Students				
FIRST NAME	LAST NAME	FINISHED MODULES	TIME SPENT	PROGRESS
Andrew	Johnson	5	01:59:22	<div style="width: 80%;"><div style="width: 80%;"></div></div>
Emma	Williams	6	01:19:37	<div style="width: 90%;"><div style="width: 90%;"></div></div>
Ryan	Garcia	4	00:50:00	<div style="width: 60%;"><div style="width: 60%;"></div></div>
Tom	Clark	4	04:04:47	<div style="width: 60%;"><div style="width: 60%;"></div></div>




A file will be generated, with each line containing the result of one module for one student. In the Import and export settings you can specify the file format and what fields are used in the file. Each line may contain these fields (columns):

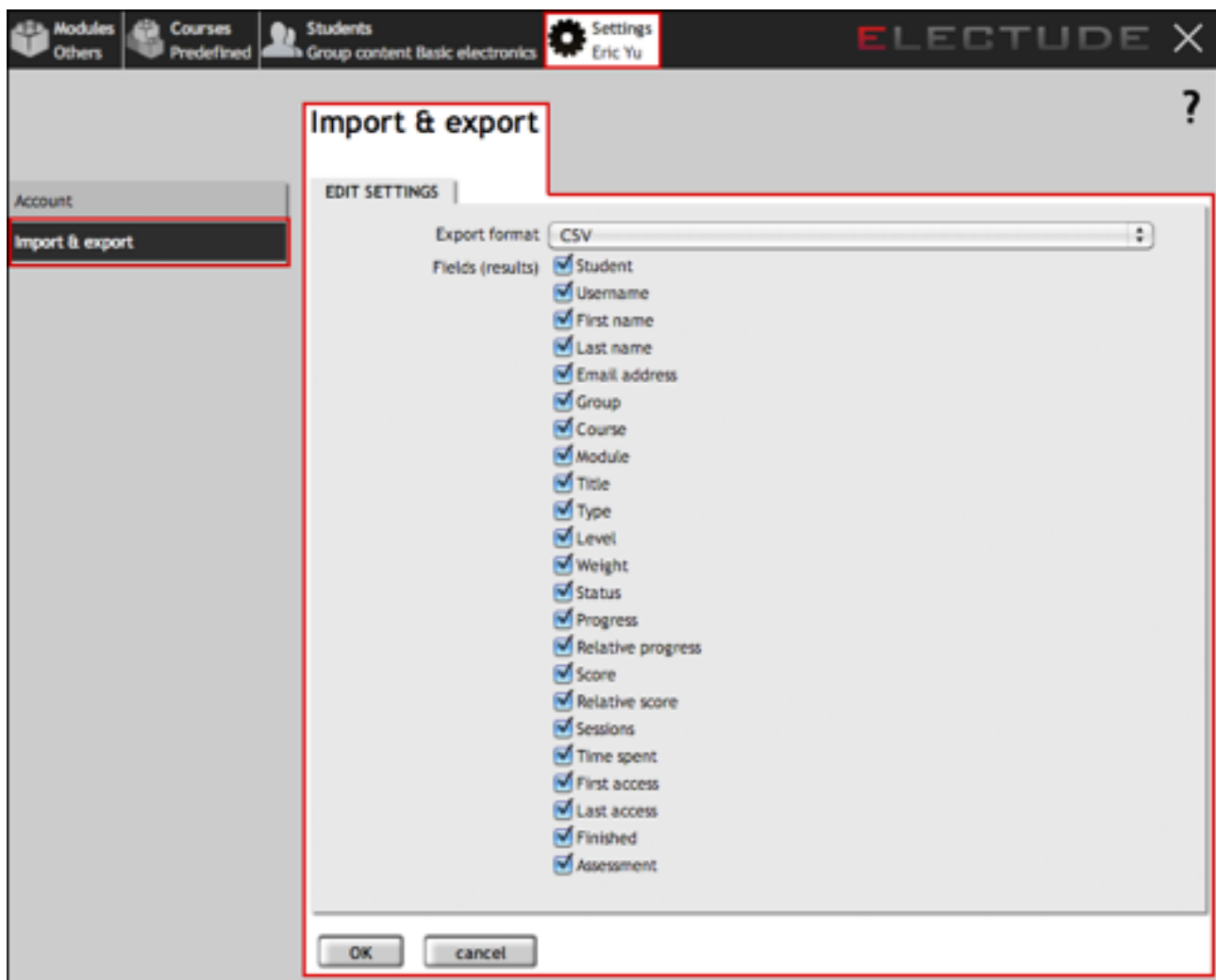
1. Student
A unique number that is generated by the Electude LMS to identify the student. This number is also used in the URL of the student's webpage (for the teacher).
2. Username
The unique username of the student.
3. First name
4. Last name
5. Email address
6. Group
The unique name of the group the student belongs to.
7. Course
The name of the course that contains the module (if applicable).
8. Module
A unique number that is generated by the Electude LMS to identify the module. This number is also used in the URL of the module.
9. Title
The name of the module.
10. Type
The type of module as listed in the LMS.

11. Level
The level of the module.
12. Weight
The maximum number of points that can be reached in a module. This usually depends on the number of questions the module contains. A high weight generally means the module will take more time.
13. Status
Indicates whether the student still has to start, is busy or has finished the module.
14. Progress
Indicates numerically the progress the student has made in the module.
15. Relative progress
Indicates the progress the student has made in the module as a percentage. This percentage is calculated by dividing the progress by the weight of the module.
16. Score
Indicates how many points the student has scored by answering questions correctly.
17. Relative score
Indicates the score of a student as a percentage. This percentage is calculated by dividing the score by the weight of the module.
18. Sessions
The number of times the student has opened the module.
19. Time spent
The total amount of time in hours:minutes:seconds.
20. First access
The date the module was opened for the first time.
21. Last access
The date the module was opened for the last time.
22. Finished
The date the module was finished by a student (if applicable).
23. Performance
Only applies to test: passed or failed.

	B	C	D	E	F	G	H	I	J	K
1	Username	First name	Last name	Group	Course	Module / Tes Title	Level	Weight	Status	
2	andrew_john	Andrew	Johnson	Class 1a	Basic electro	27 Voltmeter	2	26	completed	
3	emma_williar	Emma	Williams	Class 1a	Basic electro	27 Voltmeter		26	completed	
4	ryan_garcia	Ryan	Garcla	Class 1a	Basic electro	27 Voltmete		26	completed	
5	tomclark	Tom	Clark	Class 1a	Basic electro	27 Voltmet		26	busy	



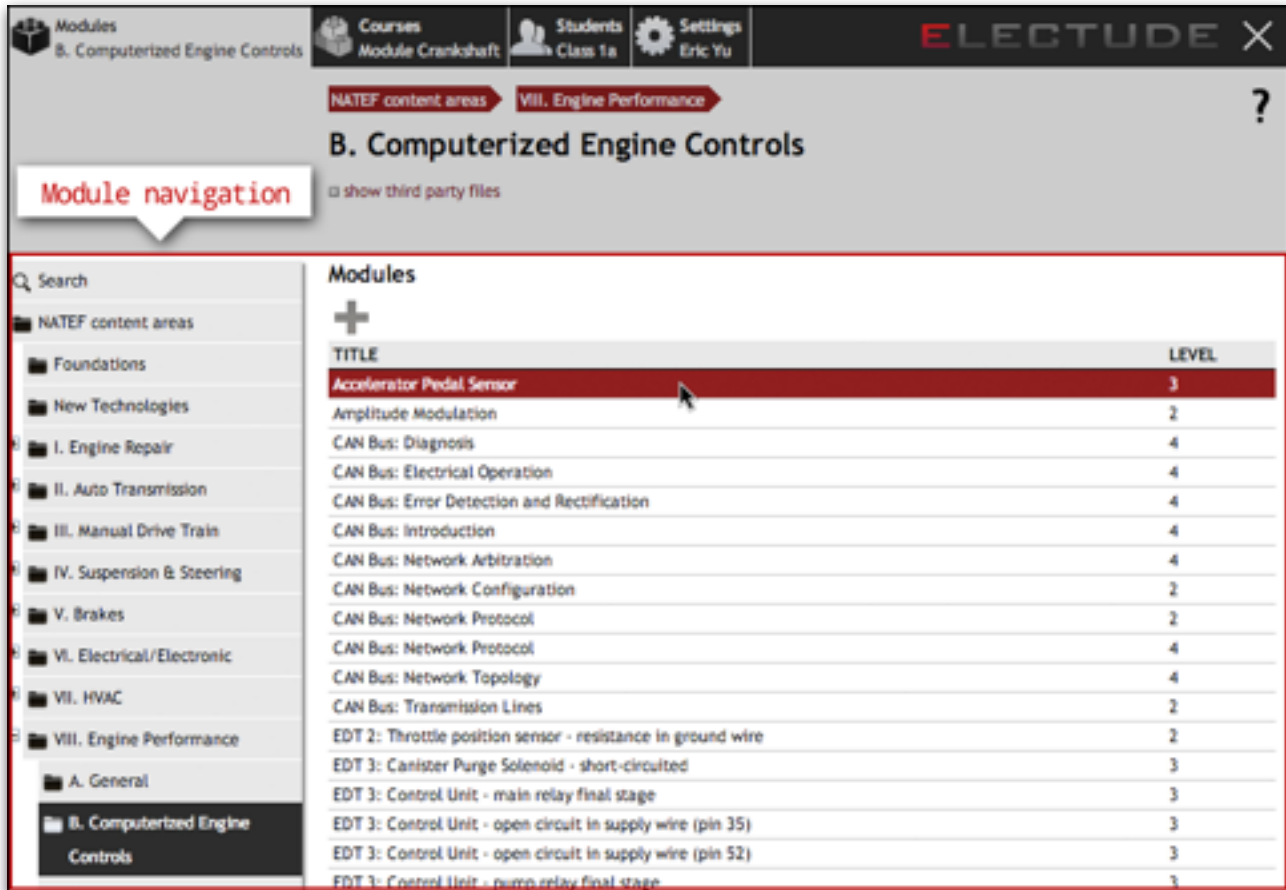
You can specify the file format and what fields are used in the file in the Import and export settings.



Courses and modules explained in details

Modules


Modules are the building blocks of all the content in the LMS. You can arrange the modules in a course or use them separately.

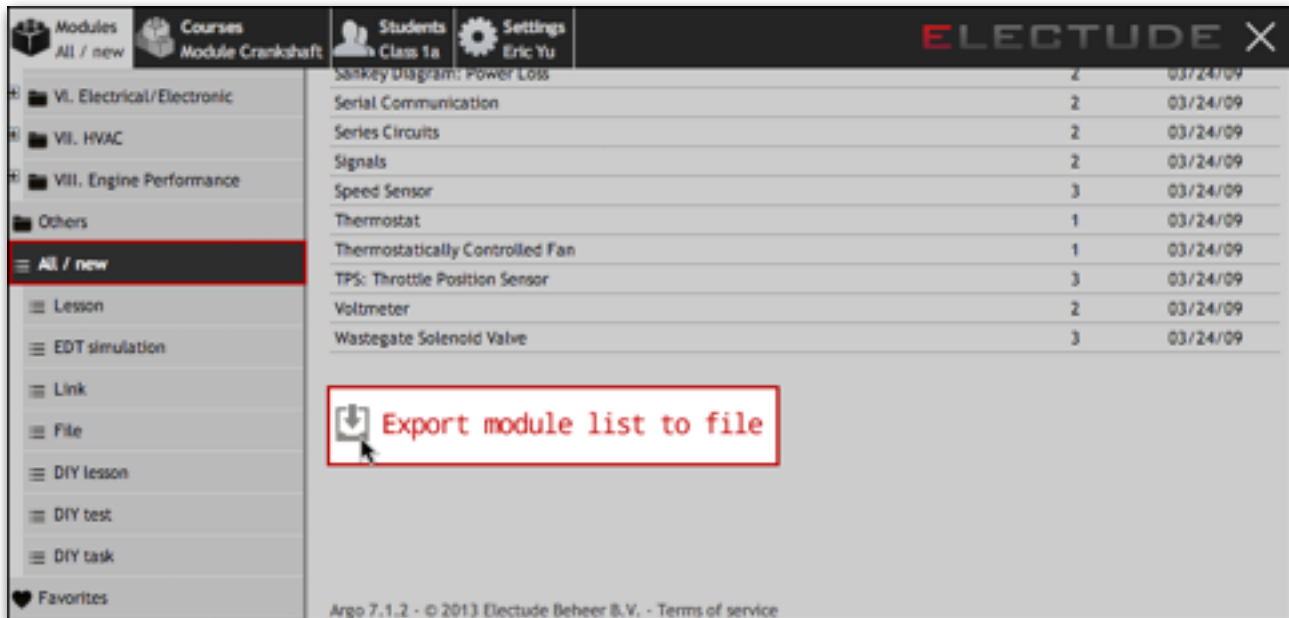


The screenshot shows the Electude LMS interface for the course 'B. Computerized Engine Controls'. The top navigation bar includes 'Modules', 'Courses', 'Students', and 'Settings'. The course title 'B. Computerized Engine Controls' is displayed prominently. A 'Module navigation' callout points to the left sidebar, which contains a search bar and a tree view of content areas. The main content area shows a list of modules under the heading 'Modules'. The 'Accelerator Pedal Sensor' module is highlighted in red, indicating it is the selected item.

TITLE	LEVEL
Accelerator Pedal Sensor	3
Amplitude Modulation	2
CAN Bus: Diagnosis	4
CAN Bus: Electrical Operation	4
CAN Bus: Error Detection and Rectification	4
CAN Bus: Introduction	4
CAN Bus: Network Arbitration	4
CAN Bus: Network Configuration	2
CAN Bus: Network Protocol	2
CAN Bus: Network Protocol	4
CAN Bus: Network Topology	4
CAN Bus: Transmission Lines	2
EDT 2: Throttle position sensor - resistance in ground wire	2
EDT 3: Canister Purge Solenoid - short-circuited	3
EDT 3: Control Unit - main relay final stage	3
EDT 3: Control Unit - open circuit in supply wire (pin 35)	3
EDT 3: Control Unit - open circuit in supply wire (pin 52)	3
EDT 3: Control Unit - pump relay final stage	3

With the top item in the submenu you can search for modules. Using the folder like structure in the submenu you can see lists of related modules. The administrator can select a certain folder structure for the web site.

