

How to produce an online course: Development process for online courses supported by a UEG Activity Grant

UEG online courses aim to provide high-quality educational material based on the curriculum defined by the ESBGH Blue Book [<http://www.eubogh.org/blue-book/>]. They last for 1 hour and generally consist of PPT slides accompanied by a bespoke video presentation, plus a pre-course and post-course assessment and summary infographic. We actively encourage the integration of interactive elements throughout our online courses and seek to incorporate beneficial new educational concepts and tools when appropriate. CME accreditation is sought for all UEG online courses and the main requirements for accreditation are incorporated here. UEG online courses can be found on the website [<https://www.ueg.eu/education/online-courses/>] and accessed by signing in to your myUEG account.

Phase 1 Finalisation of the storyboard, including the budget and timelines

Step 1: Introductory call with the UEG e-learning team

An initial call will be held to introduce the UEG e-learning team and set expectations for how we will interact throughout the project phases.

Step 2: Course considerations

Target audience

- Define the target audience upfront (characteristics and specific learning needs)
- Be clear about why the learners need this specific online course
- Understand the motivation of the learners (only to get CME credits?)

Learning objectives

- “Learning objectives describe what learners will be able to do upon completion of the course. The main goal of learning objectives is to define the scope of the online course and help learners focus on specific outcomes.” (Arshavskiy, 2013).
- Gather relevant data to determine the learning objectives (e.g. as included in the ESBGH Blue Book)
- Describe the learning objectives up front and know what the learners should be able to do after completing the online course
- Understand the skills required to achieve the learning objectives

Content

- Ensure that the content maps to the learning objectives, meets the final learning goals and can be covered within a 1-hour timeframe
- Gather relevant data to be able to determine the content of the online course

Assessment method

A form of self-assessment must be used to

confirm learner engagement and achievement of the learning objectives.

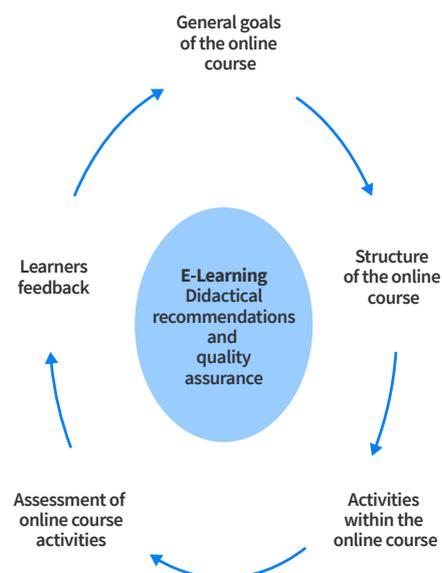
- Have a clear idea about what self-assessment methods exist
- Determine the specific assessment methods and activities to be used (see also Phase 2 of this document)

Step 3: Prepare your budget

- Understand what your costs will be (e.g. meetings, recordings, copyright permissions, freelancers, etc.)
- Draft a realistic budget that is in line with the budget submitted with the original AG application

Step 4: Plan your project timeline

- Be realistic about the time required to complete each phase of the project
- Draft a realistic timeline that will allow the major project milestones to be met



Project phases

- **Phase 1** Finalisation of the storyboard, including the budget and timelines
- **Phase 2** Submission of the main elements of the course (e.g. recordings, slides)
- **Phase 3** Final publication, including application for EACCME CME accreditation

Step 5: Define roles

Clearly defined roles are essential to prevent responsibilities from overlapping and to help manage and meet expectations.

- Decide who will be the lead author and act as a guarantor for the content of the online course
- Be clear who will take responsibility for delivering the various elements of the online course

Step 6: Develop a storyboard

Visualising how you want the online course to appear and function is important to help shape its design and implementation.

- Follow a didactical concept, consider all components individually and then put everything together
- Didactical concept
- Structure – Overview
- Activities within the online course
- Assessment of online course activities

Phase 2 Submission of the main elements of the course (e.g. recordings, slides)

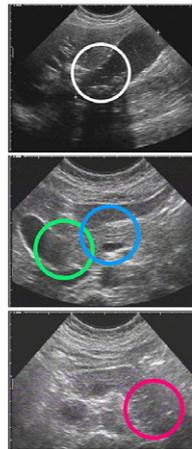
Step 1: General considerations

- We recommend a maximum of 50 slides for a 1-hour online course
- Short blocks of material work well for keeping the learners' attention, so the course should be broken down into sections
- Content should be evidenced based and notes on the level of evidence provided as appropriate
- Use international terminology, such as the recommended international nonproprietary name (rINN) for pharmaceutical agents, throughout, and SI units where appropriate
- Use British English spelling
- We recommend that the text is reviewed by a professional editor

