Executive summary

As a result of the global pandemic, the College has undertaken a transformation programme that will significantly change the way teaching, learning, and assessment will be delivered from September 2020. A new Flexible Learning Model has been developed by the College and was launched at the Teaching and Learning Symposium on 2 June 2020.

Here we outline the Teaching and Learning Tools Suite that will be available by the start of academic year 20/21 to support the delivery of flexible education here at Royal Holloway. As technology is continuously evolving, some of the final versions you encounter at the start of term may differ slightly, but the broad set of capabilities available in your digital and on campus classrooms will be comprised of the following:

- Upgraded and new functionality in Moodle.
- Class Teams in Microsoft Teams for teaching and learning.
- Class Teams and Moodle integration with Skooler.
- Windows Virtual Desktop (WVD) for specialist software.
- Audio Visual equipment available in teaching and learning spaces.
- Lecture recording for flexible education.
- New accessibility tools.
- EditShare for Media Arts assessments.

You can also find here a Teaching and Learning Tools Suite roadmap of when each of the above will be delivered and available to users.

If you have any questions about this Teaching and Learning Tools Suite, please raise them in the first instance at your School E-Learning group or Support Services meetings. Each has a representative who will, if required, escalate your queries.

Any updates to this information on the Teaching and Learning Tools Suite will be found on the Flexible Education Hub.

Upgraded and New Functionality in Moodle

Upgrade to Moodle Environment (3.8.4)

*Delivery Date: June 2 2020 upgraded to 3.8.3; July 23 to 3.8.4*

During this summer, IT Services rolled over and upgraded Moodle to version 3.8.4. The new version of Moodle provides several fixes for issues with previous versions as well as new functionality. Please see the Moodle HQ video [Moodle 3.8 Overview](#).

The following 3.8.4 features are currently available in our Moodle environment:

**For staff with course editing permission:**

1. New forum functionality:
   a. Mark and provide feedback on discussion forum posts using rubrics or marking guides.
b. View a detailed summary report of student discussion forum activity, filter by date and/or groups, and export in CSV format.

2. Create embedded H5P activities for interactive and engaging learning and assessment activities.

3. In question banks for quizzes, view question ID numbers and tags, and use the new edit question menu.

For all users:

1. Ability to filter and order your Moodle courses in the 'My Courses' area.
2. Participate in interactive and engaging learning activities created with embedded H5P.
3. Engage in discussions via the new look discussion forums with:
   a. A new nested structure that users can select for their personal view.
   b. Ability to star topics you want to revisit and conduct a search filtering for your starred topics using 'advanced search'.
   c. Clearer process for subscribing to a forum for receiving email updates.
   d. View marks and feedback for forum contributions from your lecturer.
4. Add emojis to Moodle messages.
5. Be notified when your session is about to time out and choose to continue or end session.
6. Filter your Moodle calendar by month, day, or upcoming event.

Additional Moodle Plugins/Functionality

Delivery Date: 13 July – 7 September 2020

In addition to the added functionality of Moodle version 3.8.4, IT Services is delivering 13 plugins before the start of academic year 20/21. The majority of this functionality will be available to all users; however, some have limited licensing for particular Schools or Departments.

Delivery Date: 13 July 2020 – Flexible Sections

Flexible Sections is a course format option that helps academics avoid the ‘scroll of death’ in Moodle pages by enabling the nesting of materials in Moodle course pages. Subsections can be added to a course’s main topic headers as well as to other subsections and academics can choose to have these expanded or collapsed for the students’ view.

This functionality is available to all Moodle users who have permission to edit courses to use with students. To find out more about what capabilities are offered by Flexible Sections and how to get started using this feature, please see:

- Moodle HQ Documentation
- Getting Started with Flexible Sections video by Tom Parkinson, School of PDA
- Further Example of Flexible Sections video by Jorge Blasco Alis, School of EPMS

Delivery Date: 10 August 2020 – Group 1 Simple Plugins

1. Multi-Embed Filter is a backend technical plugin that facilitates the embedding of third party content and will be used to bring in Padlet later in the summer. This functionality will be available to all Moodle users who have permission to edit courses to add for their students.

2. Music Theory allows for music theory questions to be added to Moodle quizzes such as note identification, interval and scale writing, chord and harmonic function identification. This plugin will also allow for randomly generated questions that can automatically be marked as well as assessments using USB keyboard input. This functionality will be available
to all Moodle users who have permission to edit courses to add for their students. Please see the Moodle HQ documentation for further information.