When you select 'All / new' you can easily see which modules recently have been added. This page lists all modules sorted by publication date. This list can also be saved as a file, by clicking on the  icon at the bottom of the page (see Import and export settings for file formats). By selecting the bottom item from the submenu you can see your favorite modules.



The screenshot shows the Electude interface with a sidebar on the left containing a menu with options like 'Lesson', 'EDT simulation', 'Link', 'File', 'DIY lesson', 'DIY test', 'DIY task', and 'Favorites'. The 'All / new' option is selected. The main area displays a list of modules with columns for the module name, a count, and a date. A red box highlights a download icon and the text 'Export module list to file' at the bottom of the list.

Module Name	Count	Date
Satkey diagram: Power Loss	2	03/24/09
Serial Communication	2	03/24/09
Series Circuits	2	03/24/09
Signals	2	03/24/09
Speed Sensor	3	03/24/09
Thermostat	1	03/24/09
Thermostatically Controlled Fan	1	03/24/09
TPS: Throttle Position Sensor	3	03/24/09
Voltmeter	2	03/24/09
Wastegate Solenoid Valve	3	03/24/09

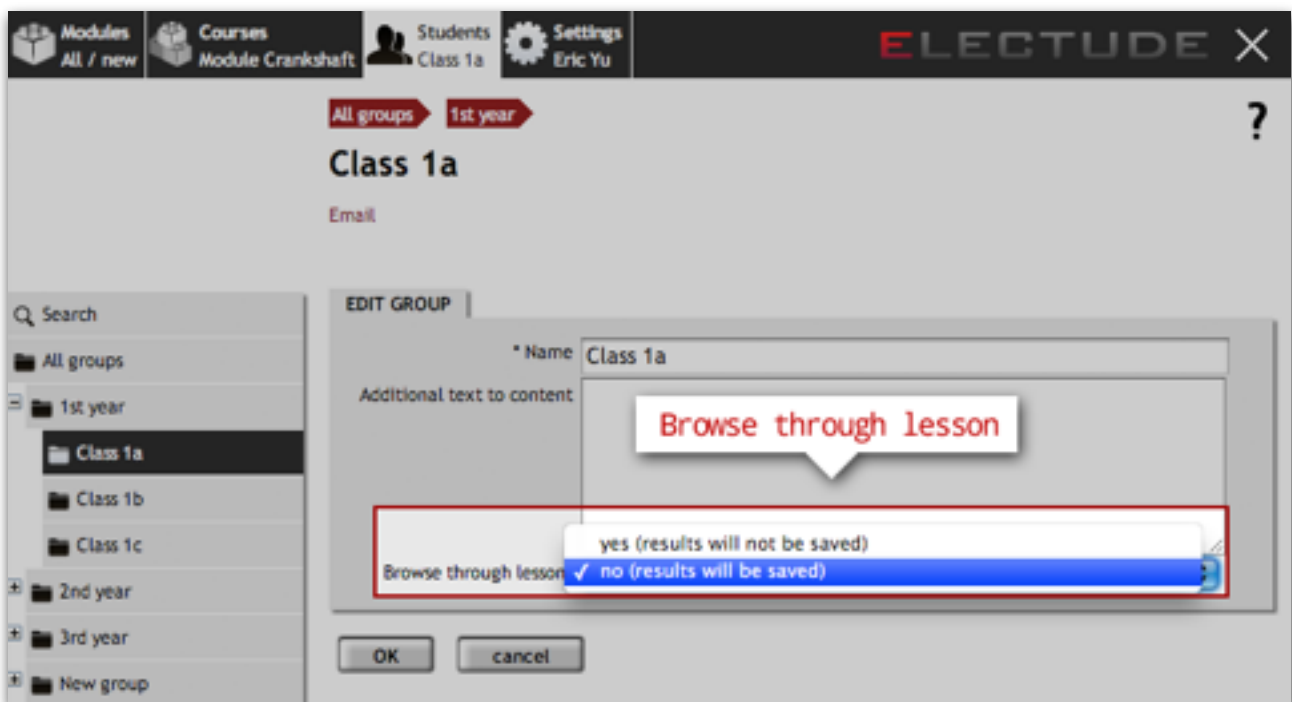
Depending on your license, the following product groups may be available:

- lesson
Lessons are specially developed modules you can 'play' in your browser. They contain images, animations, simulations, texts and questions on a series of learning objectives. A student can review lessons he has finished through his personal history for 5 years.
- practical work
This has the same format as lessons; practical work usually requires special hardware.
- tailor-made lesson
This kind of lesson is custom developed for you in assignment.
- simulation
These modules you can add yourself. Every module uses the Electude Simulator to replicate a specific failure. Students are tasked with solving a real world problem in the browser. The teacher can set the parameters of the simulation.
- links
You can add links to other web pages yourself.
- files
You can add files (e.g. images or PDF documents). Files may be shared with other organizations.
- DIY lesson
DIY lessons can be 'played' in your browser in the same way as normal lessons, but you can change and add the content yourself.

- **DIY test**
A DIY test is similar to a DIY lesson. When the student answers a question however, no direct feedback will be given and the evaluation of the results can be done automatically.
- **DIY task**
Unlike lessons and tests, Tasks are not evaluated automatically. Task results need to be recorded by the teacher manually, by reviewing student answers.
- **WorkshopData**
This module provides a year's access to an online database with maintenance and repair information for cars. Direct access to the WorkshopData is not available through the history of the student.
- **TruckData**
This module provides a year's access to an online database with maintenance and repair information for trucks. Direct access to the TruckData is not available through the history of the student.

Lessons and objectives

Teachers are able to browse through the module when viewing a lesson (or practical work); i.e. you can immediately navigate to the end of a lesson without first answering all the questions. Students (by default) have to answer all questions to progress in a lesson, but they can also be placed in a group that can 'browse through lessons' (see for more information Students and groups).




On the information page of the lesson, all covered objectives are displayed in a table. The (relative) weight of every objective is visible. This weight is the sum of the weights of all questions that are linked to the objective. Because every question is linked, the student results can be monitored for each objective (see Viewing results).

Camshaft Adjustment

Module name


show third party files



What can be done to improve the performance and fuel efficiency of an engine?

▶ Start module

Module information



MODULE INFORMATION

Level	2
Type	principle
Duration	00:35:00
Date	09/06/10
Product group	lesson

Learning objectives

Objectives

PROCESS	KEYWORD	WEIGHT
learning	Adjustments that can be made to the camshaft	4%
learning	Benefits of camshaft adjustment	7%
learning	Components of camshaft adjustment	12%
learning	Function of electromagnetic valve	4%
learning	Intake camshaft adjustment	3%
learning	Type of camshaft adjustment	4%
understanding	Adjustment of variable opening time	17%
understanding	Adjustment of variable valve passage area	12%
understanding	Adjustment of variable valve timing	12%
understanding	Status of valve timing	24%

The objectives are specified according to Bloom's revised taxonomy. This taxonomy makes a distinction between a process dimension and a knowledge dimension. The knowledge dimension is specified in the column of keywords. The process dimension is specified as a verb. These verbs progress in difficulty:

1. **learning**
To reproduce knowledge / facts without further understanding.
 - Synonyms: *list, name, recognize, define, cite, indicate.*
2. **understanding**
To demonstrate that knowledge has a meaning, especially for interpreting relations and processes.
 - Synonyms: *explain, infer, argue, classify, describe.*

- Example:
 - 'understanding' the relation between current, resistance and voltage (Ohm's law).

3. **application**

To apply knowledge in practice.

- Synonyms: *calculate, use equipment, execute*.
- Examples:
 - Ohm's law calculations;
 - adjusting an oscilloscope to display the RPM signal and read off the pulse width;
 - measuring the tire profile depth with a micrometer.

4. **analysis**

To interpret data, leading to a one to one conclusion.

- Synonyms: *combine, deduce, judge, attribute*.
- Examples:
 - reading off the RPM from an oscilloscope image of the RPM signal (i.e. extra meaning is added to the example for application);
 - passing or failing a tire profile after inspection;
 - interpreting internal leakage using a block tester.

5. **evaluation**

To arrive at a conclusion using data (measurement and reference values) that is ambiguous. There are (often) multiple solutions or diagnoses which do not follow one to one.

- Synonyms: *diagnose, compare, exclude, test, decide*.
- Examples:
 - making a diagnosis based on the scope image of an incorrect RPM signal (e.g. a bad ground connection);
 - testing brakes on a brake test bench;
 - listing the advantages of an electrically-controlled diesel pump when compared to a mechanical pump (if these are not given in the text).

6. **creation**

To produce something new by adding or removing elements.

- Synonyms: *assemble, repair, build*.
- Examples:
 - repairing the bad ground connection of a faulty RPM sensor;
 - creating the truth table for a light unit;
 - drawing a relay circuit.

Courses

A course is an arrangement of modules. You can assemble a course yourself or use predefined courses. Modules appear in a course in a certain order. The student is free to use the modules in this order; he is not required to complete the modules in the defined order.

Courses can be nested, like folders in a tree on your computer. In a sub course you can add modules again.

Apart from a title, a course can also be given a description. This description appears for students as an introduction to the course.

The screenshot shows the Electude interface with the following components:

- Navigation Sidebar:** Includes 'Search', 'Self-made', 'Predefined', and 'Favorites'.
- Course Tab:** 'Air conditioning' is selected under the 'Courses' tab.
- Course Name:** 'Air conditioning' is displayed at the top.
- Subcourse(s) Table:** A table with columns: TITLE, LEVEL, MODULES, DURATION, PUBLICATION.
- Module(s) Table:** A table with columns: TITLE, LEVEL, DURATION. It lists 11 modules for 'Air Conditioning'.

TITLE	LEVEL	DURATION
Air Conditioning: Introduction	2	00:05:00
Air Conditioning: Coolant Cycle	2	00:49:00
Air Conditioning: Metering Principles	2	00:12:00
Air Conditioning: Compressor with Fixed Output	2	00:07:00
Air Conditioning: Compressor with Variable Output	2	00:05:00
Air Conditioning: Coupling and Lubrication	2	00:05:00
Air Conditioning: Condenser	2	00:03:00
Air Conditioning: Fixed Metering	2	00:04:00
Air Conditioning: Variable Metering	2	00:12:00
Air Conditioning: Evaporator	2	00:03:00
Air Conditioning: Accumulator	2	00:04:00

Advanced tasks

Content management - Own material (self-made modules)

You can add your own material as a module.

- lessons
- tests
- tasks
- simulations
- files (e.g. images or PDF documents)
- links to other web pages

You can build your own lessons, tests and tasks in Electude LMS. See Building your own lesson, test or task for more information.

A test has the same format as a lesson; only no direct feedback is given when questions are answered. Students have a limited amount of time to finish the test. A passing score can be set which must be met to pass the test.

Tasks are not evaluated automatically, unlike lessons and tasks. The result of a task needs to be specified by the teacher manually, by reviewing the answers the student has given.

A simulation uses the Electude Simulator to replicate a specific failure. The parameters of the simulation can be set.

The maximum file size allowed is 10 MB. There is only a limited amount of space available for all the files on your website. The administrator of the site can monitor how much space is left.

Third party files can be shown or hidden, by toggling this setting at the top of the page on and off. The settings applies to search results, folders and the lists of all and favorite modules.

Adding a module

To add a module, you must first click on the tab 'modules' and select the desired folder in the submenu on the left of the page. Then click the icon 'New module'. Select the desired type, enter a title and a description for the module. To add a file you need to select a file from your computer. You also need to specify whether you want to share this file with the websites of other schools and companies; teachers from these other sites will then be able to use the file. To add a link, enter the URL of the web page. Then click 'add' to confirm. In the table of modules of the selected folder, the new module appears as the bottom row.

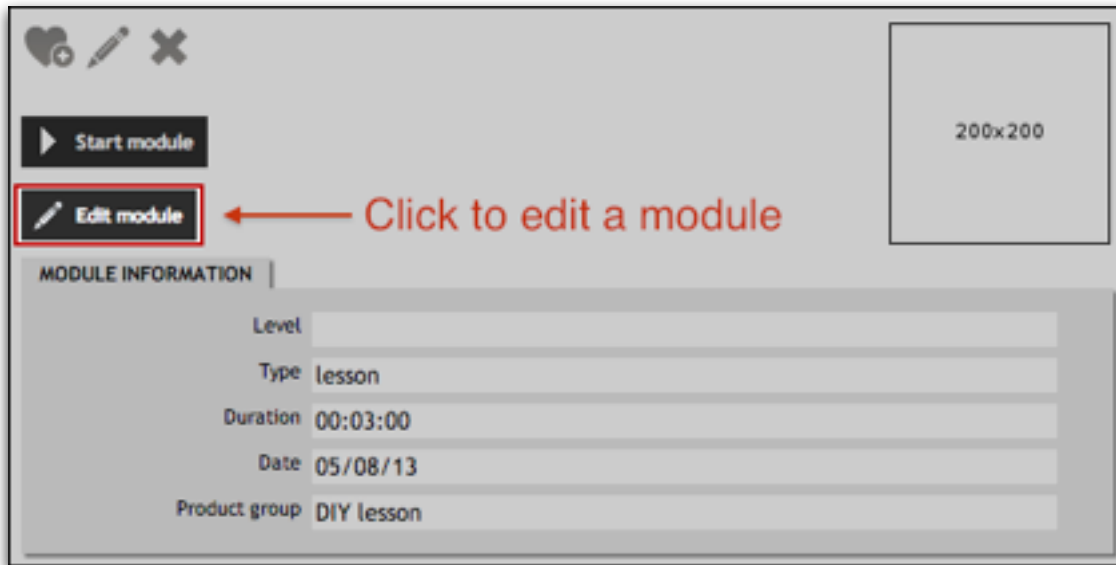
A new (empty) lesson, test or task consists of an empty page and an empty multiple choice question


The image consists of two screenshots of the Electude interface. The top screenshot shows the 'Modules' section with a table of existing modules. A red box highlights a '+' icon, with an arrow labeled '1' pointing to it. The table below has columns for 'TITLE' and 'LEVEL'.

TITLE	LEVEL
Alternative Fuels	2
Calculating Rotational Frequency	2
Calculating Speed	2
Commercial Vehicle Power Train	2
Converting Length, Surface Area and Volume	2
Fossil Fuels	2
Friction	2
Greenhouse Effect	2
Ideal Gas Law	2
Kyoto Protocol	2
Light Dependent Resistor	2
Magnetic Dependent Resistor	2
Micrometer	2



The bottom screenshot shows the 'NEW MODULE' dialog box. A dropdown menu is open, showing options: 'lesson' (selected), 'test', 'task', 'file', 'link', and 'copy of a DIY module'. An arrow labeled '2' points to the dropdown. At the bottom of the dialog, an 'add' button is highlighted with a red box and an arrow labeled '3', next to a 'cancel' button.

