

*OKP 'Climate Proof Vietnam'  
version, made for Hanoi University  
of Natural Resources and  
Environment, Hanoi, Vietnam*

 **TU Delft**



# Online education in the Global South Tips and tools

# Disclaimer

This manual has been created from many resources openly available through different platforms, the sources of which are mentioned on the slides. The information, which belongs to the original author(s), has in some cases been (slightly) altered for the purpose of this document. The content of this manual focuses on the basics of transitioning to online education and the most useful tools which are freely available worldwide. It was made with the intention of motivating and inspiring educators who have to transition to online education. It is by no means an exhaustive list of tips and tools. If the reader wishes to read more information about a certain topic, they can use the source links at the bottom of the slides, or the references at the end of the manual.

This manual was originally made for the partners of the TU Delft in the Orange Knowledge Programme Institutional collaboration projects.

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# Objectives and advantages of e-learning:

- You reach more people, thereby increasing your impact
- Students can learn at their own pace when following an online course
- It is cost-effective
- Teaching online reduces travel costs and time
- Curricula is updated more regularly
- Quality control (when lectures are shared)
- Through online education, lifelong learning supported (i.e. outside of school)
- The sharing of materials is supported
- Green!

# Caution: cyber security and privacy

In this document, references are made to different tools and software. You must always be cautious when downloading new software however, for it could pose risks to your privacy and/or your computer.

- Check the **privacy policy** of a new software. Pay special attention to:
  - What and whose personal data does the company/product collect
  - How is this data processed
- Be careful what **permissions** you give when browsing online or using new software
- Check the **security policy** of your employer before downloading a new software from the internet.

# Terminology

- **E-learning:** a learning system that we can obtain through the internet
- **MOOC:** Massive Open Online Course
- **Webinar:** a seminar conducted over the Internet
- **Didactics:** a theory and practical application of teaching and learning
- **Open-source:** Original source code is made freely available and may be redistributed and modified.

# Online classes and lecturing



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# Accept, reprioritize and keep it simple

## Acceptance

- No one is expecting you to directly replicate your course!
- The key is ensuring that students don't fall too far behind
- In most cases, we will need to let a few things go, and that's okay

## Reprioritize

- You can't convert everything online
- Condense your theory: focus on the key theory
- Prioritize the 1 or 2 core theoretical concept/s that students have to know for your course

## Keep production simple

- Focus on the 'what', then on the 'how'
- Keep the 'how' simple



# Online teaching and learning etiquette

When you teach online, see it as if you are teaching in front of a normal class. You and your students should both:

- Dress appropriately
- Ensure your background is neutral and non-distracting
- Be careful with humor and sarcasm
- When using written communication, be aware of strong language, all caps, and exclamation points. Double-check your spelling.
- Do not post or share (even privately) inappropriate material.

This way you create a professional and productive learning atmosphere.

# Simple production: examples

## Quickest approach:

- Select a reading/article or video and send it to your students
- Start a discussion or make a short quiz about this reading

## If you have a little more time:

### Lecture using existing slides

1. Use your existing PowerPoint slides
2. Download a video recording/ screen capture software (info on tools will follow)
3. Record yourself giving the lecture using your existing slides (either live, or send to students as an MP4 file)
4. Allow students to ask questions via an email thread, Google Docs etc.

### Lecture without existing slides

1. Watch some online lectures on YouTube, EdX or other sites. See what works for you
2. Continue with making a script for your lecture - our quick tips are [here](#)
3. Decide whether you want to use PowerPoint slides, tips can be found [here](#)
4. Follow steps 2-4 from 'Lecture using existing slides'

# Digital didactics

- It is important that at first you do not focus on the technical aspects, but on how you can **get your message across** most effectively
  - i.e. students will not retain information from just a 90min online lecture
- You want to **keep the attention** of your students and **activate** them
- Once you have your didactical plan, you can choose a media that suits you best, instead of the other way around
- It is important to **reflect** on your digital didactics. How are your students experiencing your new way of teaching? It is effective?
  - This can be done by:
    - Asking your students at the end of the live lecture
    - Setting up a survey through free survey software such as [Survey Monkey](#) or [Google Forms](#)

# Digital didactics

## Example: online debate

A good way to activate students to think more deeply about the content may be to organize a debate.

**Preparation:** You will need to choose a problem or statement that allows for an affirmative and a negative team. Subsequently, you need to make two (or more) teams of students, each of which needs time to prepare their debate arguments. You then need to organize (i.e. set time, invite students, choose media) the debate and do some preparations on moderating.