3. **Journal** provides a Moodle area for individual students or small groups for reflective writing or short answer assessments. Academics can assign a mark and provide text-based feedback.

The Journal is suitable for simple, short, online writing assignments in which students will refine their entries over time based on feedback from the marker. Journal assignments should be simple because it does not allow for file uploads or use of the rubric for marking; however, students can add hyperlinks and images. This functionality will be available to all Moodle users who have permission to edit courses to use with students.

4. **Group Choice** allows for students to enrol themselves in a group within a course. The academic can choose from which groups the students can choose and the maximum number of students in each group. Depending on the activity settings, students can view the members of each group before making a choice and change their selected group until the deadline. This functionality will be available to all Moodle users who have permission to edit courses to add for their students.

**Delivery Date: 17 August 2020 – Group 2 Simple Plugins**

1. **Questionnaire** allows academics to create surveys for students to gather feedback data on a course topic or delivery. It allows for a variety of questions types such as check box, dropdown choices, text box, radio buttons, and yes/no. Academics and administrative staff can view and download results. There is also the option of receiving questionnaire reports via email from Moodle.

This functionality will be available to all Moodle users who have permission to edit courses to add for their students. Please see the Moodle HQ documentation for further information.

2. **360º Feedback** allows students to provide either identifiable or anonymous feedback on the work of their peers using either a comments text box or rated questions using a Likert scale. This functionality will be available to all Moodle users who have permission to edit courses to add for their students.

3. **Completion Progress OR Checklist** allows students and academics to track their progress in a Moodle course and provide visual representations of activities to be completed and those already completed. This can be used by academics to identify students who are not engaging as expected so they can intervene to help and support the student.

IT Services is gathering requirements from the Schools that requested this functionality to ascertain requirements and investigate which plugin will be implemented. This functionality will be available to all Moodle users who have permission to edit courses to add for their students. Please see the Moodle HQ documentation on Completion Progress and Checklist for further information.

**Delivery Date: by 7 September 2020**

1. **CodeRunner** is a group of two Moodle plugins that connect to an external Jobe (Linux) server and allows computer programming questions in various languages (Python, JavaScript, PHP, etc.) to be added to Moodle quizzes for formative and summative testing of student understanding. Students’ type in their lines of code into the Moodle quiz area
and it is then sent to the Jobe server to compile and check. The server then marks the question, adds feedback, and sends this back to Moodle to display for the student.

This functionality is being implemented by IT Services in shared ownership with the School of EPMS, and the use of CodeRunner functionality will be available for limited to academics who have undertaken the appropriate training provided by EPMS and their students (training contact will be posted on the Flexible Hub nearer to the implementation date). Please see the Moodle HQ documentation for further information.

2. **STACK** (System for Teaching and Assessment using a Computer algebra Kernel) is a group of 6 Moodle plugins that connect to an external Maxima CAS server and allows complex mathematical question types to be added to Moodle quizzes for formative and summative assessment. STACK uses a computer algebra system (CAS) to implement these mathematical functions. A CAS provides a library of functions with which to manipulate students' answers and generate outcomes such as automated marking and providing feedback. Using CAS can generate random yet structured problems from a set of parameters, and corresponding worked solutions that enable each student to receive a different test question.

This functionality is being implemented by IT Services in shared ownership with the School of EPMS, and the use of STACK functionality will be available for limited to academics who have undertaken the appropriate training provided by EPMS and their students (training contact will be posted on the Flexible Hub nearer to the implementation date). Please see the Moodle HQ documentation for further information.

3. **Padlet Backpack** (via Multi-Embed Filter simple plugin) is a 3rd party app that is basically a digital corkboard where academics and students can collaborate. This will be a Royal Holloway branded Padlet area where users can create idea boards (similar to Pinterest), have Q&A sessions, add content points to a map, or create a timeline. Academics can allow students to comment or post reactions to their peers’ contributions.

This functionality will be available to all Moodle users who have permission to edit courses to add for their students. Please see the Padlet website for further information.

**Delivery Date: TBC**

These plugins/functionality have been approved by the Executive Board and the College is in the requirements gathering and procurement stage with the requesting Schools. Delivery dates and further information will be posted on the Flexible Hub in the near future.

1. **Labster** is a 3rd party app that allows for students to engage in practical lab virtual simulations for a variety of scientific disciplines.