Editing a module



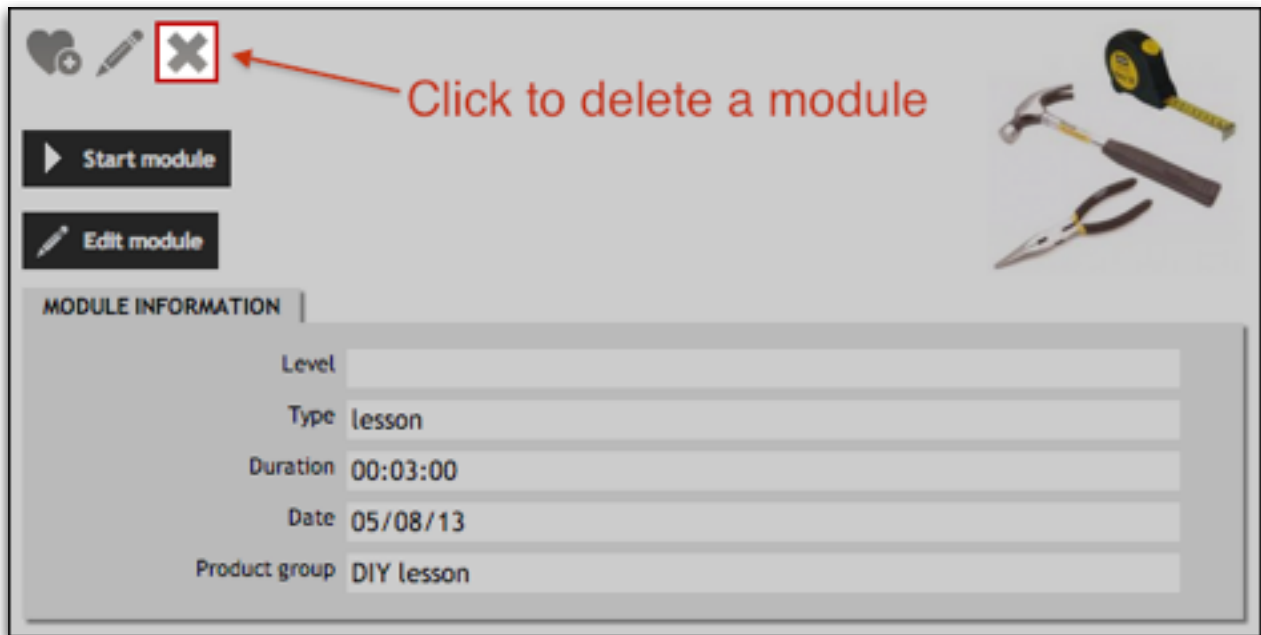
A module can be edited by navigating to the page of the module. Click the icon  'Edit module', to change the title or description of the module. For a file you can also edit whether it is shared with other organizations. You can edit the URL of links. Click 'ok' to confirm.

If you have the possibility to publish content to third parties, you can also select the product group the module should be in. The site administrator also administrates the product groups. When a module is placed in a product group, other Electude LMS users that have a license for that product group can access the module.

To edit the contents of a DIY lesson, test or task, click the button  'Edit module' of  'Edit saved copy'. For more information see Building your own lesson, test or task.

Deleting a module

To delete a module, navigate to the page of the module, click on the icon ✕ 'Delete module' and confirm your choice.



Note: if a module is deleted that is assigned to a course, student or group, the module is removed from the course and disappears for the student or the group. The module is inaccessible and all results of individual students for the module are deleted as well.

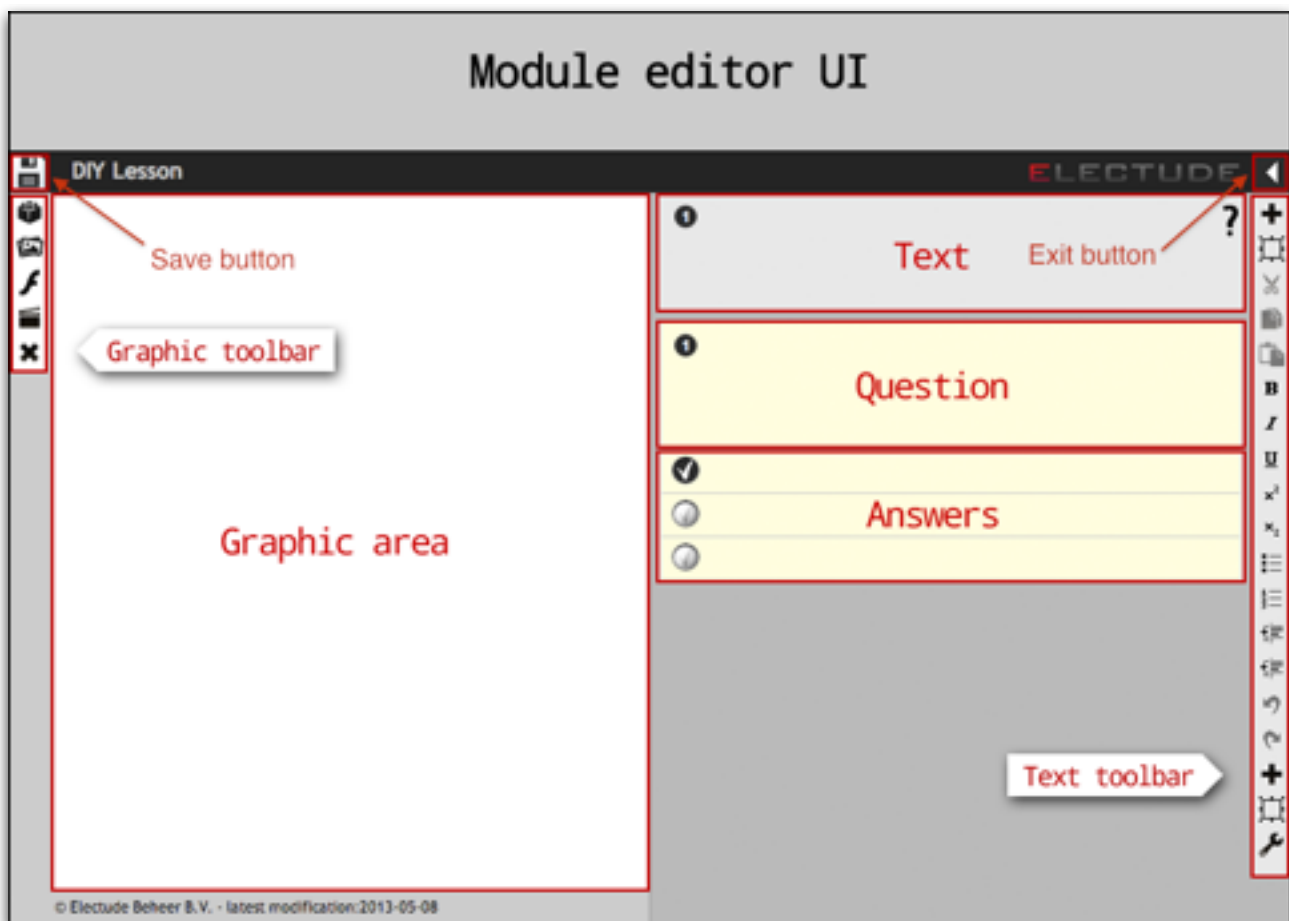
Building your own lesson, test or task

Building your own lesson, test or task

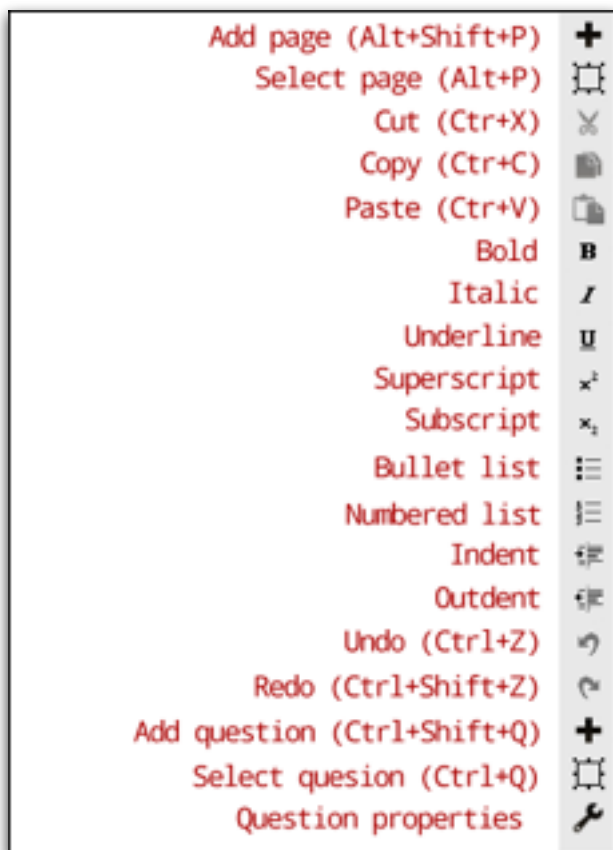
Lessons, tests and tasks can be modified in a WYSIWYG (What You See Is What You Get) editor. The editor looks like a module with toolbars. Navigation between pages and questions works in the same way as in a normal module. Unlike a normal module, you can click on the texts of the pages and questions to edit them.

Special functions in the editor are accessible by clicking the buttons in the toolbar or (sometimes) using the keyboard shortcuts.

Click the button 'save copy' at the top left to save the current status of the module as a copy. To exit the editor you click on the back button, like with normal lessons. Changes you have not saved are lost.



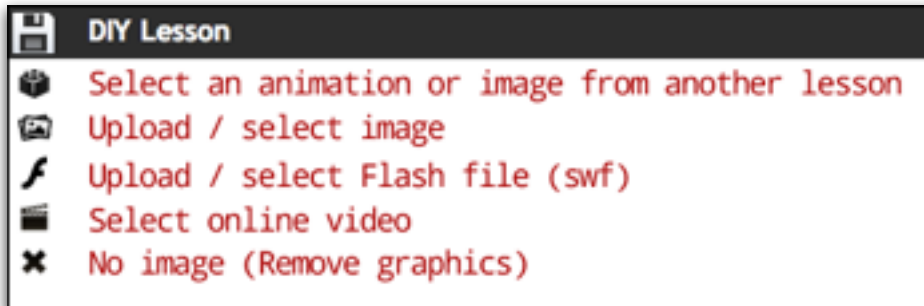
The toolbar on the right is used for creating text and questions. It contains these functions:



- add page (Alt+Shift+P)
The new page is appended after the current page (including a default multiple choice question).
- select page (Alt+P)
The page including all underlying questions are selected.
- cut (Ctrl+X), copy (Ctrl+C) and paste (Ctrl+V)
Clipboard functions apply to the selected text, page or question. This allows you to move a page by cutting it, navigating to another page and pasting it. The cut page is appended after the other page.
The last question of a page cannot be cut, i.e. a page always contains one question. The last page cannot be cut, i.e. a module always contains one page.
Note: it is possible to copy and paste between different browser windows or tabs. This allows you to quickly copy or move pages and questions to another module.
- bold, italic, underline, superscript, subscript, bullet list, numbered list
These buttons apply to the selected text. The buttons work as a toggle. When a piece of text is bold it can be made normal again by clicking the button 'bold'.
- indent and outdent
These buttons apply to the selected text as well, but do not work as a toggle.
- undo (Ctrl+Z) and redo (Ctrl+Shift+Z)
Several steps may be undone and redone.
- add question (Ctrl+Shift+Q)
A default multiple question is appended after the current question.

- select question (Ctrl+Q)
- question properties
You can set the type of question and the corresponding attributes. These question types are available:
 - o multiple choice
the number of answers can be set (minimum 2, maximum 6)
 - o multiple response
the number of answers can be set (minimum 2, maximum 6)
the number of correct answers can be set (minimum 0, maximum the number of answers)
 - o numerical open question
a minimum and a maximum value can be entered.
Use a point (.) as a decimal separator.
When e.g. a maximum is not specified, the answer only has to be greater than or equal to the specified minimum value.
 - o open text question
the correct answer can be entered
The answer of the student is compared to the specified answer and should be exactly the same (case sensitive).
 - o none

With the toolbar on the left you can change the graphics that appear with the current question. For lessons and tests, the toolbar contains these functions:



- select an animation or image from another lesson
For the current question an image, animation or simulation from another module can be selected.
First select the desired module from the list. Then scroll through the graphics of all questions in the module.
- upload / select image
For the current question you can supply your own image. You can create your own folder structure using the right-hand mouse button on the left side. In the selected folder you can add images (upload), delete them or change their names.
When you upload an image that is too big, it is automatically converted to JPEG format with a maximum size of 505 x 545 pixels (width x height). This is the space that is reserved for images in the module. Smaller images are displayed centred. To select a file you double click the image or choose 'Select' with the right-hand mouse button. **Note:** when you remove or rename folders or files that are used in a module, the module will not work properly anymore because the image cannot be loaded. When files are removed or renamed no check is performed to see if the files are used in a module! Files that are removed cannot be restored (there is no recycle bin).
- upload / select Flash file (swf)
For the current question you can supply your own Flash file. This happens in the same way as for images.
- select online video
For the current question you can specify an online video. Enter the URL of the page that shows the video. For a YouTube video this URL looks like this:

<http://www.youtube.com/watch?v=xxxxxxxxxxx>

These online video services are supported:

- dailymotion.com
- facebook.com
- flickr.com
- schooltube.com
- veoh.com

- vimeo.com
- tudou.com
- youku.com
- youtube.com
- 5min.com
- 56.com
- no image
Click this button to have no image, video or animation for the current question.

For tasks the left toolbar contains these functions:



- upload / select image
This is the same function as for lessons or tests.
- create / select fill-in table
For the current question, you can select a table the student has to fill in. The left pane shows a list of tables that belong to this module. Click the button + 'add' to create a new table. The table selected from the list can be * 'deleted' or edited in the right pane. The table can be resized by dragging the right or bottom border. When a table cell contains a value, it cannot be changed by a student; student can only fill in table cells that are empty. For each table the header row and column can be toggled on and off. You can also select a chart that is updated automatically when the content of the table is changed. When a chart is selected, only numerical values are accepted inside the table.
- Click 'save' to save the changes in the selected table.
To select the current table for the current question in the module, you click on the 'OK' button in the bottom left. To close the window without changing the graphics for the current question, you click 'cancel'.
- create / select drawing
For the current question, you can select a drawing the student has to create or complete. The left pane shows a list of drawings that belong to this module. Click the button + 'add' to create a new drawing. The drawing selected from the list can be * 'deleted' or edited in the right pane. For every drawing a background image can be selected and an initial drawing can be created. The student can change this drawing, but cannot change the background. Click 'save' to save the changes in the selected drawing.
To select the current drawing for the current question in the module, you click on the

'ok' button in the bottom left. To close the window without changing the graphics for the current question, you click 'cancel'.