### **Technology:**

1. You need to explain the topic/problem/statement. The problem can be elaborated on through a, which you make yourself, you take from YouTube or perhaps you can choose a controversial [Ted Talk](#) topic. video
2. Inform your students on their position regarding the statement.
3. Students can use conferencing tools such as [Skype](#), [Zoom](#) or [Google Hangouts](#) to discuss with one another and use a platform to collect all their ideas such as [Google Drive](#), [Dropbox](#)
4. Organize the debate through a conferencing software that allows big groups, i.e. [Zoom](#) or [Google Hangouts](#)

### **Fun alternative: [Twitter](#) debate**

- Ask all your students to make Twitter accounts
- Choose a unique debate #hashtag which they can use in their debate.
- They can post their arguments, including the chosen #hashtag, making them visible on the #hashtag page
- Other students can comment on these arguments with their rebuttals
- This allows students to debate for a longer period of time, take more time to respond, and allows others from outside the class to bring in new perspectives by using the same hashtag!



# Digital didactics: options

	Readily available	Asynchronous	Synchronous
<b>Not interactive</b>	<ul style="list-style-type: none"><li>• (Online) readings</li><li>• Video clips, how-to videos</li><li>• Podcasts</li><li>• Frequently asked questions</li><li>• Old lectures/webinars</li></ul>	<ul style="list-style-type: none"><li>• Announcements</li><li>• Sharing newly made online lecture material</li></ul>	<ul style="list-style-type: none"><li>• Live streamed lecture</li></ul>
<b>Interactive</b>	<ul style="list-style-type: none"><li>• Existing games or models</li></ul>	<ul style="list-style-type: none"><li>• Blogs</li><li>• Vlogs</li><li>• Discussion groups</li><li>• Email</li><li>• Opportunities for questions</li></ul>	<ul style="list-style-type: none"><li>• Chat</li><li>• Virtual class</li><li>• Video conference</li><li>• Conference call</li></ul>

Decide what really needs synchronous communication (students and instructors are gathered at the same time) and what does not



Try to keep online lectures to no more than 20 minutes – or break them into short self-standing chunks with activities for students



## Moving classes online: getting started

Provide clear instructions to guide students what to do, and when.



Decide how you will communicate with your students.



Select only 1 or 2 interactive tools and master them.



# Moving classes online: 4 easy tips

1. Split up your lecture in a series of activities
2. Reuse content or even an old lecture
  - Besides your own content, you can find teaching content on different University OpenCourseWare websites, for example: [TU Delft OCW](#)
3. Replace (part of your lecture) by recording your own video.
  - Keep lectures short and lively
  - Multiple short videos is better than one long one
4. Replace (part of your lecture) with a short live video conference / webinar
  - If you don't have time to prepare anything before your next lecture, use a live conferencing software for discussions/questions

# Online class activities: examples

- Watch a video on YouTube
- Listen to a podcast;
- Read an article
- Student presentations
- Make an (interactive) quiz
- Do an assignment with interactive tools
- Discuss / ask questions / give feedback on a discussion board online.
- Organize a debate
- Chatroom discussions



# TU Delft Online Learning Hub

- The goal of the Online Learning HUB is to support and facilitate TU Delft faculty to teach and develop online courses with teachers as active and reflective participants.
- It is useful for everyone involved in online course development

## 4 phases:

Plan



Define learning objectives, learning activities, resources and assessment

Produce



Create learning activities, reuse and develop educational resources (text, quizzes, video)

Run



Run your course using community management and e-moderation techniques

Evaluate



Improve your course for the next re-run using surveys and learning analytics

Link: <https://onlinelearninghub.tudelft.nl/>

# Tools per activity

## Recorded “Traditional” lectures

If you wish to make an online lecture of your material, you can use:

- **OBS Studio**: open source (free) software for both recording and Live Streaming (Interactive Lectures)
- **Quicktime** (available on Mac by default)
- **Camtasia**: paid software with Education Pricing for €182.60 (there is a free trial for 30 days which puts a watermark over the output video)
- **Screencast-o-matic** and **Snagit** are tools to record your screen while you teach
- **VideoScribe**: Paid whiteboard video animation software that allows users to create highly dynamic and interactive animation videos on a virtual whiteboard interface (there is a free trial for 7 days which puts a watermark over the output video)

# Tools per activity (cont.)

## Interactive lectures

If you want to host a live online lecture where students can actively interact with you and ask questions:

- **Twitch**: live streaming platform for large groups
- **Jitsi** (self hosted), **Skype for Business** and **Zoom** work for smaller groups of students

# Tools per activity (cont.)

## Student Presentations

For student presentations, the following tools work well:

- **Skype** (although it requires you to “befriend” everyone in the class)
- **Zoom** (free version has a 40 minute limit)
- **Google Hangouts**

These tools provide the possibility for all except the speaker to have muted microphones and for one participant to share the screen.