   Labster functionality will be limited to licensed academics only and their students. Please see the Labster website for further information.

2. **MasteringBiology (Pearson) OR Sapling (Macmillan)** allows for digital textbooks and access to further learning materials like videos and question banks associated with those texts. Functionality will be limited to licensed academics in the requesting School only and their students.

**Class Teams in Microsoft Teams for Teaching and Learning**

*Delivery Date: 4 September 2020*

In addition to Moodle, Microsoft Teams – a more social, collaborative, and synchronous-focused platform – will form the core of the College’s learning technologies ecosystem. In August 2020,
students will be licensed for the full use of Microsoft Teams. They will additionally be enrolled on a 
Class Team in Microsoft Teams (using the Skooler integration) for all their courses which will be 
created centrally by IT Services by 4 October.

There are four Team types available in Microsoft Teams: Professional Learning Community (PLC), 
Staff, Class, and Other (bespoke Team). The Class Team type offers different roles and 
functionality to the Teams you use with staff colleagues; click here for an overview of the four Team 
types. In order to familiarise with Class Teams, IT Services provided Schools and Support Services 
with Class Team sandboxes in late June. If you have not been participating in these yet, please 
contact your School Manager, Chair/Lead of School E-Learning groups, or your Support Services 
Lead/Director to be added.

The specific technical functionality in MS Class Teams that will be available in September and the 
accompanying governance/policies are currently still in progress and in the consultation stage. This 
will be decided and implemented in mid-August, and further communication will be circulated and 
posted on the Flexible Hub. Schools and Support Services will be provided with sandboxes of the 
new Class Team build to help them familiarise with what will be in place for academic year 20/21.

**Note that the Assessment and Gradebook functionality in Class Teams will be disabled, as all 
assessments will continue in Moodle** using Moodle quizzes and assignments, Turnitin, and 
Panopto assignment folders as in previous years. With the upgrade to Moodle 3.8.4, H5P 
assessments are now available to use as well, which integrate with the Moodle gradebook.

Class Teams will include the following at the start of term:

1. **Student and staff enrolments** based on the corresponding Moodle course (this will be 
done automatically by the Skooler Integration).
2. **Open and private channels**, which are subgroups of Team members in all Team types. 
Open channels are those in which any member of the Team can participate while private 
channels are restricted to only chosen Team members.
3. **Class Notebook**. You may want to familiarise yourself with the largest component of Class 
Teams that will be available to staff and students, which is the Class Notebook (the content 
shown in the first 5 minutes of the video will be set up for you by IT Services, the rest is a 
how-to for academics).
4. **Breakout Rooms**. Microsoft are currently developing and testing an improved breakout 
room capability, which is on their roadmap to be delivered in Q4 of 2020 – so soon! In the 
meantime, if you would like to use breakout rooms in Microsoft Teams, please **click here for 
instructions**.

For further information on using Class Teams in Education, please see:

**Pedagogical How-To**

1. Also, for further scenarios for how to use Teams for Learning and Teaching, see the 
Microsoft Flipgrid Scenarios Higher + Further Edu page. This is a library of short videos 
created by educators of how they are using Teams in education and good practice. 
[https://flipgrid.com/c3eb5f64](https://flipgrid.com/c3eb5f64)
2. More food for thought on how MS Teams can help foster inclusivity in the classroom, see 
‘London College gives every student a voice with Teams’ page around the work of the Esam 
Baboukhan, computer science instructor at City of Westminster College in London. (2 min 
video and 4 minute read). [https://educationblog.microsoft.com/en-us/2018/03/london-
3. Before diving into your class team sandboxes, we’d suggest that you watch ‘Demo: Teams 
in the Classroom at Microsoft Inspire 2019’ by Dr. David Kellermann, lecturer in the school
of engineering at the University of New South Wales (just under 10 minute video).
https://www.youtube.com/watch?v=NcbQ2UK69Tc

Technical How-to

1. If you just want to jump in and do just-in-time micro-learning, about class MS Teams, see the Microsoft Support page for Class Teams. You can search for specific items and do more targeted learning for specific functionality. https://support.office.com/en-gb/Search/results?query=Class+teams

2. If you would like more structured learning courses about MS Teams and o365 apps, Microsoft has a Microsoft Educator Center. Just type ‘Teams’ in the search box. https://education.microsoft.com/en-us/courses

3. If you would like to do more in-depth training of o365 and MS Teams, you can take a series of courses and become a Microsoft Innovative Educator (MIE) and then later a Microsoft Innovative Educator Expert (MIEE). https://education.microsoft.com/en-us/resource/1703c312