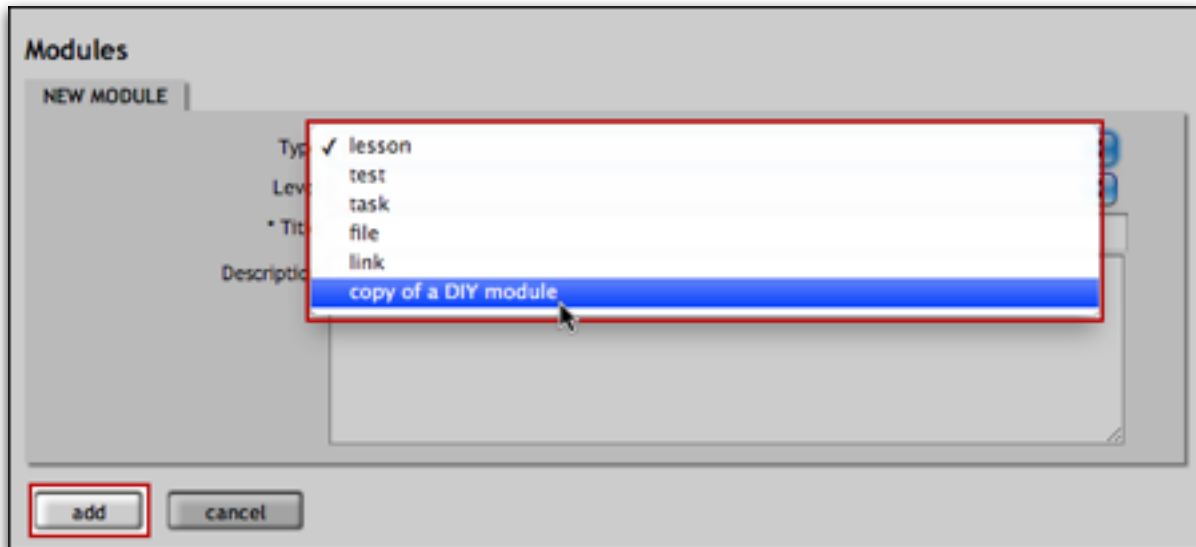
Publishing a DIY lesson, test or task

A module can be used after it has been published. Click 'publish copy' to do this. Click the button 'Edit module', to edit the published version of the module. Click the button 'Edit saved copy', the version of the module that was saved the last time. When something goes wrong, you can always revoke the changes by clicking 'Edit module'.



Copy a DIY lesson, test or task

You can use the form to add modules to copy DIY lessons, tests or tasks. To do this you first need to add the module you want to copy to your favorites (see Managing favorites). Then go to the desired folder, click the icon + 'New module' and choose 'copy of a DIY module' from the type list. Finally select the module from the list of favorites and click 'add'.



Configuring a simulation


For a simulation there are some additional settings.

- **Electude Simulator**
Here you can select the topic of the simulation.
- **Failure**
This setting determines what the problem is in the selected simulator.
- **Work order**
You can specify an introductory text that will appear on the work order. When no text has been filled in, there will be no work order available to the student. Without a work order the student cannot fill in a diagnosis.
- **Available tools**
Here you can click the boxes of the tools that can be used by the student.
- **Automatic evaluation**
When automatic evaluation is switched on, the score of the module will be calculated automatically when the student has solved the problem. If a work order was specified, this calculation is performed when the the work order is submitted. Otherwise the calculation is done at the end of the session. If the failure is not solved after 4 attempts, the score will be set to 0. See for the calculation of the score the manual of the selected simulator.
When automatic evaluation is switched off, the status of the module will only be set to 'finished' when the failure is solved.
In both cases, the score of the simulation may be changed manually by the teacher afterwards.

When the simulation is finished, the student can still access the simulation. However, the actions performed by the student are no longer logged.

Using modules as SCORM packages

When the licence of your Electude LMS site allows it, you can use modules or courses in another, SCORM compliant LMS (of a third party). You need to save the SCORM package on your computer first.

Navigate to the module via the tab 'modules' and click  'Download as a SCORM package'. The SCORM package is a resource package in PIF format (Package Interchange Format) and contains the module as a SCO (Sharable Content Object). To use the module you put the SCORM package in the other LMS according its instructions.

The administrator of your site has selected to which SCORM version the package complies and in which LMS the package can be used.

Content management - Courses

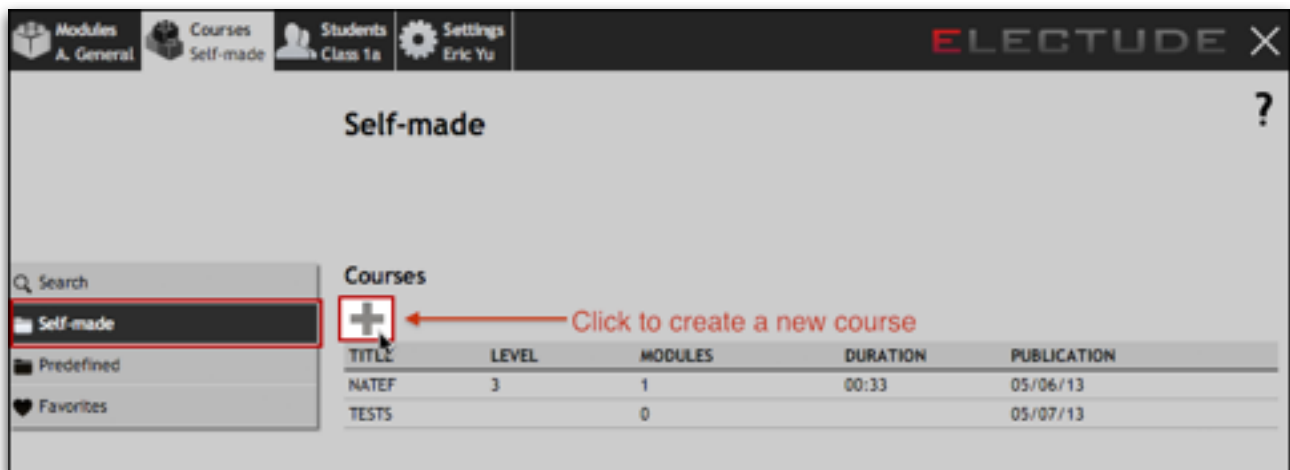
A course is an arrangement of modules. You can assemble a course yourself or use predefined courses. Modules appear in a course in a certain order. The student is free to use the modules in this order; he is not required to complete the modules in the defined order.

Courses can be nested, like folders in a tree on your computer. In a sub course you can add modules again.

Apart from a title, a course can also be given a description. This description appears for students as an introduction to the course.

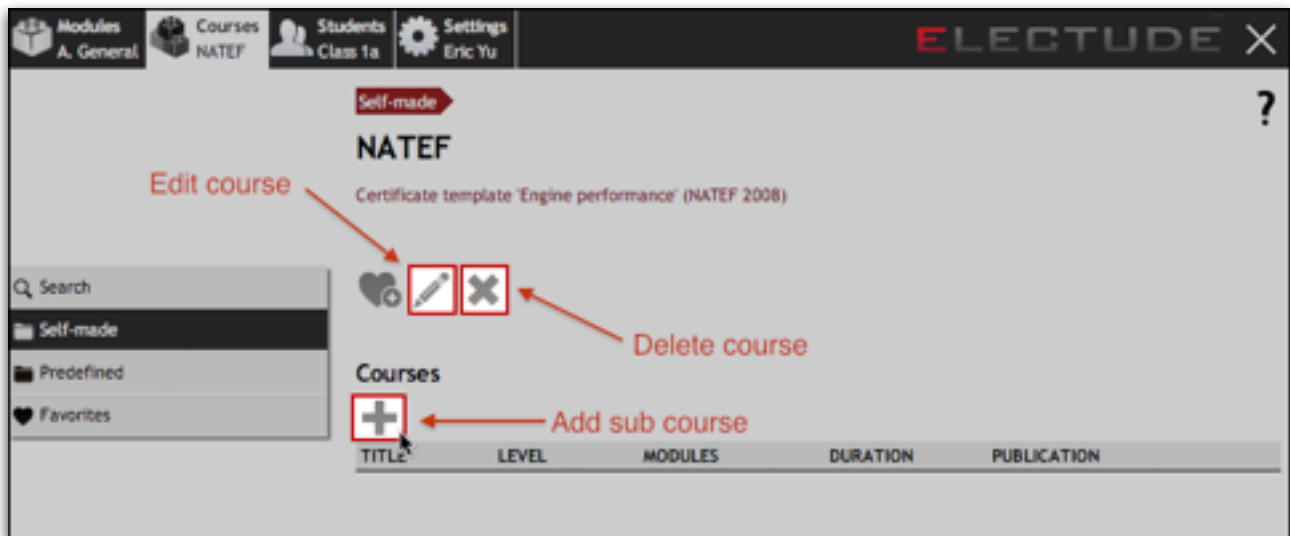
Creating a new course

To create a course, you first click on the tab 'courses' and select the folder 'Self-made' in the submenu on the left of the page. Then click the icon + 'New course'. Enter a title and description, select the desired level and click 'add'. In the table of self-made courses, the new course appears as the bottom row. Click on this new row in the table to navigate to the new course. On this page you can assign modules to the course (see Assigning modules to a course, a group or a student).




TITLE	LEVEL	MODULES	DURATION	PUBLICATION
NATEF	3	1	00:33	05/06/13
TESTS		0		05/07/13

If you want to add a sub course, you can also move a separate single course. To do so, select the course from the list at the top of the form and click 'add'. The existing course is moved and disappears as a separate course.



Editing a course

A course can be edited by navigating to the page of the course. Click the icon  'Edit course', to change the title, description or level of the course.

You can convert the sub course to a separate single course. For 'Part of' select the first option of the list. The course disappears as a sub course.

For more information on editing the arrangement of modules see Assigning modules to a course, a group or a student.

If you have the possibility to publish content to third parties, you can also select the product group the course should be in. The site administrator also administrates the product groups. When a course is placed in a product group, other Electude LMS users that have a license for that product group can access the course. You cannot change the product group of a sub course, it is always the same as the product group of the parent course.

When you change the product group of a course and you select the option 'Change the product group of linked modules too', all modules you created yourself that are linked to the course and its sub courses will be put in the same product group.


Note:

If you add modules to the course at a later point in time, these module will not automatically be put in the same product group as the parent course. The option applies only to modules that are currently linked.

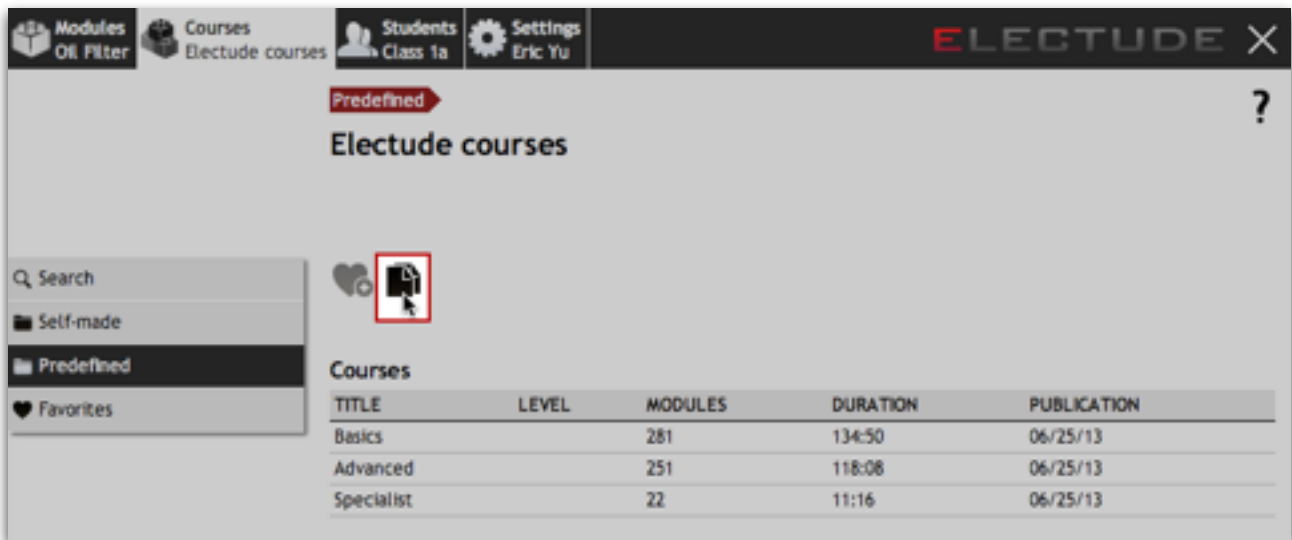
If a linked module already is in another product group, the product group of the module is not changed. A module can only be in one product group.