# Tools per activity (cont.)

## Discussions

Besides the previously mentioned tools, you can also set up voice/video chat with students using **Talky.io** and the **Queue**.

Discussions can also be organized in written form using a platform:

- **Poll Everywhere:** allowing polls and discussions
- **Today's Meet:** Online chatroom that can be moderated by a teacher
- **Nearpod:** Interactive PowerPoint
- **Padlet:** Like an online graffiti wall
- Or consider using a Facebook group, Twitter, or Google Docs

# Tools: overview

- **Live Streaming:** Twitch, OBS, YouTube Livestream
- **Uploading Videos:** Yukon, YouTube
- **Online Conferencing:** Talky.io, Zoom, Skype for Business, Discord, , WebEx, Google Hangouts
- **Teams:** Mattermost, Discord, WebEx, MS Teams
- **Discussions:** Poll Everywhere, Today's Meet, Nearpod, Padlet, Facebook Group

Service	Live	Audience size	Price
Youtube	Yes	Unlimited (lecture size)	Free
Yukon server	No	Unlimited	Free
Twitch.tv	Yes	Unlimited (lecture size)	Free
Zoom	Yes	Conference size	Multiple plans
Skype for business	Yes	Conference size	Part of MS Office 365
Jitsi	Yes	Conference size	Free
Talky.io	Yes	Project group size	Free
Discord	Yes	Conference size	Free
WebEx	Yes	Conference size	Multiple plans

# Quick guide: Google Hangouts

If you wish to organize a simple hangout without recording

- Go to: <https://hangouts.google.com>
- Check that your microphone and sound are working and that the relevant plug-ins are installed
- Click 'Video Call'
- Invite people of whom you know the Google account or share the link with them via email/social media or another form of communication
- Start the discussion!

You can also create a permanent link to a certain hangout, so that all participants can get back to the session with the same link. This can be done by creating a Hangout event in Google Calendar.

Excellent tips and FAQ can be found here: <https://support.google.com/hangouts/>

# Quick guide: YouTube Live\*

*\*formerly 'Google Hangouts on Air'*

1. Check Sound and Microphone on your device
2. Open the platform you use to announce the hangout (Brightspace, edX,...), Powerpoint and [YouTube Live](#)
3. In Youtube Live, log in with your Google Account, click on your account profile picture and click 'Creator Studio'
4. Click 'Live Streaming', then click 'Events'
5. Make a new live event with the time set to 'Now'. Make sure to use the 'Quick' setting
6. Click 'Go Live Now!'
7. You are now in the Hangout. Click 'Invite people' at the top. Copy the link you get and publish it on the community. Now your students can start to join.
8. Wait a bit until all your students have arrived, ask them for permission to record the session and click 'Start Broadcasting' on the bottom. Wait a few second before starting.
9. You are now broadcasting with your students in the Hangout.
  - If you want to share your screen to show a PowerPoint or make a drawing, click the green 'Screenshare' button on the left in the hangout. Make sure to stop screensharing if you don't need it anymore.
10. When you have discussed enough and said goodbye to you students, stop broadcasting, but **do not close the window!**
11. Click 'Links' in the bottom right corner, and copy and save the links to your session. Share that link with the students and/or other parties. Now you can close the window.



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# Online assignments

# Online assignments

- In an online assignment and tests you have less control over the students' use of resources and interaction
  - Students can use the internet, study books, notes and each other
- The assignment should ideally be designed in such a way that the students have to **apply the information** that they have available to them.
  - Imagine them completing the task in the real world of work (within their future jobs), where they can consult resources to complete some or other task.
- Assignments are often used to address higher order knowledge skills: **deeper understanding, applying, analyzing, evaluating, designing**
- Time given to submit the assignment should match the learning objectives, and the activities needed to complete them
  - These activities could include, for example, group discussions
- If time is limited and strict, collaboration between students and plagiarism are less appealing.
  - Time pressure requires active knowledge and skills, and does not allow students to learn on the job.