Class Teams and Moodle integration with Skooler

Delivery Date: 4 September 2020

Skooler is an app that integrates Moodle and MS Teams and will benefit all users by:

- Enabling the automated generation of an MS Class Team for all Moodle courses by IT Services and migrating enrolments, roles, and permissions from Moodle into Teams. Providing all students with a Class Team for every module and reducing academic and School admin workload.
- Import the main Topic headings from a Moodle course as channels in Class Teams, helping to organise the team space and learning activities.
- Allowing users to effortlessly access via single sign on and use Moodle from within MS Teams, reducing the need to click between various windows and login multiple times. This will help lessons flow more smoothly for both academics and students.
- Enabling/disabling Class Teams functionality as required by the College through the application of Skooler templates in conjunction with the approved Class Team build. This will ensure consistency across Class Teams for all users.

As demonstrated this Skooler demo video, Skooler offers all users the following functionality:

1. Addition of ‘Moodle Dashboard’ button on the MS Team left-hand menu that will take you to your personal Moodle landing page (the one displayed after login to Moodle). This will open Moodle within the MS Teams environment via an iFrame enabling a user to use the full functionality of Moodle from within MS Teams.
2. Using the Skooler Moodle Manager, IT Services can automatically create Class Teams for a Moodle course.

   This will create a Class Team with the title of the course from Moodle (‘course full name’ field), and it will bring over all student enrolments as ‘student’ and all staff enrolments as ‘teacher’ from Moodle into the Class Team automatically.

   There is a sync within the Skooler app that by default runs once a day that will update enrolments through from Banner > Moodle > Class Teams created via Skooler.

3. Skooler templates to control some of the look and feel and permissions of Class Teams (to be used in conjunction with build of Class Team type in MS Teams). These can only be created by a sysadmin in IT Services and can be applied to individual or batches of Class Teams at creation point with Skooler.
4. Within the Class Teams created using Skooler:
   a. As default: A contextual ‘Moodle Course’ tab is added to the top of the Team that when clicked, will take you directly to that course within the iFrame to Moodle from within that Class Team. This will reduce flicking back and forth between MS Teams and Moodle in a browser during teaching and when students are working asynchronously with class materials.

   ![Figure 3 - Contextual Moodle tab](image)

   b. Can migrate Moodle course unhidden ‘Topic’ names as channels into the Class Team (hidden topics will come over as private channels only teachers can see and access).

   ![Figure 4 – Topic names in Moodle course](image)
Windows Virtual Desktop (WVD) for Specialist Software

*Delivery Date: 11 September 2020*

PC Labs will be available for face to face teaching with social distancing measures in place and machines will be upgraded with the latest versions of teaching and learning software where it is required. Some academics will not be using the latest versions of software as their teaching and learning materials are based upon an older version. A full list of software that will be available can be viewed via the [IT web pages - PC Lab applications by location](location). This list will be updated before the start of term. Note that the Desktop Support Team will not be doing a wholesale upgrade this year – only the essential changes to support the delivery of flexible education.

In addition, to support the flexible teaching strategy and provide a business continuity plan in the event of any successive 'lockdowns', a dual approach is being taken to access specialist applications as follows:

- Free/site licenced software available for download – students will be directed to a list of software they can download to their personal devices.
- Applications that cannot be installed on personal devices due to platform compatibility, licensing and hardware restrictions will be made available via remote access to either a physical or virtual PC which will host this software. Windows Virtual Desktop will be used to provide the virtually hosted devices.

Audio Visual Equipment Available in Teaching and Learning Spaces

*Delivery Date: 11 September 2020 (practice rooms will be available earlier)*
All centrally timetabled teaching rooms will be set up for flexible teaching and learning using Class Teams with cameras and microphones for communication with remote students. Users own devices can be used in tandem with the room PC or as the main display source.

Replay (aka Panopto) will also be available in rooms to enable lectures to be recorded in line with the College policy for academic year 20/21 (refer to ‘Lecture Recording’).

A full list of rooms and capabilities will be available via IT web pages - Audio Visual by location which will be updated in time for start of term.