Copying a course


Copying a course

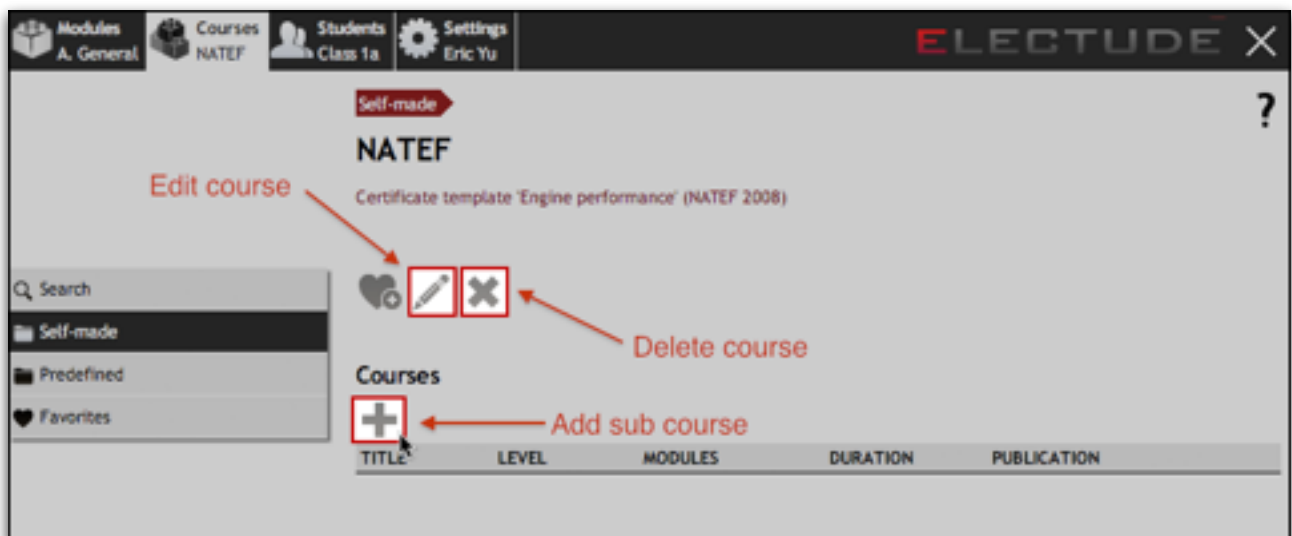
Both predefined as self-made courses can be copy entirely, by navigating to the page of the main course. Click the icon  'Copy course' and confirm. The new course is a self-made course that can be edited.

Any certificate templates are not copied, you can add one later.



Deleting a course

To delete a self-made course, navigate to the page of the course, click on the icon  'Delete course' and confirm your choice.

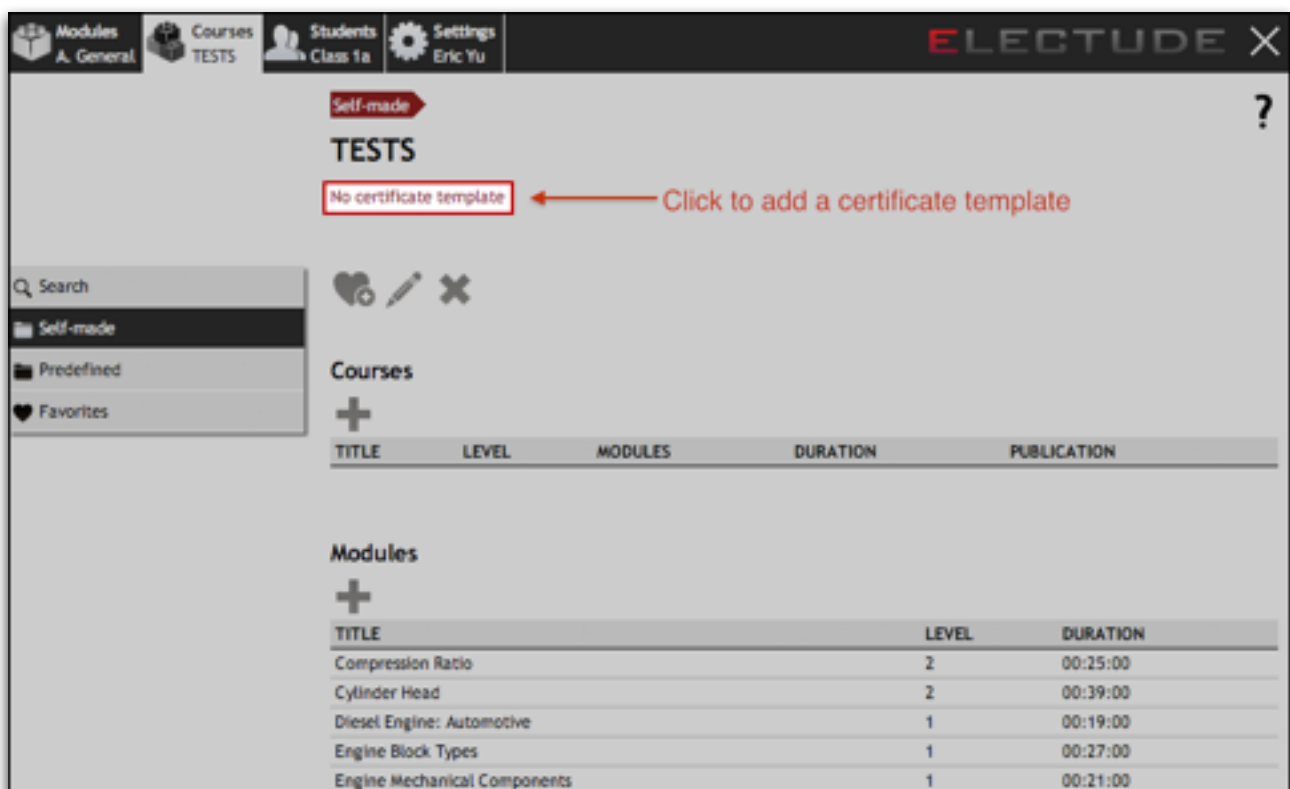


Note: if a course is deleted that is assigned to a student or group, the course disappears for the students. The results of the individual students for the modules that were part of the course are not deleted. Students can still access the lessons they previously finished under 'Old lessons'.

Adding, editing or deleting a certificate template

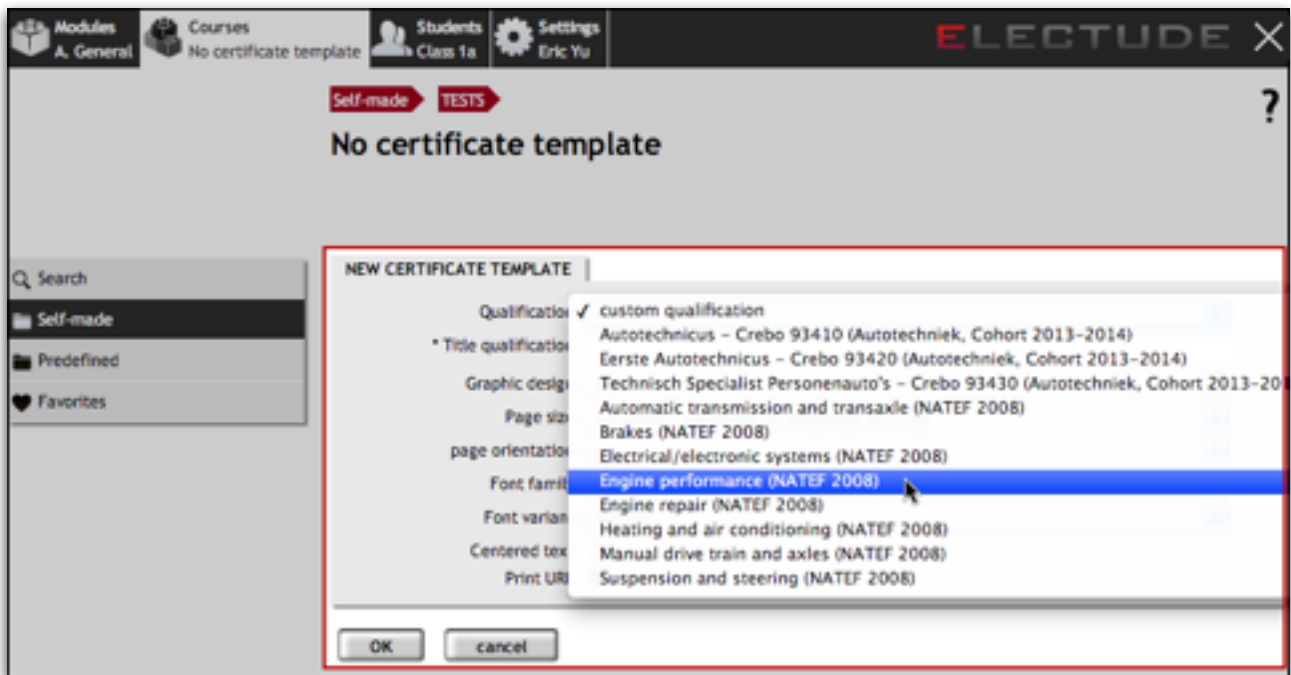
You can add a certificate template to a course. This allows you to grant certificates to students that have successfully completed the course. Teachers and students can open certificates as a PDF file.



Below the title of a new main course is a link 'No certificate template'. By clicking this link you go to the page where you can add a certificate template. Click the icon 'New certificate template'.



The screenshot shows the Electude interface. At the top, there is a navigation bar with icons for Modules, Courses, Students, and Settings. Below this, the 'TESTS' section is visible, with a 'Self-made' tag. A red box highlights the text 'No certificate template', and a red arrow points to it with the text 'Click to add a certificate template'. Below this, there are sections for 'Courses' and 'Modules'. The 'Courses' section has a '+' icon and a table with columns: TITLE, LEVEL, MODULES, DURATION, and PUBLICATION. The 'Modules' section has a '+' icon and a table with columns: TITLE, LEVEL, and DURATION.

TITLE	LEVEL	MODULES	DURATION	PUBLICATION
Compression Ratio	2		00:25:00	
Cylinder Head	2		00:39:00	
Diesel Engine: Automotive	1		00:19:00	
Engine Block Types	1		00:27:00	
Engine Mechanical Components	1		00:21:00	



When a certificate template already exists, it can be changed by clicking the icon  'Edit certificate template' or deleted by clicking the icon  'Delete certificate template'. When a template is deleted, all granted certificates still remain. The possibility to grant new certificates however, is removed.



Certificate template 'Engine performance' (NATEF 2008)

Self-made TESTS

Edit certificate template

Delete certificate template

Preview certificate template

All tasks by priority

	P-1	P-2	P-3
TOTAL	39	12	7
REQUIRED	37 (95%)	9 (80%)	3 (50%)
LINKED IN THE COURSE	0 (0%)	0 (0%)	0 (0%)

VIII. ENGINE PERFORMANCE

VIII.A. General Engine Diagnosis

NAME	DESCRIPTION	PRIORITY	MODULE
1.	Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction.	P-1	
2.	Identify and interpret engine performance concern; determine necessary action.	P-1	
3.	Research applicable vehicle and service information, such as engine management system operation, vehicle service history, service precautions, and technical service bulletins.	P-1	
4.	Locate and interpret vehicle and major component identification numbers	P-1	
5.	Inspect engine assembly for fuel, oil, coolant, and other leaks; determine necessary action.	P-2	
6.	Diagnose abnormal engine noise or vibration concerns; determine necessary action.	P-3	
7.	Diagnose abnormal exhaust color, odor, and sound; determine necessary action.	P-2	
8.	Perform engine absolute (vacuum/boost) manifold pressure tests; determine necessary action.	P-1	

A certificate is associated with a qualification. You can choose between a predefined qualification or a custom qualification of which you can enter the title yourself. After the template has been created, you cannot change the qualification.

You cannot add a certificate template to a predefined course. If such a course already has a certificate template you can however change the design.

Predefined qualifications

For predefined qualifications students usually have to meet certain formal requirements. These requirements are called performance indicators in Electude LMS. The performance indicators of a qualification can be linked to modules that are contained in the course, as soon as the certificate template is added. On the page of the certificate template an overview of all these links is shown. For more information see Linking performance indicators.

After the course has been assigned, teachers can grade the performance of students by performance indicator. This way a detailed overview of a qualification arises for every student. By means of this overview the teacher can see if the student is eligible for a certificate. For more information see Certificates.

Default certificate design

In the default design you can set the page size, page orientation, font family and font variant. You can also decide to have all text centred and to include the URL of the certificate in the document. The URL is a unique identifier and therefore suitable to check the validity of a certificate.

Some fonts are not available certain languages (such as Chinese, Thai, Arabic and Hebrew), because the language contains characters that are not supported by the font. In that case automatically another, similar font is used.

In the default design you can have an automatic page size, which means that the page size depends on the language setting of the user: 'Letter' is used for US English and Canadian French, 'A4' for all other languages.

After creation of the template you can open a sample PDF file by clicking the 'Preview certificate template' button. All dynamic text fields that are filled in after the certificate is issued, are shown in the sample inside a box.

Custom certificate design

When you choose to have a custom design, you can upload a PDF file with your own design that is used as a background for the certificate. You can set the font size, vertical position and horizontal margins of the dynamic text fields that are set over the background. Static text fields that are included in the default design, are not included in the custom design. This way you can use any position and style in the PDF file, for texts such as the name of the organization and qualification.

EDIT CERTIFICATE TEMPLATE

Graphic design: custom

Page size: A4

page orientation: portrait

Font family: DejaVu Sans

Font variant: default

Centered text:

General font size: 12pt

Font size name student: 18pt

Background (PDF file): (Max. 5 MB)

Distance in mm from top to:

Student name: 80

Student address: 90

Date and place of birth: 97

Remarks: 130

Date and place: 217

Student signature: 232

Teacher signature: 232

URL: 271

Margins left - right in mm:

General	25	25
Student signature	25	115
Teacher signature	115	25

Print URL:

OK cancel

When a dynamic text field is not desired in the design, it can be removed by making the vertical distance so big (e.g. 300mm) that the field is positioned outside the paper.

Link performance indicators

After a certificate template with a predefined qualification is added to a course, modules inside that course can be linked to performance indicators of the qualification. First click the module inside the course. On the page an overview of performance indicators that are already linked are shown. Here you click on the icon + 'Add performance indicator'. Select the desired performance indicator and click 'add'. To remove a linked performance indicator, you click on the icon ✖ in the table.

Self-made TESTS

Module Compression Ratio

Search

- Self-made
- Predefined
- Favorites

Start module

Performance indicators

+ Click to link performance indicator(s)

NAME	DESCRIPTION
------	-------------

Self-made TESTS

Module Compression Ratio

Search

- Self-made
- Predefined
- Favorites

Start module

Performance indicators

ADD PERFORMANCE INDICATOR

Performance Indicator VIII.A.1. Complete work order to include customer information, vehicle id: [v]

add cancel Click to delete linked performance indicator

NAME	DESCRIPTION
VIII.A.1.	Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction.