# Online assignments: deliverables

Many assignments can be done online in different forms. Some examples are given below:

- **Written documents:**
  - Research paper, case study, fact sheet, article, report, proposal
- **Designs:**
  - Schemes, drawings, fact sheets, model outcomes) shared on for example Brightspace Discussion Board.
- **Presentations**
  - PowerPoint over conferencing software, poster presentation, PowerPointslides with voice-over, slide book with notes, video, animation, etc.
- **Portfolio and reflective logs**
- **Discussion forums**
- **Quizzes or small tests on content (see next chapter for examination software**

# Tips for keeping assignments clear, fair and assessable

- Make sure you test only learning objectives applicable to this assignment. You can use consistency check table for this.
- Check **feasibility**.
  - The workload should be reasonable for your students
  - grading burden should be manageable for you and your colleagues
- Use **assignment description** that includes the following information:
  - Name assignments accurately. It will help students to focus on the purpose of the assignment.
  - Clear instructions
  - Clear point allocation and word/page limits.
  - Specify intended audience and purpose of the assignment.
  - Provide rubrics with clear descriptors.
  - List resources, how to get help, and how feedback will be provided.
  - Indicate what the final product should be, and how it should be submitted.
  - Give the submission date and mention the consequences for missing it.
- Be clear about what is and what is not **permitted**.
- If relevant, provide clear **rules for retake** (how to improve, revise or new assignment) and **grading**.
  - Consider whether it is fair to grade similarly, when retakers received feedback on their product and could improve.

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# Online examinations



# Online examinations: quick tips

- In remote exams, the risk of fraud is higher than for on-campus exams.
- Therefore, you need to change multiple choice questions, true-false questions and other closed-ended questions to **open-ended questions**.
- Your exam should become an open-book exam.
  - This implies that you cannot use questions that require learning-by-heart, but more questions on understanding
- You can choose to organize an **oral online examination**, or a **written online examination**

## Suitable for oral examination:

- Presentation & language skills
- Case-studies analyses
- Knowledge & understanding testing

## Unsuitable for oral examination:

- Computations
- Scientific analyses
- Online analytical problem solving

# The assessment should cover the learning objectives, and nothing more

Example: if an assessment is changed into an oral exam, the verbal capacities or language use of the student should not influence the grade, unless it is part of the learning objectives

# Oral online examinations

Which type of oral exam fits my course?

*\*See next slide*

	Standalone remote Oral	Remote oral + Take-home assignment	Remote oral + Time limited assignment	Remote oral + Digital exam
<b>Max no. students</b>	< 30	< 60	< 60	< 60
<b>Coverage learning objectives (typical)</b>	100%	85% in assignment, 15% in oral exam	85% in assignment, 15% in oral exam	85% in digital exam, 15% in oral exam
<b>Recommended length remote oral</b>	Max 1 hour	Max 30 min	Max 15 min	Max 15 min
<b>Necessary staff preparation</b>	High: Need to develop sufficiently large question bank, sample exam and answers, exam script	Medium-high: Need to develop sufficiently large question bank, sample exam and answers, exam script	Assignment: medium Need to develop sample exam and answers, exam script	Medium-very high: Need to develop digital exam and have a system t
<b>Marking time</b>	Low	Low-high (depending on assignment)	Medium	Low-medium
<b>Software and software experience needed</b>	Need to operate conference software*	Need to operate conference software and be able to send out assignments	Need to operate conference software and be able to send out assignments	Need to operate conference software and a software that allows quizzing/testing*



# Digital examinations software



## How does it work?

1. Install exam software and add a short description
2. Add images, audios, and videos to make the exam look livelier
3. Ensure that the explanation of the answers is displayed after completing the exam.
4. Schedule the start date and end date for the participants to access the exam.
5. Set the time limit for the exam attendees to attempt the entire examination
6. Put the test online
7. Share the exam link with the participants
8. View the progress of the participants after the exam completes.
9. Check out the statistics per user or get the overall view of the performance of the group

# Digital examination software

Exam software	Deployment	Device supported	Unique features
TCEExam	Open API	Web-Based	Enables the trainers and educators to schedule, author, deliver and report on the online quizzes, tests, and examinations. It is a web-based system that is platform-independent and language-independent.
Kaldin	Cloud-hosted, open API	Windows, Mac, Web-Based	Kaldin creates, schedules, and evaluates exams efficiently. It offers a relaxed and straightforward interface to the clients with a hassle-free test process. It is a fully customizable application that can be modified as per user's requirements.
Moodle	Cloud-hosted, open API	Windows, Mac, Web-Based	Provides collaborative tools and activities for group learning, offers an all-in-one calendar to keep track of your events, provides a file management system, has a simple text editor.
Papershala	Cloud-hosted, open API	Windows, Mac, Web-Based	Trustworthy software for coaching institutes allowing instant results after exams. It has a simple and easy to use interface.
TAO	Cloud-hosted, open API, On-premise	Windows, Mac, Web-Based	TAO delivers maximum interoperability, flexibility, and security to the users. It is a standard-compliant, open-source assessment system that works as per client-specific functionality.
R-Exams	Open API	Web-Based	R-Exams is an open source package of online exams that comes with very nice exercise templates
PESofts	Cloud-hosted	Windows, Mac, Android, Web-Based	A leading online test conducting software system that offers responsive and reliable support