Audio Visual Equipment in classroom will provide the following:

- Teaching staff will be able to facilitate a seminar or small group meeting with students in both the on campus and digital classrooms simultaneously.
- Students in the classroom will be able to see content on the large screens and on their personal devices. Students joining remotely will be able to see content on their personal devices (via Class Teams).
- Students will be able to ask questions in the room or online and all participants will be able to hear. Similarly, students online can verbally ask a question and this will be heard by students on the call and in the classroom. Alternatively, participants may choose to communicate using the chat function available via Class Teams.

To access the user guide for how to use the Audio Visual technology for teaching and learning please click here.

A small number of rooms (expect 10 spaces, various sizes and styles), will be ready for use if staff would like to experience using the equipment ahead of the start of session. The full estate however, will not be ready until September. Which rooms will be available, when, and how to book these will be circulated soon.

Lecture Recording for Flexible Education

*Delivery Date: Already available in existing centrally booked space. Extended estate 11 September.*

The ability to record a lecture will be available across all campus classrooms, with the exception of PC labs, science labs, and field work locations. This builds on the successful implementation of lecture recording for 55% of all lectures last academic year.

Using the existing **Replay** system (a.k.a. Panopto), staff will be able to record lectures on campus or, if delivering their lecture remotely, on their own devices using the local recorder and uploaded to Replay. A self-service option on Replay will allow staff to make recordings available to students according to their requirements (or in line with College policy TBC).

In addition to being an aide memoire for students during revision and support for DDS students, lecture recording will enable students in different time zones to access the content during sociably acceptable times. It will also enable academic staff to explore different teaching methods – e.g. flipped classrooms or short series of micro-learning videos if they wish.

**New Accessibility Tools**

*Delivery date: now – 30 September 2020*

To ensure that our teaching and learning applications are inclusive and accessible for both staff and students and additionally comply with the EU Directive on Accessibility, the following is/will be available before academic year 20/21:
**Delivery Date: Already available**
Automated subtitles/captioning for voice over PowerPoints (using O365) and Microsoft Teams meetings for all users.

- [PowerPoint](#) for Microsoft 365
- [Microsoft](#) Teams

* Note that microphones provided in the classroom need to be used correctly and headsets should be used for remote working in order to get the best results from automated captioning.

**Delivery Date: 18 September 2020**
Replay (a.k.a. Panopto) automatic captioning will be available for all users by 18 September 2020.

**Delivery Date: 30 September 2020**
Ally is a proactive accessibility plugin provided by Blackboard that harnesses advanced machine learning algorithms to provide users with the following functionality and benefits:

1. Aids academics in producing learning and teaching materials that comply with accessibility requirements and legislation through automated checks of course materials on upload to Moodle.
2. Helps to educate academics by delivering in-context feedback and guidance to help improve their knowledge of accessibility and improve the accessibility of their courses.
3. Generates and provides alternative accessible content via an AI for Moodle course participants/students in a variety of formats such as semantic HTML, tabbed PDFs compatible with screen readers, ePub, and electronic braille. Once the plugin is installed on Moodle, it will systematically go through already existing material and produce alternative formats as well.
4. Allows for Moodle sysadmin comprehensive individual course and site-wide statistics on what alternative file sizes are being used across the College and accessibility scores.
5. Raise awareness of accessibility and builds towards a sustainable change in behaviour regarding inclusivity and accessibility across the College.

Please see the [Ally website](#) and this [Ally Moodle Plugin Demo video](#) (choose 'Ally for LMS (Moodle)') for further information. We will also be implementing Ally for Web for the Royal Holloway website which offers users similar functionality.

**EditShare for Media Arts Assessments**

**Delivery Date: 11 September 2020**

Media Arts have an internal central storage system called EditShare which currently can only be accessed from a few PC labs on campus. It is used by all their students to upload practical coursework and submit assessments comprising large video and audio files. This system is specially designed to support 4K+ video, uncompressed audio formats, and postproduction workflows, and forms the backbone of the Media Arts department’s practical courses. Using EditShare AirFlow, a web application, Media Arts students can be granted remote access to their personal and course spaces within EditShare for uploading practical work and assessments.

In addition to allowing students to submit work remotely, these changes to EditShare will enable teaching staff to view and download all of their students’ practical submissions for marking. Students and staff will be able to view, edit, tag, upload and download their video and audio files from EditShare on their computers at home

Note that for the academic year 20/21, access to and use of EditShare is limited to students on PDA Media Courses.
Teaching and Learning Tool Suite Delivery Roadmap (July – September 2020)

The roadmap diagram below provides the delivery timeline between July – September 2020 for the teaching and learning suite of tools.