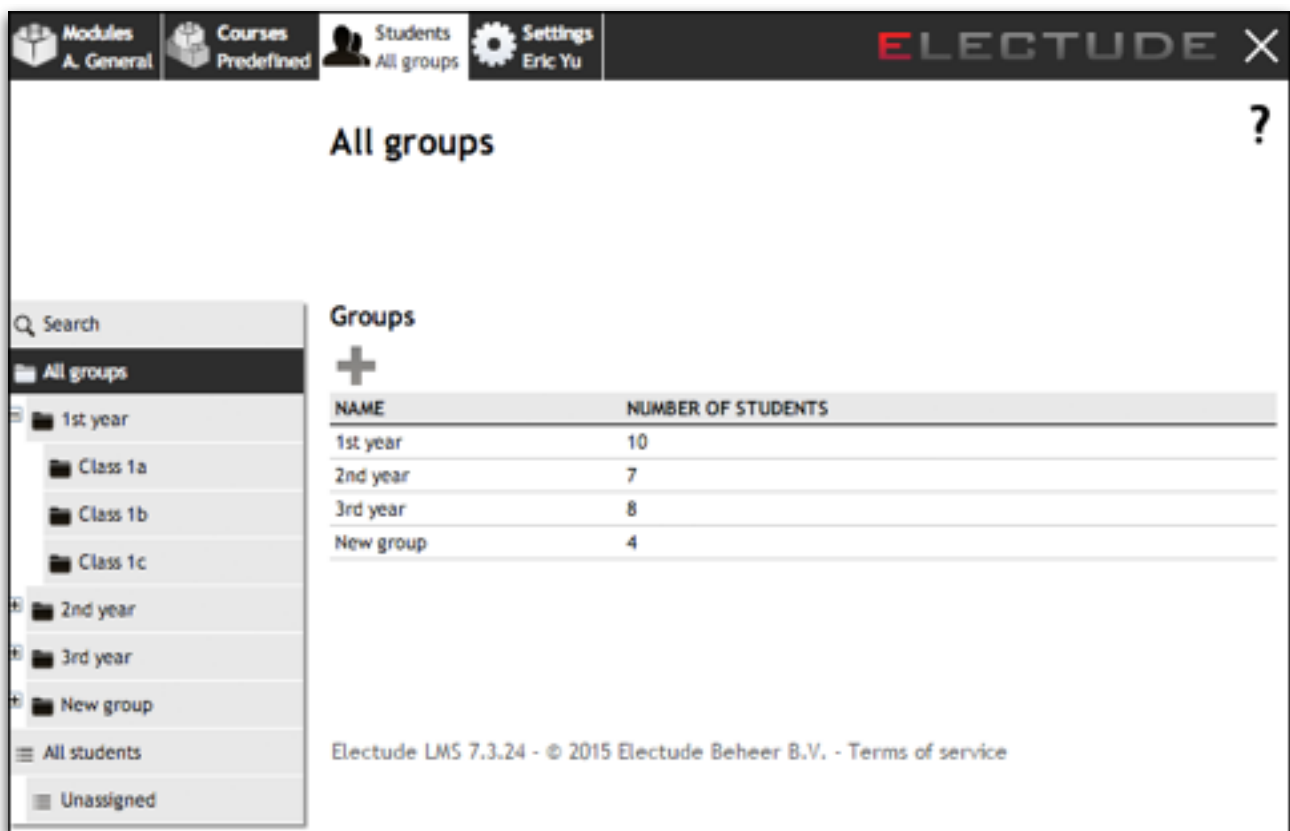
Student management - Students and groups

Student management - Students and groups

In the LMS you administer the accounts of the students yourself. Students may be members of different groups. You can arrange these groups yourself. Groups can be nested, like folders in a tree on your computer

When you select 'students' from the main menu, the group tree is shown in the submenu on the left. The group tree can be expanded and collapsed with the plus and minus icons.

If you have permissions to see all student groups, you have an option to see a list of 'All students'. Students that are not a member of any group can be found in the list 'Unassigned'.



The screenshot shows the 'All groups' page in the Electude LMS. The top navigation bar includes 'Modules A. General', 'Courses Predefined', 'Students All groups', and 'Settings Eric Yu'. The main content area is titled 'All groups' and features a search bar, a group tree on the left, and a table of groups with their student counts.

NAME	NUMBER OF STUDENTS
1st year	10
2nd year	7
3rd year	8
New group	4

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Modules A. General | Courses Predefined | Students All students | Settings Eric Yu | ELECTUDE X

All students ?

Q Search

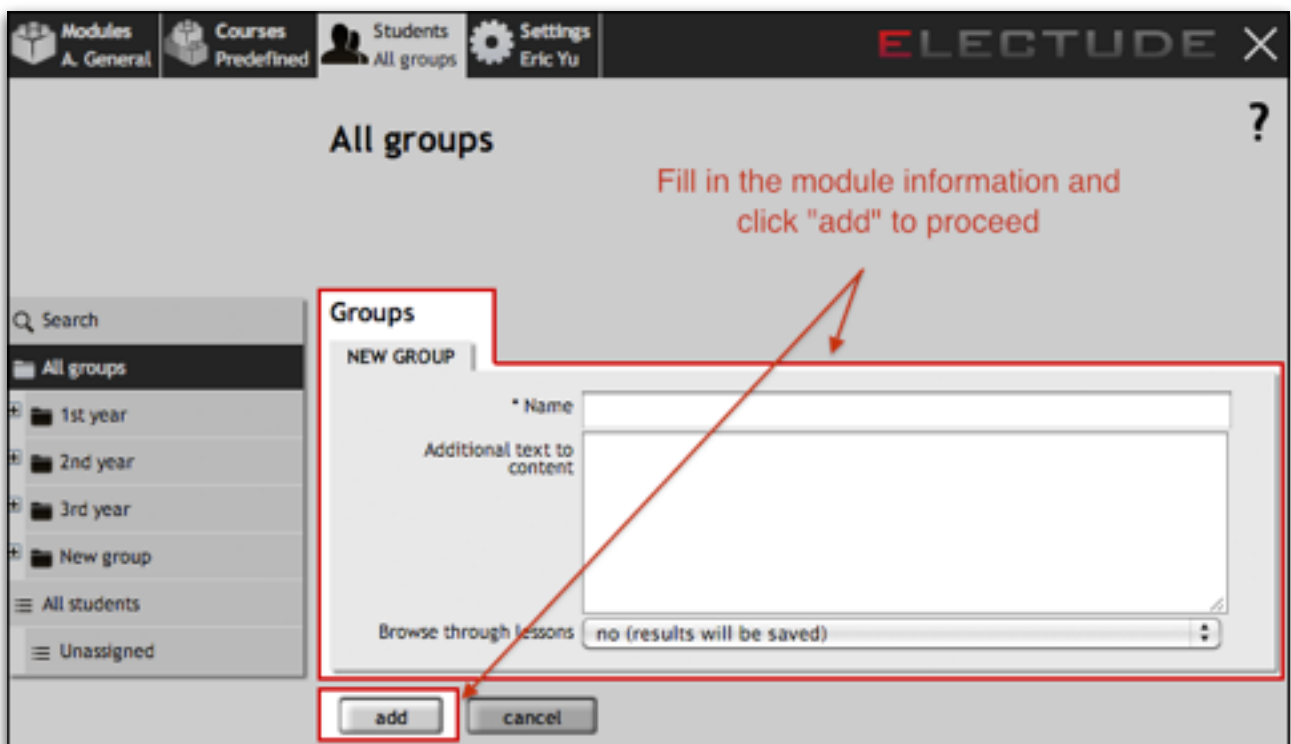
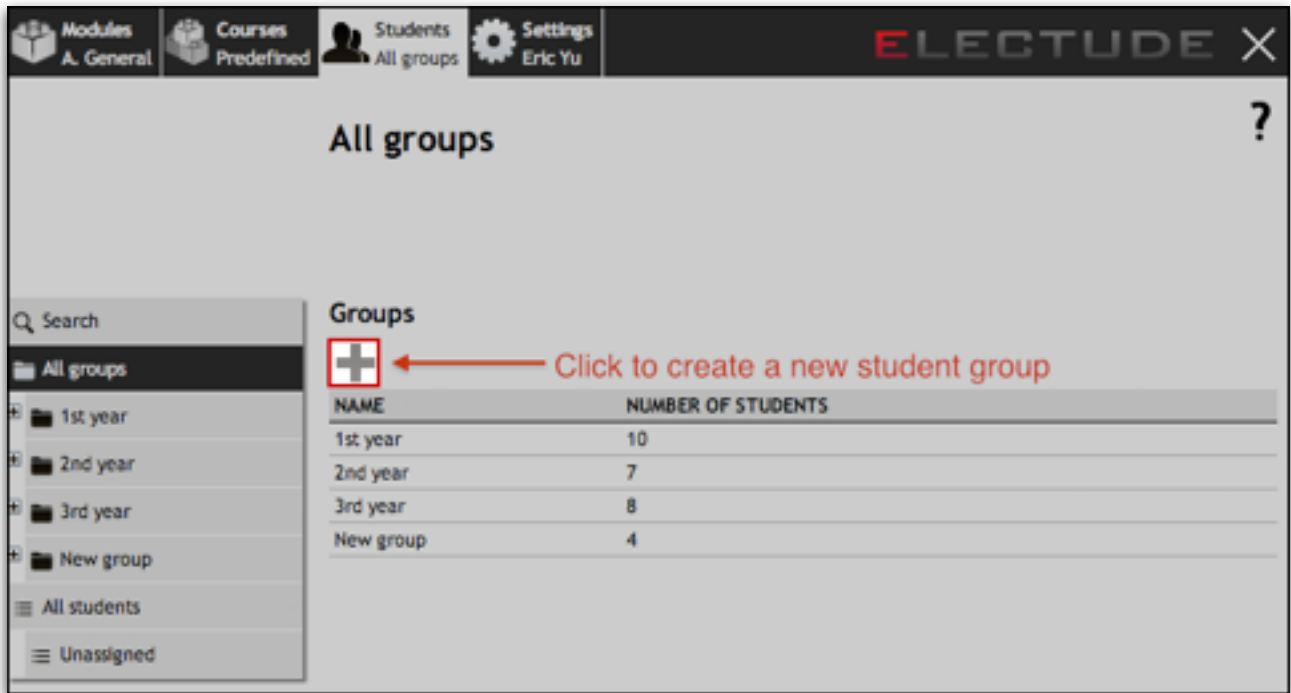
- All groups
- 1st year
- 2nd year
- 3rd year
- New group
- All students**
- Unassigned

Students


FIRST NAME	LAST NAME
Alexander	Clark
Andrew	Johnson
Ashley	Anderson
Brooke	Turner
Christian	Lee
Connor	Nelson
Dylan	Moore
Emily	López
Emma	Williams
Eric	Roberts
Ethan	Brown
Gavin	Campbell
Hannah	Davis
Hunter	Baker
Jack	Hill
Jessica	Adams
John	Harris

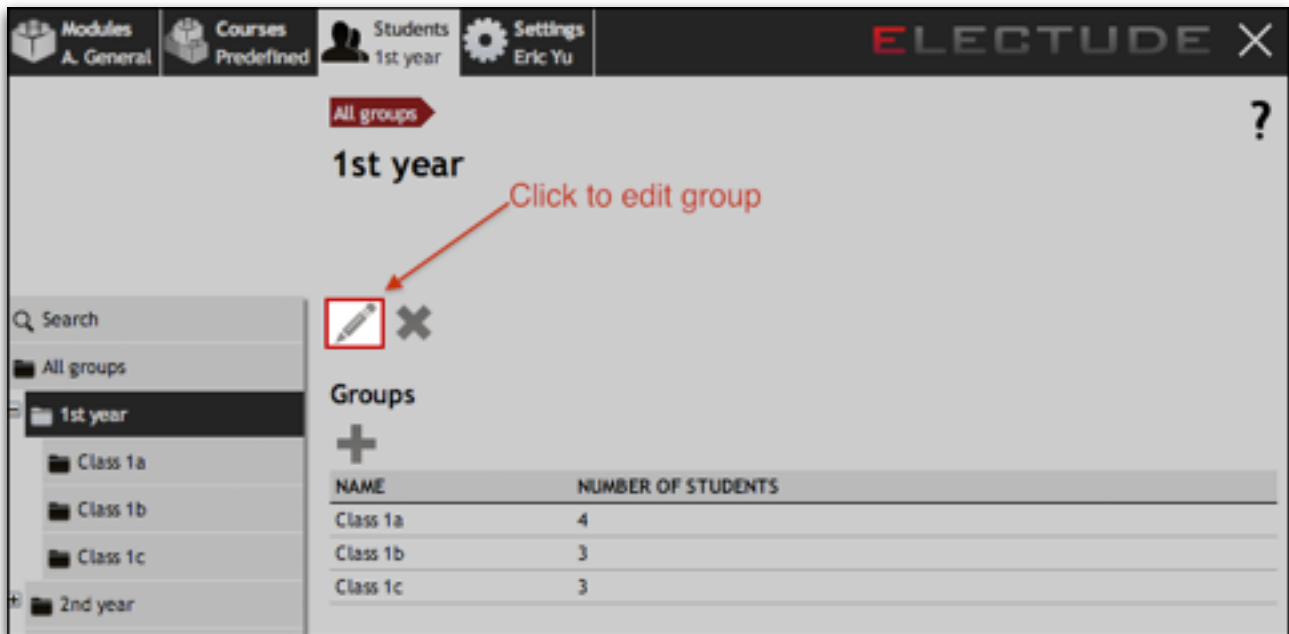
Creating a group

First select a group from the menu on the left, under the tab 'students'. Then click the icon + 'New group'. Enter a name and, if required, a text that the students in the group will see when they view the content. Choose 'no' for 'Browse through lessons' if the student is required to answer all the questions and you wish to monitor the results. Only select 'yes' if you want the student to be able to 'browse' though the lessons (like a teacher). In this case no progress or time spent is logged. Click 'add' to create the group. In the table of groups the new group appears as the bottom row.