# Structure of open exam questions

When constructing exam questions, use the following 3-part structure:

## 1. Context (optional)

- Make sure the context is relevant for the question. If not, remove it.
- If the question can be answered without using the context, then change/remove the context OR change the question. Unless a learning objective is to filter out irrelevant information, of course.

## 2. Question (assignment) – *see next page*

## 3. Directions for answering

- Use imperative sentences (“List three characteristics of X” rather than “What are the characteristics of X”).
- Specify what you expect in the answer (e.g. “List the three characteristics of X”).
- Avoid “anything goes” formulations such as “What do you think...”

# How to write exam questions

- Your exam questions should be challenging, interesting, fair and, if possible, fun!
- Exam questions should reflect the learning objectives of the course.
- Identify the action verbs in your learning objectives, and then make sure that your questions cover the same cognitive level (level of difficulty, e.g. remembering vs analysis).
- Make sure you are testing what you promised students would learn. Let them know which course learning objective(s) is/are covered in the exam.
- The learning objectives will also determine the type of exam
- Write clear instructions; if there's any ambiguity in what they need to do, students will struggle.
- Ask a colleague to proofread your questions.
- Simplicity is best! Don't write complex sentences, or use idiomatic language that students may find difficult to understand.
- To test a deeper level of understanding and insight, ask the students to justify their answers.
- Ask your students what kind of questions they would expect to see in the exam.

# Checklist for exam questions

This way students can budget their time to be most impactful for them. They should not spend a lot of time on a question that will not earn them a lot of points.

## Information for students on the exam

- ✓ During the test/assignment, are the points to be earned by each question or subquestion announced?
- ✓ Before taking the test/assignment, do students know what will be on the test both in structure and in content?
- ✓ Before taking the test/assignment, did your students get the opportunity to practice the types of questions with which you will be testing?
- ✓ After getting the grade and feedback, does the student get information on how her grade has been calculated, and on how he or she can improve her performance?

## Question quality

- ✓ Is the answer model in line with what the test questions ask?
- ✓ Is the question unambiguous and is it clear what is being asked?
- ✓ Is the tested knowledge or skill necessary to answer the question?
- ✓ Do not try to cover more than one learning objective in the same sub question

## Lay-out / language of the exam

- ✓ Is the layout clear?
- ✓ Are the figures clear?
- ✓ Are there any spelling errors or typos?
- ✓ Have double negatives been avoided?  
Is the question concisely formulated?
- ✓ Any copy-paste errors?

# Research



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# Academic research at home

The current situation (Covid-19 Pandemic) affects all researchers, although some research projects are more affected than others. Some research activities can continue from home. If you anticipate that your project will become delayed because of the pandemic, it is important to:

- Notify your research department
- Check the guidelines of your funding organization

## Tips:

- Check in with your program officer and discuss impacts on your research. It is important to think creatively about how to sustain your research over at least the next three to five months.
- Plan a weekly conference call with your research team and superiors
  - This allows you to update them on your situation and discuss how to proceed, exchange tips etc.
- Modify your research and analysis if needed
  - Try to switch to remote data collection and storage instead of face-to-face interaction and lab data. If you do modify your research, make sure you get approval from your superiors.
- Protect your human participants and animal subjects, if applicable
- Do the things that you never have time for
  - i.e. take a course, write a proposal, or finish your research article

# Working from home: mental health

When working from home, it is important to stay mentally and physically healthy.

