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

**UG 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 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. The currently available 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.

**Project phases**

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

**Step 1: Introductory TC with the UEG e-learning team**

**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, 70).

  - Gather relevant data to determine the learning objectives and 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 (advice on preparing MCQs is provided in Phase 2 of this document)
  - **Content**
    
    - Ensure that the content maps to the learning objectives and meets the final learning goals
  

**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
- 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 including the major project milestones

**Step 2: Slide formatting**

- Use British English spelling
- Use international terminology, such as the recommended international nonproprietary name (rINN) for pharmaceutical agents, throughout, and SI units where appropriate
- Use the UEG Education PowerPoint template provided

**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 5: Define Roles**

- Clearly defining team roles is essential for preventing 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

**Step 6: Develop a storyboard**

Pre-visualising how you want the online course to appear and function is an important step in helping to 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
Biomarkers of fatty liver and steatohepatitis

Need for novel, noninvasive biomarkers for NAFLD

Noninvasive biomarkers should aim to:
- In primary care settings, identify the risk of NAFLD among individuals with increased metabolic risk
- In secondary and tertiary care settings, identify those with a worse prognosis (e.g. severe NASH)
- Monitor disease progression
- Predict response to therapeutic interventions

NASH has to be diagnosed by a liver biopsy showing steatosis, hepatocyte ballooning and lobular inflammation (A1)

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). Please note that it is not always possible to secure the rights needed for third-party material to be reproduced or modified, or that they may be costly to obtain.
- Prepare original display items (tables, graphs, figures and videos) wherever possible
- UEG recommended freelance art editor available for preparation of figures etc.

Step 4: References
- Provide full citation information for the references in a separate Word document (including links to the online version)
- Follow the SAGE Vancouver reference style, which is the style preferred by the United European Gastroenterology Journal. The full SAGE Vancouver reference style guidelines can be accessed online [https://studysites.uk.sagepub.com/repository/binaries/pdf/SAGE_Vancouver_reference_style.pdf].

Step 5: Video footage/voiceover files
Recordings/video files will be hosted on the UEG server. Bespoke direct-to-camera video footage is preferred to accompany the PPT slides, as this works well for engaging the learners (for an example, please visit https://www.ueg.eu/education/online-courses/}

biomarkersofliverdisease), but voiceovers are an alternative option if 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
- Ask whether the recording studio/team can film with a ‘teleprompter’ system, and whether the system can display PowerPoint slides or simple text (in which case a script will need to be developed in advance of the recording)
- UEG recommended recording studios available
- Information on how a teleprompter works and tips for speakers can be found on YouTube (e.g. “How To Use A Teleprompter—10 Tips”: https://www.youtube.com/watch?v=TH5DHI28sP38)
- Video footage should be provided in blocks that correspond to the sections of the course and last no longer than 50 minutes in total when combined
- Recommended Audio Codec: AAC 44.1KHz/192 Kbps
- Attention: In case you work with SCORM (Shareable Content Object Reference Model), please be aware that SCORM isn’t yet implemented in the UEG authoring tool
- In many cases the recordings cannot be used one to one for producing the course in the learning management system—although the technical provider takes responsibility for the cutting process, you as a contributor will need to:
  - Identify the most relevant content from the recording
  - Identify the basic cut points for the recorded footage
  - Identify gaps in the recorded content and how you might fill them (e.g. with new voiceovers or recordings)
  - Make any necessary post-recording modifications to the PPT slides
  - Redraw any figures as required post-recording
Online courses

Step 6: Pre-course and post-course assessment

Multiple-choice questions (MCQs) or another form of self-assessment must be used to confirm learner engagement and achievement of the educational objectives. MCQs can be designed to test several aspects of learning beyond knowledge recall: predicting results, interpreting facts, understanding cause and effect, making inferences and assessing situations.

- Please provide 20 MCQs ~10 for the pre-course assessment and 10 for the post-course assessment.
- When writing MCQs, keep the following points in mind:
  - The problem presented and the question should be well defined, so there is a clear learning outcome
  - Focus each question and set of answers on a single area and avoid mixing learning points
  - Keep answers short, of a similar length and include one piece of information only
  - Consider whether a question passes the ‘cover-up’ test (ideally the learner should be able to read the problem and answer the question correctly without viewing the answer options)
  - Unless necessary for a significant learning outcome, avoid asking questions with ‘negative’ phrasing (e.g. “Which of the following is not...?”)
  - Provide 3–5 possible answers for each question (we generally provide 4)—there should be one clear best answer, but all answers should be plausible
  - Avoid “all of the above” and “none of the above” as possible answers (they can be a giveaway/encourage guessing)

Step 7: Infographic

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

- If you would like to develop an infographic for your course, we request that you work with our recommended freelance art editor to prepare the layout and artwork
- Please ensure the infographic conveys the major take-home messages of the course
- Please include only original artwork

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 and 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

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])

- 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 freelance available for implementation of the course into the authoring tool

Step 2: Evaluation of the course

- 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 elements (recordings)
  - Interactivity
  - Overall experience

Step 3: Accreditation of the course

- UEG will submit an application for CME accreditation to the UEMS-EACCME (at www.eaccme.eu) to coincide with the planned launch date for 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://www.ueg.eu/fileadmin/user_upload/documents/awards/activity_grants/Documents_to_read_in_the_file_library.zip