Diagnosis

Abdominal ultrasound

- Sensitivity: 60% 80% 28%
- Specificity: 75–90%
- Examiner-dependent method
- Pancreas visible in only 60–80% of cases
- Examination of choice for evaluation of biliary pancreatitis
- Sensitivity for detection of cholecystolithiasis is 95% and for choledocholithiasis is 50%



Images from Surlin V, et al. *World J Gastroenterol* 2014; 20: 16544–16549 © 2014. ueg.eu

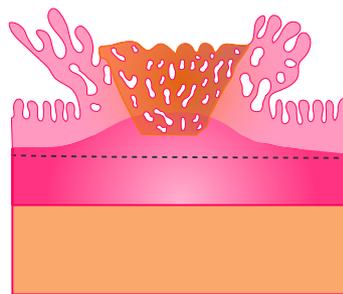
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preferred to accompany the PPT slides, as this works well for engaging the learners (for an example, please visit [<https://ueg.eu/p/179>])

- Voiceovers are an option only if video recordings are not possible/appropriate and you are comfortable recording them on your computer or tablet
- We recommend allowing a day for filming, though it generally doesn't take that long to capture all the required material for a 1-hour online course
- Ask whether the recording studio/team can film with a 'teleprompter' system, and whether it can display PowerPoint slides or simple text (in which case a script will need to be developed in advance of the recording)
- Further information on the technical requirements will be provided separately

Step 2: Slide formatting

- Use the UEG Education PowerPoint template provided
- Don't overcrowd the slides—let figures and tables speak for themselves
- Create a visual hierarchy and apply it consistently
- Main heading: Displayed in the header of each slide and used to define the main sections of the course
- Subheading: Displayed at the top of each slide (under the main heading) and used to subdivide the main sections
- Text: Ideally provided as bullet points, up to 10 lines of text (15 pt Arial font) per slide
- References: Should be included as 15pt blue Arial superscript numbers
- Credits lines/copyright permissions for third-party material must be included in 9pt blue Arial font at the bottom of each slide



third-party material and the information provided clearly on the relevant slides (e.g. via Copyrights Clearance Center's RightsLink® Service)

- It is not always possible to secure the rights needed for third-party material to be reproduced or modified, or they may be costly to obtain, so we highly recommend preparing original display items (tables, graphs, figures and videos) wherever possible
- Information on how to interact with the UEG-recommended freelance art editor can be provided on request
- Original figures will be added to the UEG Image Hub and made available via a creative commons license

Details of UEG-recommended recording studios are available

Step 6: Pre-course and post-course assessment

A form of self-assessment must be included to confirm learner engagement and achievement of the educational objectives, and to meet the requirements of EACCME CME accreditation.

- Several types of assessment question are available in the course authoring tool (e.g. multiple-choice questions, free-choice questions, drag-and drop questions) and guidance will be provided separately
- 10 pre-course self-assessment questions and 10 post-course self-assessment questions should be provided
- 10 minutes of the 1-hour course should be allocated to the post-course assessment

Step 7: Infographic

UEG online courses are accompanied by a high-quality summary infographic, which is freely available to learners who complete our courses and respond to a short feedback survey.

- Please ensure the infographic conveys the major take-home messages of the course
- Original artwork only should be included on the infographic

We request that the UEG-recommended freelance art editor prepare the infographic layout and artwork



A UEG-recommended freelance art editor is available for slide formatting

Step 3: Display items (original and third party, including copyright permissions)

Responsibility for copyright permissions for third-party material lies with the online course authors (as per the UEG Permission for Publication form).

- The correct copyright permissions must be obtained for any previously published



We request that the UEG-recommended freelance art editor prepares any original figures

Step 4: References

- Provide full citation information for the references in a separate Word document (including links to the online version)
- Follow the Vancouver reference style as outlined in the UEG Education reference style document in the file library

Step 5: Video footage/voiceover files

It is expected that recordings/video files will form a major part of any online course, and that they will be hosted on the UEG server.