These tips can help:

- Schedule your working hours
- Create a morning routine
- Establish a dedicated working space within your home
- Plan your day: review to-do list, make prioritized planning
- Take regular breaks to do something completely different
- Prioritize social interactions: i.e. with colleagues, friends, family over the phone
- Remember to exercise and get fresh air
- Mark the end of your working day
- Do not be too hard on yourself when you have an unproductive day



# Want to publish a scientific article?

## Consider open access!

Open access means the free availability of research and scholarly outputs on the public internet . It is explained in more detail in this [YouTube video](#)

## Need inspiration?

### Open Access Publishers:

Springer: [Open Access Journals](#) and [Open Access Books](#)

Elsevier: [Open Access Journals](#)

Wiley: [Open Journals](#)

### Links to Open Access Directories

Directory of Open Access Journals can be found [here](#)

Directory of Open Access Books can be found [here](#)  
[ScienceOpen.com](#) is a platform for scientific communication

### Improve your skills

There are many courses and blogs available on doing research, academic writing, publishing, structuring your article etc.

- For EdX writing courses, click [here](#)
- Or look at the [90 Free Online Courses to Improve Your Writing Skills](#)
- See also the course recommendations in the next chapter on professional development

And [here](#) is a Webinar on conducting qualitative fieldwork during COVID 19'

# Professional development



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# Online courses for professionals

- There are many opportunities for academic professionals to keep developing themselves
  - This could be learning a new useful skill (such as learning a programming language), getting more knowledge on a specific topic within your own field or learning something from a completely different expertise etc.
- You can follow many courses online at your own pace, that are either free or inexpensive
- The offer of courses is updated regularly, so keep checking the resources!

# Tools and resources

Where to find these courses:

- [EdX](#)
  - Massive open online course (MOOC) provider, hosts online university-level courses in a wide range of disciplines to a worldwide student body
- [Coursera](#)
  - Massive open online course (MOOC) provider, collaborating with both Universities and businesses
- Open courseware is provided at many top universities, for example:
  - [TU Delft](#)
  - [Yale University](#)
  - [Harvard](#)
  - [MIT](#)

Other websites (non-exhaustive list) that provide similar services:

<https://www.futurelearn.com/>

<http://www.openculture.com/freeonlinecourses>

<https://www.udemy.com/>

<https://alison.com/>

<https://academicearth.org/>

# Course recommendations: academic skills

Free online courses on academic skills for educators and researchers:

Course title	Organizer	Course description	Link
<b>Open Science: Sharing Your Research with the World</b>	TU Delft, through EdX	Explore ways to apply Open Science principles to academic work - including your own. Learn how to share your research effectively and responsibly, building greater visibility and impact.	<a href="#">Link</a>
<b>Research Methods: An Engineering Approach</b>	Wits University, through EdX	Learn how to successfully design your research and understand the underlying principles of postgraduate research from an engineering perspective.	<a href="#">Link</a>
<b>LaTeX for Students, Engineers, and Scientists</b>	IIT Bombay, through EdX	Explore a new way of writing and typesetting articles, books, papers, etc. using a document preparation system called LaTeX.	<a href="#">Link</a>
<b>Qualitative Research Methods: Conversational Interviewing</b>	MIT, through EdX	A short course that will teach you how to prepare for and conduct conversational interviews, that will produce rich qualitative data.	<a href="#">Link</a>
<b>EmSAT English Preparation - Level 1 and 2</b>	UAEU, through EdX	This comprehension and production course focuses on the pre-intermediate level and develops the learner's reading, listening and study skills.	<a href="#">Level 1</a> <a href="#">Level 2</a>
<b>Scientific Methods and Research</b>	Ural Federal University through EdX	Learn how to conduct research based on scientific methodology and analyze scientific articles and conduct experiments.	<a href="#">Link</a>
<b>Introduction to Data Analysis using Excel</b>	Microsoft, through EdX	Learn the basics of Excel, one of the most popular data analysis tools, to help visualize and gain insights from your data.	<a href="#">Link</a>
<b>Academic Writing Made Easy</b>	TUM, through EdX	This course takes you through the basics of academic writing: from structuring and organizing an academic text to avoiding common pitfalls that can negatively affect your credibility.	<a href="#">Link</a>
<b>English Grammar and Style</b>	UQ, through EdX	Learn key concepts and strategies in grammar and style to help enhance your writing.	<a href="#">Link</a>

More free, self-paced courses for academic skills can be found at EdX en Coursera

# Course recommendations: programming

When it comes to programming, you may want to look into [Python](#). Python is an interpreted, high-level, general-purpose programming language. A global community of programmers develops and maintains CPython, an **open source** reference implementation.