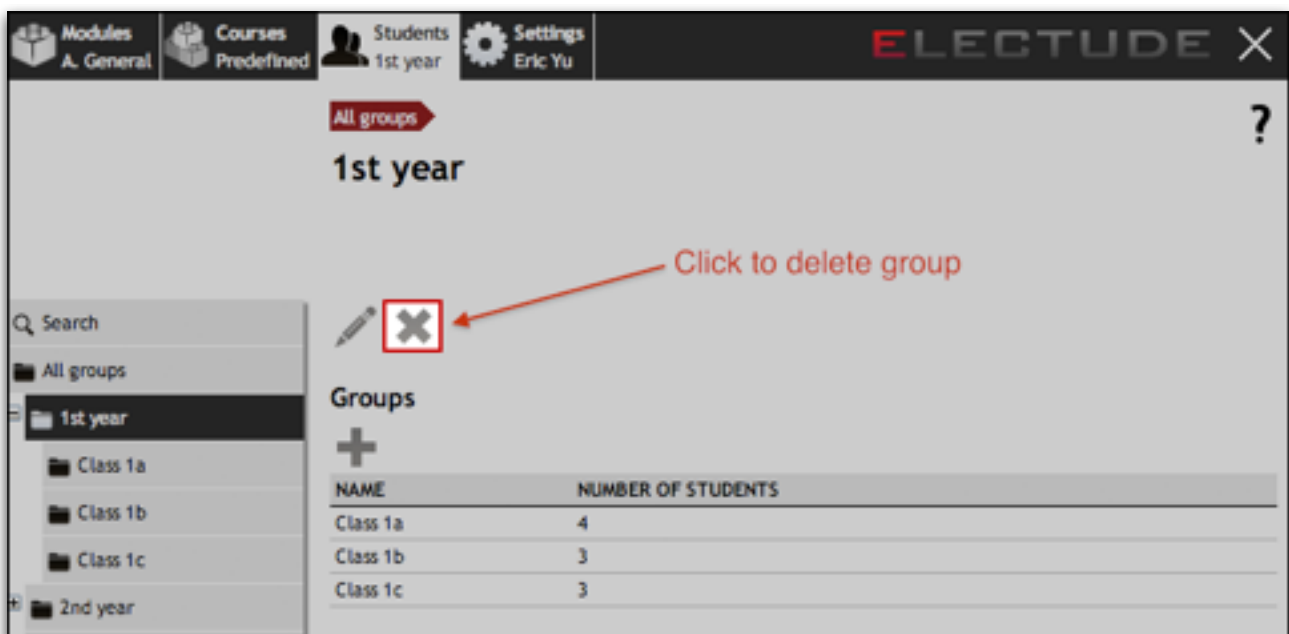
Editing a group

A group can be edited, by navigating to the page of the group. Click on the  'Edit group' icon to edit the name or text for group content. The setting to score student content can also be changed. By selecting 'yes' student results will be scored and tracked. By selecting 'no', students are free to browse content (like a teacher) and no results will be scored. Click 'OK' to confirm setting.



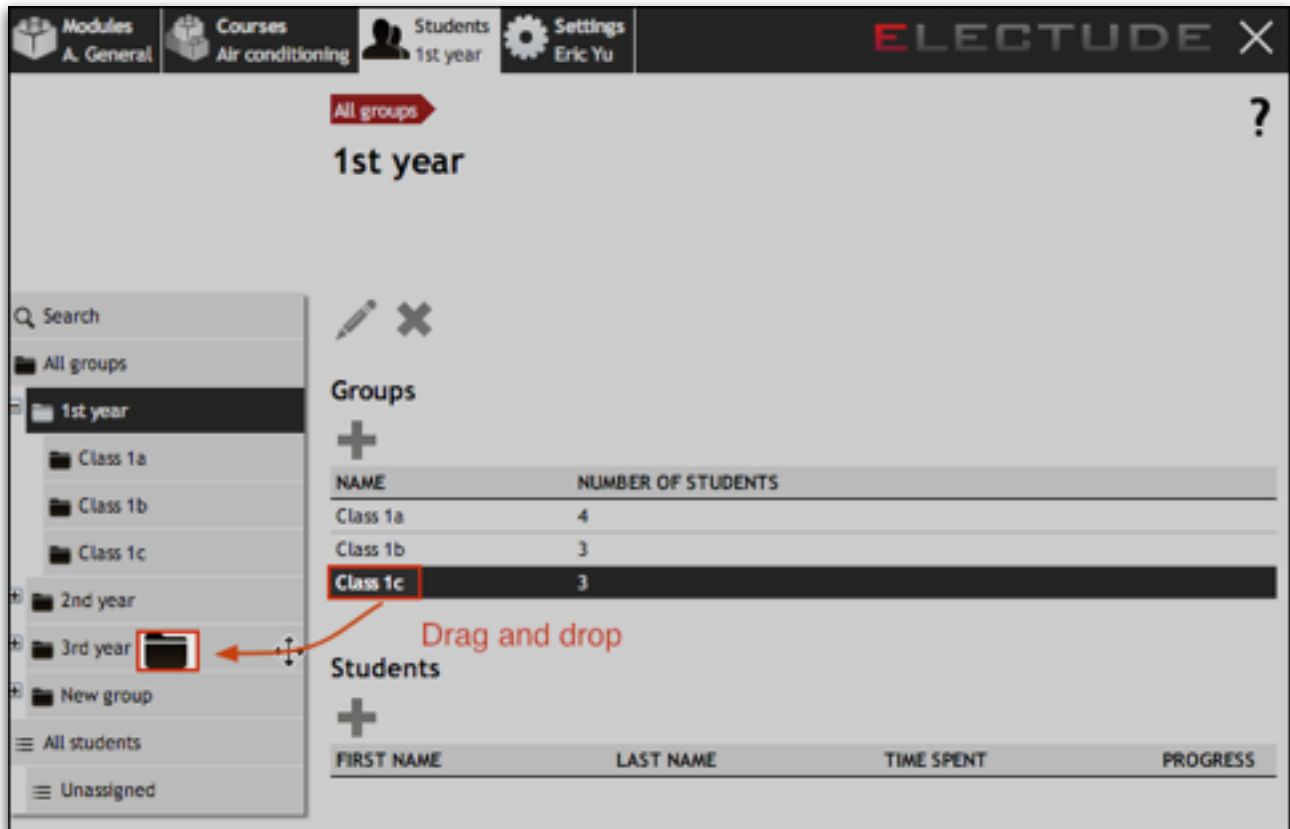
Deleting a group

A group can be deleted by navigating to the group's page. Click on the  'Delete group' icon and confirm the option. Groups that contain subgroups cannot be deleted.



Moving a group

To move a group to another group, first navigate to the page of the parent group the group is currently in. Drag the group from the table (keep the mouse button pressed) to the new group in the submenu on the left. Release the mouse button above this group.



The screenshot shows the Electude interface with the following elements:

- Top navigation bar: Modules (A. General), Courses (Air conditioning), Students (1st year), Settings (Eric Yu), and the ELECTUDE logo.
- Main header: All groups (with a red arrow pointing right), 1st year, and a help icon (?).
- Left sidebar: Search, All groups, 1st year (selected), Class 1a, Class 1b, Class 1c, 2nd year, 3rd year (highlighted with a red box), New group, All students, and Unassigned.
- Groups table:

NAME	NUMBER OF STUDENTS
Class 1a	4
Class 1b	3
Class 1c	3
- Students table:

FIRST NAME	LAST NAME	TIME SPENT	PROGRESS
------------	-----------	------------	----------

A red arrow points from the 'Class 1c' row in the Groups table to the '3rd year' group in the sidebar, with the text "Drag and drop" next to it.

Creating a student account

First navigate to the group in which you want the student account to be placed. Click the icon + 'New student'. In addition to the first name and last name of the student, you need to enter a username and a valid email address. The username is case sensitive and has to be unique: no two students with the same username can exist.

The screenshot shows the 'Students' section for 'Class 1a'. A red box highlights a plus sign icon with an arrow pointing to it and the text 'Click to add a new student account'. Below the icon is a table of existing students:

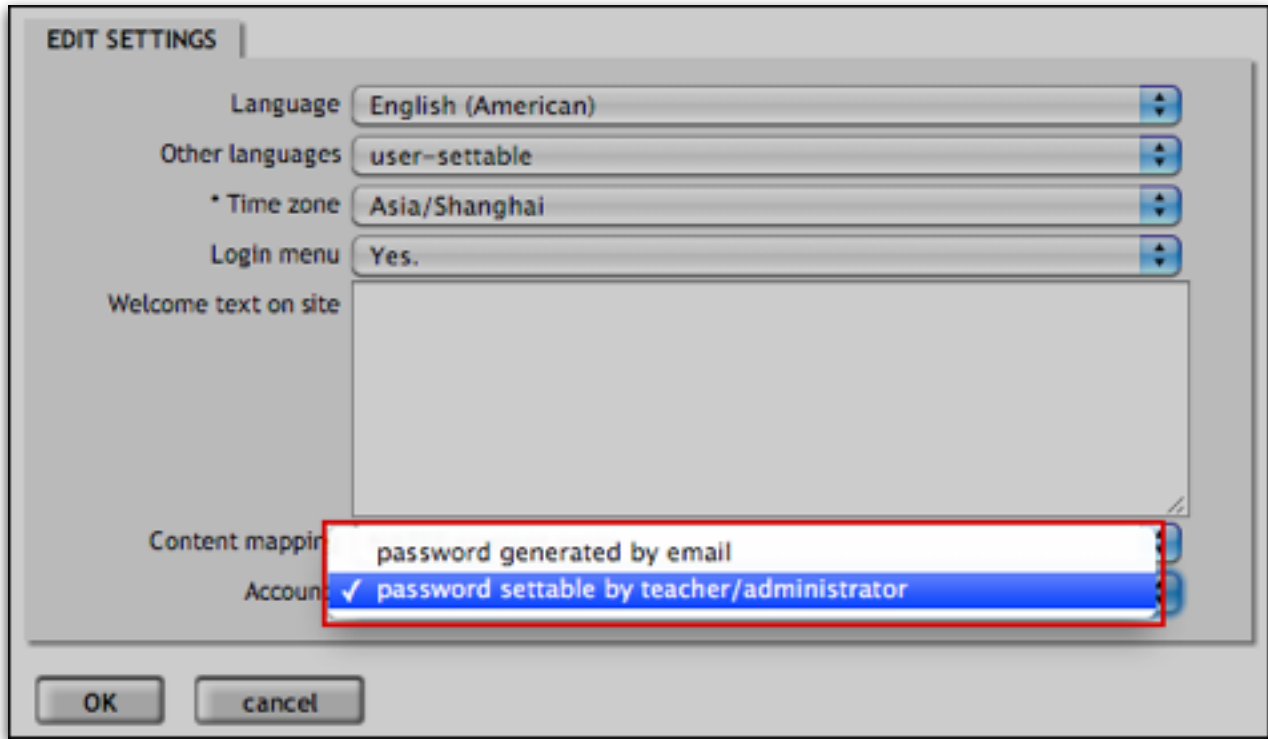
FIRST NAME	LAST NAME	TIME SPENT	PROGRESS
Andrew	Johnson	02:09:55	<div style="width: 20%;"></div>
Emma	Williams	01:29:43	<div style="width: 15%;"></div>
Ryan	Garcia	00:58:00	<div style="width: 10%;"></div>
Tom	Clark	04:04:47	<div style="width: 25%;"></div>

The screenshot shows the 'NEW STUDENT' form. The form is highlighted with a red border and contains the following fields:

- * Username
- * First name
- * Last name
- * Email address
- Phone
- Mobile phone
- Address
- Zip code
- City
- Date of birth
- Place of birth
- * New password
- * Repeat password

At the bottom of the form are two buttons: 'add' and 'cancel'.

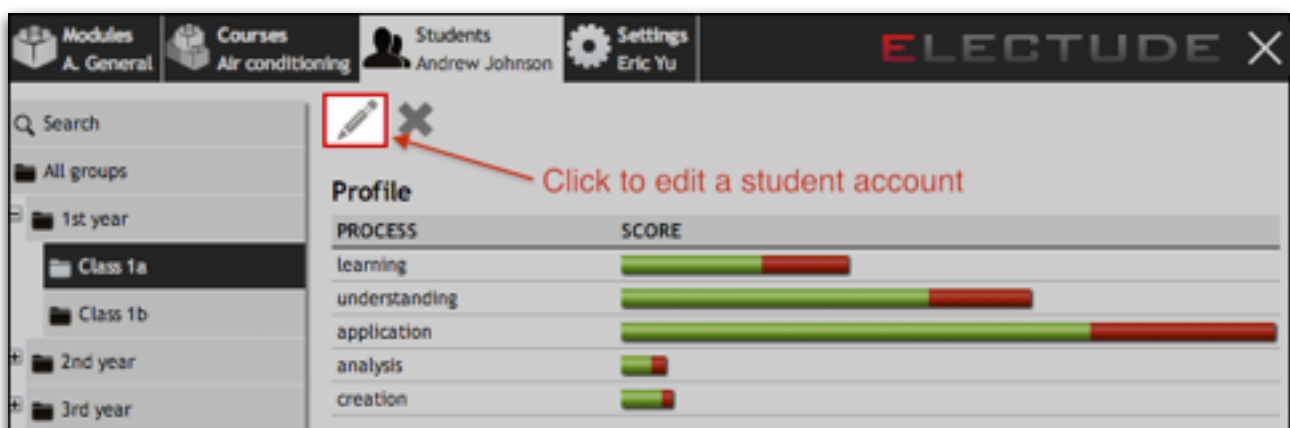
If the administrator has configured the website to send the account details by email, a message will appear. In this case the LMS generates a password and the student receives his account details instantaneously by email. You cannot edit the password of the student as a teacher. When the student has forgotten his password, he can request a new password from the website.



If the administrator has configured the website not to send the account details by email, you will have to choose a password for the student. This password needs to be entered twice. You have to provide the student with the account details yourself; the LMS does not do this.

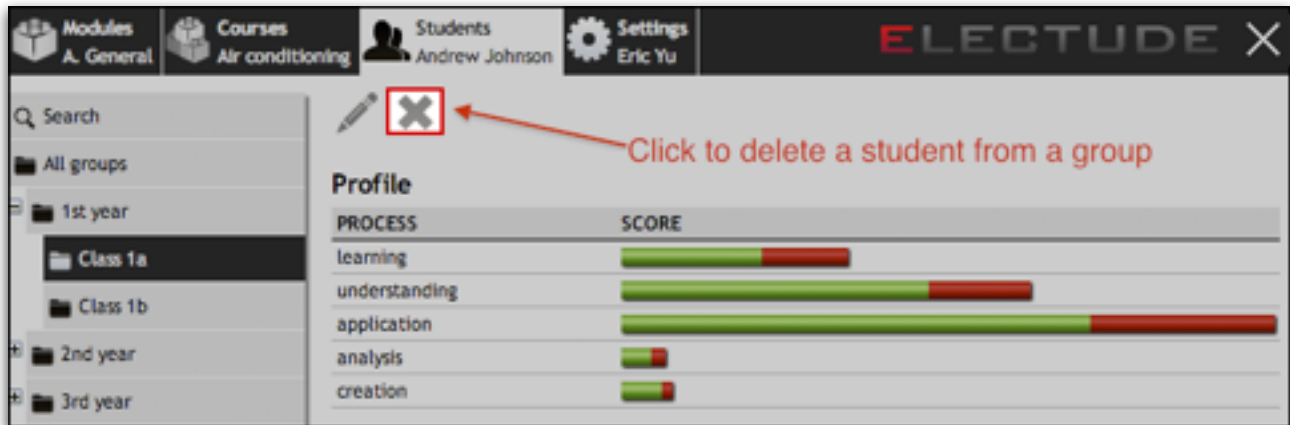
Editing a student account

The account of a student can be edited by navigating to the page of the student. Click the icon / 'Edit student' and edit the desired fields. Click 'ok' to confirm.