- Bespoke direct-to-camera video footage is

Online course overview Epidemiology and Aetiology of Inflammatory Bowel Disease

Klaartje Bel Kol and Charles Murray

Background

- Ulcerative colitis impacts only the large intestine → inflammation is continuous and restricted to the mucosa
- Crohn's disease impacts any part of the gastrointestinal tract → inflammation can occur in patches, penetrate beyond the intestinal wall and complications may develop
- Exact causes of IBD are unknown
- Mixed genetic and environmental factors

Genetics

- There is clear evidence that IBD has a genetic basis
- A positive family history is the strongest risk factor for the development of IBD
- GWAS studies have identified >200 IBD susceptibility loci
- GWAS studies together with whole genome sequencing studies of monogenic IBD like diseases have identified gene pathways involved in IBD disease biology
- Many pathways impact host-microbiome interactions
- Epithelial barrier function
- Innate immunity
- Adaptive immunity
- Tolerance
- Genetic risk overall explains only 8-13% of disease risk

Environmental factors

- Multiple indicators that environmental factors have a major role in the aetiology of IBD
- Limited genetic link (maximum 50% concordance for identical twins with Crohn's disease)
- Increased incidence upon migration to areas of high IBD prevalence
- IBD rises with industrialization, which is associated with various lifestyle changes
- Strongest evidence is for environmental factors affecting the microbiome
- Breastfeeding
- Antibiotic use in childhood
- Identifying modifiable environmental factors is challenging, many factors have been studied

Epidemiology

- Prevalence exceeds 0.3% in the Western world
- High economic burden
- Incidence in Western countries is stabilising
- Incidence in newly industrialised countries is accelerating rapidly and has probably not peaked
- Epidemiological shift is associated with changes that occur with rapid socioeconomic development
- Industrialization
- Environmental factors
- Dietary changes
- IBD is now a global disease

Microbiome

- Many indicators that the microbiome is involved in IBD pathophysiology
- Susceptibility genes affecting host-microbiome interactions
- IBD can respond to antibiotic treatment
- Faecal diversion is used as a treatment for Crohn's disease
- Antibiotic use in early childhood is associated with increased risk of Crohn's disease
- Microbiome studies show a role for dysbiosis—a reduction in microbial diversity (richness and evenness)
- Dysbiosis
- Occurs early in IBD
- Contributes to disease onset and/or develops in the course of IBD and contributes to disease progression and chronicity
- Environmental factors, including inflammation, further contribute to dysbiosis
- Evidence demonstrating direct causality is lacking
- Mostly cross-sectional studies—there are no longitudinal studies
- In all likelihood, IBD dysbiosis is dynamic and can be causative, contributory and consequential to disease

Step 2: Evaluation of the course

Evaluation of online courses is required for CME accreditation.

- UEG manages an online course evaluation system
- Evaluation results can be provided on request
- The questions included in the evaluation process are designed to receive output for various categories:
 - Course expectations
 - Course structure and content
 - Assessments
 - Timing
 - Online course navigation
 - Multimedia (recordings)
 - Interactivity
 - Overall experience

Step 3: Accreditation of the course

- UEG will submit an application for CME accreditation to the UEMS-EACCME immediately after the launch of the course—the cost of the application will be allocated from the course budget
- Further information on the accreditation of e-learning material by EACCME can be found on the UEMS website (<http://www.uems.eu/uems-activities/accreditation/eaccme>)

Documents to read in the file library:

- UEG Permission for Publication
- UEG reference style
- Supporting information template
- Development process for online courses supported by a UEG Activity Grant (<https://bit.ly/2XxFvix>)

Step 8: Supporting information

The following information should be added to the 'Supporting Information' template provided, for upload into the learning management system:

- Stated educational needs
- Description of the course
- Author information
- Conflicts of interest
- Learning objectives
- Target audience
- Assessment criteria
- Date of preparation
- Compliance with ethical, medico-legal and legal requirements
- Confirmation that copyright permissions have been obtained for third-party images

Step 9: Provide the main elements of the course to UEG for review

Phase 3 Final publication, including application for EACCME CME accreditation

Step 1: Upload content into the authoring tool (learning management system [Open edX])

- Open edX provide a guide that describes how to build an online course (https://edx.readthedocs.io/projects/open-edx-building-and-running-a-course/en/open-release-ficus.master/developing_course/index.html)
- Although the authoring tool makes it easy to create an online course, it still takes a lot of work and we encourage you to allocate enough time and resources to achieve good results

UEG recommended freelancer available for implementation of the course into the authoring tool