The Python Standard Library can be found [here](#)

Course title	Organizer	Link
<b>Introduction to Python: Absolute Beginner</b>	Microsoft through EdX	<a href="#">Link</a>
<b>Introduction to Python: Fundamentals</b>	Microsoft through EdX	<a href="#">Link</a>
<b>Using Python for Research</b>	Harvard University through EdX	<a href="#">Link</a>
<b>Python for Exploratory Computing</b>	Mark Bakker, TU Delft	<a href="#">Link</a>
<b>Python for Everybody</b>	University of Michigan through Coursera	<a href="#">Link</a>
<b>Analytics in Python</b>	Columbia University	<a href="#">Link</a>

*OKP 'Climate Proof Vietnam'  
version, made for Hanoi University  
of Natural Resources and  
Environment, Hanoi, Vietnam*

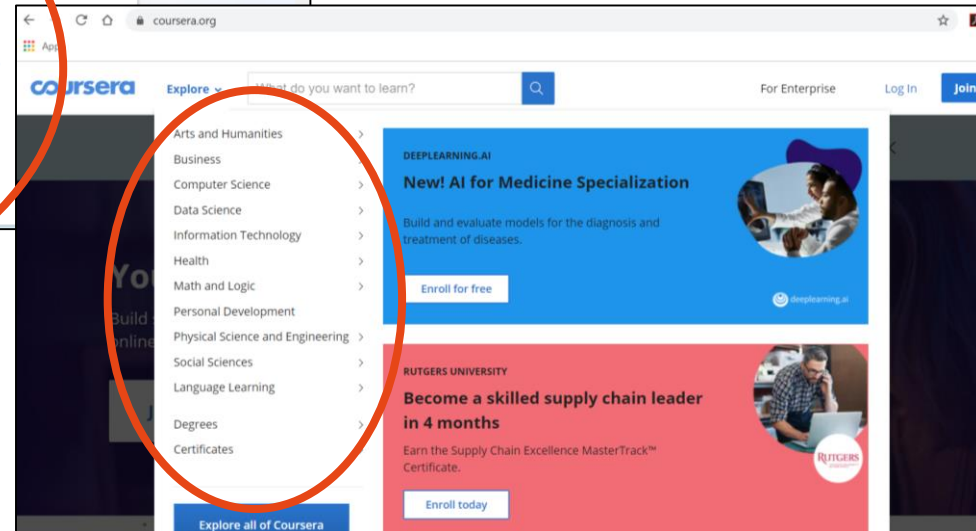
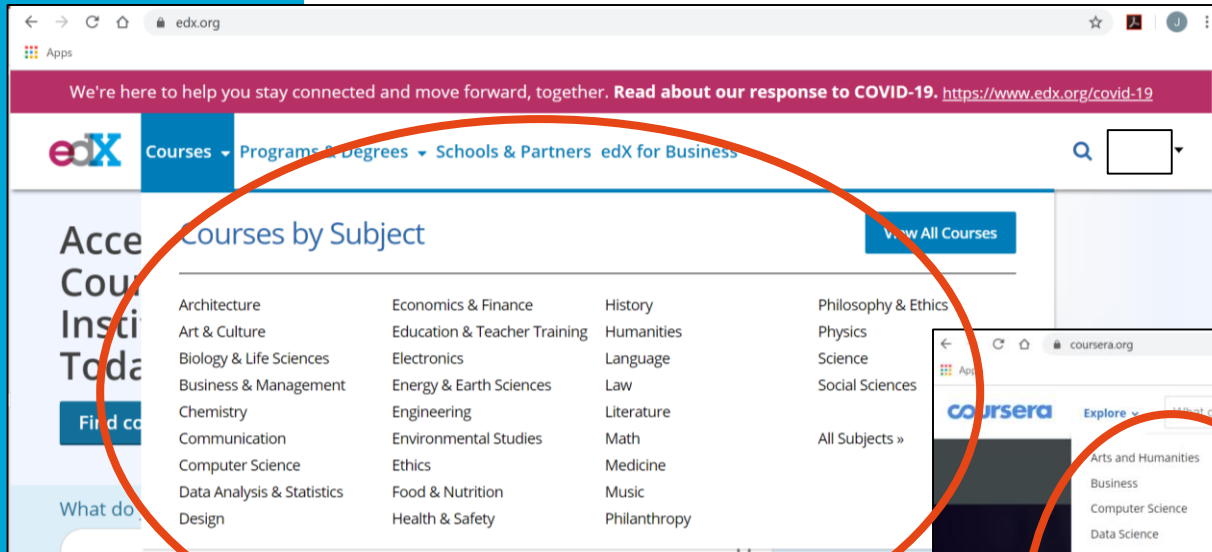
More free, self-paced Python courses can be found at:

[https://www.edx.org/course?search\\_query=python](https://www.edx.org/course?search_query=python)

[https://www.coursera.org/search?query=python&index=prod\\_all\\_products\\_term\\_optimization](https://www.coursera.org/search?query=python&index=prod_all_products_term_optimization)

# Course recommendations: content

Endless possibilities...