Deleting a student from a group

The account of a student can be deleted from a group by navigating to the page of the student, clicking on the icon ✕ 'Delete student' and confirming the option.



The screenshot shows the Electude interface with a student profile for Andrew Johnson. The top navigation bar includes Modules (A. General), Courses (Air conditioning), Students (Andrew Johnson), and Settings (Eric Yu). The left sidebar shows a search bar and a tree view of groups: All groups, 1st year (Class 1a, Class 1b), 2nd year, and 3rd year. The main content area displays the student's profile with a 'Delete student' icon (✕) highlighted by a red box and a red arrow. Below the profile is a table showing the student's performance across various processes.

PROCESS	SCORE
learning	<div style="width: 60%;"><div style="background-color: green; width: 60%;"></div><div style="background-color: red; width: 40%;"></div></div>
understanding	<div style="width: 80%;"><div style="background-color: green; width: 80%;"></div><div style="background-color: red; width: 20%;"></div></div>
application	<div style="width: 100%;"><div style="background-color: green; width: 100%;"></div><div style="background-color: red; width: 0%;"></div></div>
analysis	<div style="width: 20%;"><div style="background-color: green; width: 20%;"></div><div style="background-color: red; width: 80%;"></div></div>
creation	<div style="width: 20%;"><div style="background-color: green; width: 20%;"></div><div style="background-color: red; width: 80%;"></div></div>

The account is not permanently deleted. When the student is deleted from all groups, the student account can be found in the list of Unassigned students. Only the administrator can delete student accounts permanently.

A student can be added back to a group from the list of unassigned students.

Adding a student to another group

To add a student to another group, first navigate to the page of the group the student is currently in. Drag the student from the table (keep the mouse button pressed) to the new group in the submenu on the left. Release the mouse button above this group.

The screenshot shows the Electude interface with a sidebar on the left and a main content area. The sidebar contains a search bar and a tree view of groups: 'All groups', '1st year' (with sub-items 'Class 1a' and 'Class 1b'), '2nd year' (highlighted with a red box and a person icon), '3rd year', 'New group', 'All students', and 'Unassigned'. The main content area has a top navigation bar with 'Modules A. General', 'Courses Air conditioning', 'Students Class 1a', and 'Settings Eric Yu'. Below this, there are 'Groups' and 'Students' sections. The 'Groups' section has a '+' icon and a table with columns 'NAME' and 'NUMBER OF STUDENTS'. The 'Students' section has a '+' icon, a red instruction 'Drag student to target group and drop', and a table with columns 'FIRST NAME', 'LAST NAME', 'TIME SPENT', and 'PROGRESS'. The 'Students' table lists: Andrew Johnson (02:09:55), Emma Williams (01:29:43), Ryan Garcia (00:58:00), and Tom Clark (04:04:47). The 'Tom Clark' row is highlighted with a red box. A red arrow points from the person icon in the '2nd year' group to the 'Tom Clark' row.


When the student is dragged like this from the list of unassigned students, the student will disappear from the list. This is because the student has become a member of a group.

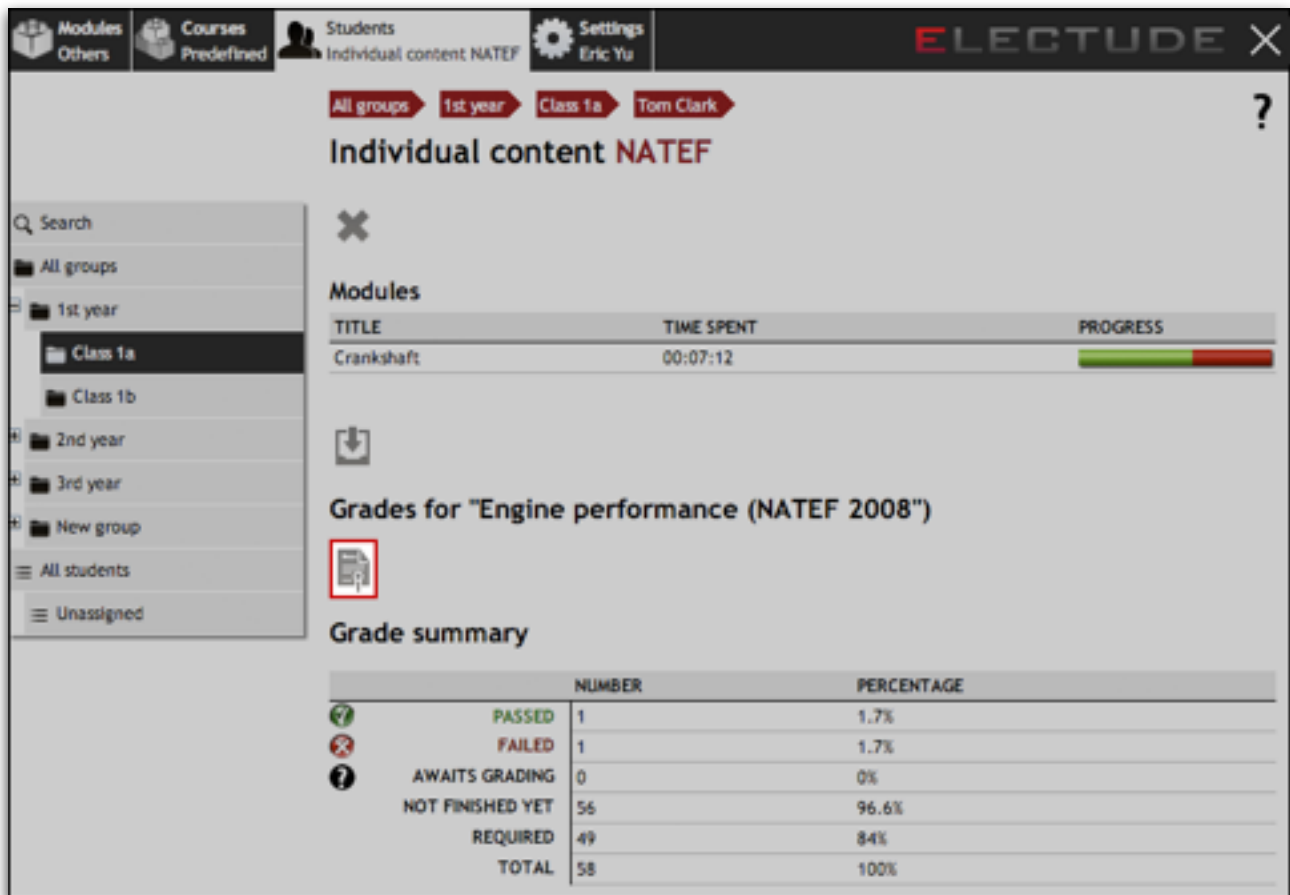
To move a student to another group, you first have to add the student to the other group. Then delete the student from the current group.

Certificates

With certificates you can specify student performance on a course level. When the student has access to a course with a certificate template (see Adding, editing or deleting a certificate template), the page with his individual results contains a table with (potential) certificates. By clicking a row in this table you go to the overview page of the certificate and the associated qualification.

Granting a certificate





Click  'Grant certificate' and enter the date of issue. Optional you can specify a place of issue and remarks, these will then be included in the certificate.



The screenshot shows the 'Individual content NATEF' page for student Tom Clark. The page includes a navigation menu on the left with options like 'All groups', '1st year', 'Class 1a', 'Class 1b', '2nd year', '3rd year', 'New group', 'All students', and 'Unassigned'. The main content area shows a table of modules with the following data:

TITLE	TIME SPENT	PROGRESS
Crankshaft	00:07:12	<div style="width: 100%; height: 10px; background-color: #4CAF50;"></div>

Below the table, there is a section for 'Grades for "Engine performance (NATEF 2008)"' with a 'Grant certificate' icon highlighted in a red box. A 'Grade summary' table is also visible at the bottom:

	NUMBER	PERCENTAGE
 PASSED	1	1.7%
 FAILED	1	1.7%
 AWAITS GRADING	0	0%
 NOT FINISHED YET	56	96.6%
REQUIRED	49	84%
TOTAL	58	100%

Predefined qualifications and performance indicators


For predefined qualifications students usually have to meet certain formal requirements. These requirements are called performance indicators in Electude LMS. The performance indicators of a qualification can be linked to modules that are contained in the course, as soon as the certificate template is added. On the page of the certificate template an overview of all these links is shown. For more information see Linking performance indicators.

Performance indicators may be graded several times. In the reporting the last grade of a performance indicator is leading.


In the summary of scores you can see in the table how many performance indicators:

- passed (graded as such by a teacher)
- failed (graded as such by a teacher)
- may be graded because the corresponding module was finished
- cannot be graded yet because the corresponding module is not finished yet.
- are inside the qualification in total

When performances can be evaluated with more than 2 grades, additionally you will see a table with the distribution of grades in histogram format.

In the overview table 'All grades' you can see the structure of the qualification with all performance indicators. By clicking a row in this table it is expanded. The row is collapsed when the row is clicked once more. All rows can be expanded by clicking the icon  "Expand table".

When a row is empty, it means no module(s) linked to the performance indicator has (have) been finished.

When a row is expanded, the description of the performance indicator is visible. Any old grades will be visible as well (striked through). You can add grades by clicking the icon  'New grade' after the name of the module. You then go to the page with the results of the module.

When a certificate has been issued the icon to add new grades disappears from the table. Any grades on performance indicators that were added after the date of issue are not shown in the table.

Grading a performance indicator

To grade a performance indicator, you first have to navigate to the results of the linked module, starting from the overview table of the qualification or the page with Individual course results. Then click on the icon 'New grade'. Select a performance indicator and choose the corresponding grade. Optionally you can add remarks. Click 'add' to confirm. You can repeat this process when several performance indicators are linked to a module.

All linked performance indicators can be graded in one shortcut action with the same grade, by selecting 'All performance indicators' from the list.

You can also quickly grade performance indicators by navigating through the 'to be graded' table at the bottom of the page with group results. This table contains all finished modules in the course with linked performance indicators that have not yet been graded. By clicking a line, you can add a grade.

Note: a grade cannot be deleted. Since the last grade is always leading in the reporting, you can however to 'overwrite' a grade by adding a new one.

Settings

Account settings

You can edit your personal settings under the tab 'settings'. You can change your personal information. If the administrator of the site allows it, you can select a different language. When you create student accounts, these are automatically created in the same language in which you are currently working.

You can also change your password. You need to enter a new password twice.

The screenshot shows the 'Settings' interface for a user named Eric Yu. The top navigation bar includes 'Modules Others', 'Courses Certificate template Engine perform', 'Students Individual content NATEP', and 'Settings Eric Yu' (highlighted with a red box). The main content area is titled 'Account' and has a sidebar with 'Account' and 'Import & export'. The 'EDIT DETAILS' section contains the following fields:

- * First name: Eric
- * Last name: Yu
- * Email address: eric.yu@electude.com
- Phone: [empty]
- Mobile phone: [empty]
- Address: [empty]
- Zip code: [empty]
- City: [empty]
- Date of birth: [empty]
- Place of birth: [empty]
- Receive feedback: Yes (dropdown)
- Language: English (American) (dropdown)
- * Time zone: Asia/Shanghai (dropdown)

Below the 'EDIT DETAILS' section are 'OK' and 'cancel' buttons. The 'EDIT PASSWORD' section contains:

- * New password: [empty]
- * Repeat password: [empty]

Below the 'EDIT PASSWORD' section are 'OK' and 'cancel' buttons.

Note: you cannot edit your username. Your username and your password are both case sensitive.

If you wish to receive feedback from students, your name appears in the list of teachers that can receive feedback. Students can comment in modules by clicking the comment button below each question. The student selects the teacher that receives the comment from the list.

Rights

At the bottom of the settings page your rights are displayed. Only the administrator can edit your rights. The functionality described in this manual may not be fully available to you, since you do not have the rights to do certain operations.

The rights of teachers are grouped as follows:

- Editing students and groups:
 - Creating a group
 - Editing a group
 - Deleting a group
 - Moving a group
 - Creating a student account
 - Editing a student account
 - Deleting a student from a group
 - Adding a student to another group
 - Editing content:
 - Adding a module
 - Editing a module
 - Deleting a module
 - Creating a course
 - Editing a course
 - Assigning modules to a course
 - Deleting a course
 - Adding, editing or deleting a certificate template
 - Link performance indicators
 - Assigning content:
 - Assigning (or removing) modules to a group or a student
 - Assigning (or removing) courses to a group or a student
 - Grant a student or group access to tests
 - Delete an individual result of a module
 - Edit the evaluation of a test (or delete it)
 - View modules:
 - Start and use a module
 - Grade performances
 - Assign a grade to performance indicators for the individual results of a module
 - Grant certificates:
 - Grant a course certificate to a student
 - Delete certificates:
-

- Delete a certificate that has been granted to a student.

A screenshot of a user rights configuration panel. It features several dropdown menus for setting permissions. The 'Receive feedback' dropdown is set to 'Yes.'. The 'Rights' section includes dropdowns for 'Can edit students and groups', 'Can edit content', 'Can assign content', 'Can view modules', 'Can grade performances', and 'Can grant certificates'. The 'Access to' dropdown is set to 'All groups'.

Import and export settings

For the export of data you can select a file format. These file formats are available:

- [CSV file](#)
- .xls file (Excel 5)
- .xlsx file (Excel 2007)

Files that contain more than 2000 lines are always exported as CSV file.

A screenshot of the 'Import & export' settings page in the Electude interface. The page title is 'Import & export'. On the left, a sidebar menu has 'Import & export' selected. The main content area is titled 'EDIT SETTINGS' and contains a dropdown menu for 'Export format' with 'CSV' selected. Below this, there is a list of fields with checkboxes, all of which are checked. The fields are: First name, Last name, Email address, Group, Course, Module, Title, Type, Level, Weight, Status, Progress, Relative progress, and Score.

You can also specify what fields (columns) need to be added to the file.

Logging out

The button to log out of the LMS is as the top on the right.