*OKP 'Climate Proof Vietnam' version, made for Hanoi University of Natural Resources and Environment, Hanoi, Vietnam*

# TU Delft EdX courses



Photovoltaic Technologies



Photovoltaic Energy Conversion



Sustainable Energy



Leadership for Engineers



Framing



Responsible Innovation



Urban Sewage Water



Water & Climate



Sustainable Urban Development



The Value of Business Models



Wind Energy



Sustainable Urban Freight Transport



Photovoltaic in Microgrids



Photovoltaics Systems



Introduction to Solar Energy



Cyber Security Economics



Topology of Condensed Matter



Pre-University Calculus



Drinking Water Treatment



Aeronautical Engineering



Business Model Metrics & Tools



How to Design a Business Model



Dutch Urbanism



Big Data Strategies



Quantum Cryptography



Data Analysis to the MAX()



Advanced Transport Phenomena



Credit Risk Management



Observation Theory



Building with Nature



Open Government



Nuclear Energy



Business Model Implementation



Business Model Testing



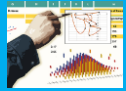
Programmeren voor kinderen



Mathematical Modelling



Quantum Internet & computers



Data Analysis: Dashboard



Big Data Strategies



Delft Design Approach



Image | Ability



Functional Programming



Next Generation of Infrastructure



Healthy Aging in 6 Steps



Entrepreneurship for Engineers



Railway Systems Engineering



Programmeren voor leerkrachten



Rethink the City



Geoscience



Management of Engineering Projects



Sustainable Building Adaption



Design Practice in Business



Solving Complex Problems



Basic Transport Phenomena



Circular Economy



Entrepreneurship for Global Challenges



Engineering Design for a Circular Economy



Globally Distributed Software Engineering



Co-Creating Sustainable Cities



Forensic Engineering



Mastering Complexity



Funding of Projects Successfully



Mind of the Universe



Design in Healthcare



Industrial Biotechnology



Design through physical & digital models



Electric Cars: Introduction



Electric Cars: Technology



Electric Cars: Business



Electric Cars: Policy



ROS: Robot Operating System



Effective Decision Making



Influence Stakeholders



Communicate Effectively



Sustainable Packaging in a Circular Economy



Automated Software Testing



Adv. Automated Software Testing



Waste management and critical raw materials



Building Blocks of a Quantum Computer 1



Building Blocks of a Quantum Computer 2



Open Science: Sharing Your Research





# Useful links and further reading

- TU Delft remote teaching and learning tips: <https://brightspace-support.tudelft.nl/remote-teaching-learning/>
- MIT remote teaching and learning tips: <http://teachremote.mit.edu/>
- Harvard remote teaching and learning tips: <https://teachremotely.harvard.edu/>
- Blogs and advice websites:
  - <https://www.chronicle.com/article/Going-Online-in-a-Hurry-What/248207>
  - <https://www.insidehighered.com/views/2020/03/10/prepare-move-online-continuity-planning-coronavirus-and-beyond-opinion>
  - <https://www.chronicle.com/interactives/advice-online-teaching?cid=rclink>
  - <http://www.moseswrites.org/onlineeducation.html>
  - <https://alicekeeler.com/>
- Worldwide trends on twitter: <https://twitter.com/hashtag/connectuniversitiesNL?s=08>

# Reference links

<https://brightspace-support.tudelft.nl/wp-content/uploads/2020/04/20200330-Guidelines-on-Online-Oral-Exams-for-Lecturers.pdf>

<https://brightspace-support.tudelft.nl/drawing-up-open-exam-questions-for-remote-exams/>

<https://brightspace-support.tudelft.nl/individual-and-group-assignments/>

<https://brightspace-support.tudelft.nl/remote-assessment/#available-remote-assessment-types>

<https://brightspace-support.tudelft.nl/remote-assessment-oral-exams/>

<https://brightspace-support.tudelft.nl/remote-teaching-learning/>

<https://lindsayannlearning.com/7-free-online-discussion-tools/>

<https://www.apa.org/news/apa/2020/03/conducting-research-covid-19>

<https://www.goodfirms.co/blog/best-free-open-source-exam-software-solutions>

<https://youlearn.ou.nl/web/hulp-bij-online-onderwijs/digitale-didactiek>