



Faculty of Media
and Communication

Coursework Assignment Brief

2019/20

MSc CAVE

Level 7

Simulation and Rendering

Title: Rendering Project

This assignment is a formal element of coursework worth 50% of the overall unit mark (Each piece of coursework may vary according to the unit)

THE BRIEF

Use RenderMan and its associated API to model, and render a simple scene containing a single object.

Assessed Learning Outcomes:

1. have an in depth understanding of the techniques and systems used in modern production rendering systems
2. demonstrate the ability to solve complex simulation and rendering problems through the synthesis of current research and industry practice

Guidelines:

Select a simple real world object. Don't choose something overly complex, as marks are for accuracy and attention to detail, rather than ambition. A ball or piece of fruit would both be suitable candidates.

- a) Take photographs of the object to support and document each stage of the project.
- b) Model it using simple primitives, either directly in RIB, or another RenderMan API (such as the C or Python API's).
- c) Identify and implement an appropriate BRDF model (or models) for the object.
- d) Identify and implement any distinct patterns of texture or displacement on the object using procedural and/or painted textures as appropriate.
- e) Add natural variation and wear to the object using noise and related techniques.
- f) Shoot or borrow a suitable environment map (HDR is optional), and add it to your objects lighting model.
- g) Place your object (or multiple instances of it) within a minimal scene: typically a textured ground plane should be adequate.
- h) include motion blur, depth of field or other camera artefacts as appropriate.

Tasks a-h nominally carry equal weighting. However it is recognised that depending on the object (and approach) selected these tasks may vary in complexity, and so marks will be assigned accordingly. Marking will be based 50% on the report, 30% on supplied images, and 20% code.

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SUBMISSION DETAILS

You must submit:

A short report. For each of the required tasks you should (typically) write two paragraphs - one analyzing the real object, and a second describing the implementation. The report should be approximately four pages in length, and should be formatted to SIGGRAPH or EUROGRAPHICS specifications.

Two images of the rendered object at 1080p resolution.

All source code and textures required to recreate the images.

You must acknowledge your source every time you refer to others' work, using the Harvard System (Author Date Method), or the referencing system required by the document specification you have chosen. Failure to do so amounts to plagiarism, which is against University regulations. Please refer to www.bournemouth.ac.uk/library for the University's guide to citation in the Harvard style. SIGGRAPH formatting instructions may found at <http://www.siggraph.org/publications/instructions/>. EUROGRAPHICS publication format is defined at <https://www.eg.org/wp/eurographics-publications/guidelines/>

In addition to this any 3rd party code used in the program / scripts must be suitably referenced. It is assumed you will use the NCCA base code or examples from the lectures so these need not be referenced. However your assignment must be suitably different from any examples given out in the class.

Submit via the assignment submission link in the navigation bar in the appropriate unit on Brightspace. Please be aware of the following restrictions.

- Individual files (including zipped folders) must be less than **200MB**.
- It is strongly recommended that you upload large files while on campus using a University computer.

It is your responsibility to ensure that you are submitting to the correct submission box in the correct unit on Brightspace. You should check and retain your receipt for all submissions. If you are uploading multiple files you should check all files are listed on your receipt.

DEADLINE

12:00 22nd May 2020 Please note that this is the final time you can submit – not the time to submit! Your feedback and mark for this assignment will be provided on 12th June. If you fail your assignment or need further clarification on your feedback please make an appointment to see your tutor.

HELP AND SUPPORT

Weekly lecture/workshop sessions will be held to support this project. Any issues or questions should be addressed within these sessions, or email Ian Stephenson istephen@bournemouth.ac.uk

- **Plagiarism and Self-Plagiarism:** You must acknowledge your source every time you refer to others' work or work that you have previously submitted and been assessed on, using the **Harvard Referencing** system (Author/Date method). Failure to do so amounts to plagiarism or self-plagiarism which is against University regulations.
Please refer to <http://libguides.bournemouth.ac.uk/study-skills-referencing-plagiarism> for further details of this and to <https://www1.bournemouth.ac.uk/discover/library/using-library/how-guides/how-cite-references> for the University's guide to citation in the Harvard style.
Students must ensure that they do not commit any type of Academic Offence. For further information please see: <https://www1.bournemouth.ac.uk/discover/library/using-library/how-guides/how-avoid-academic-offences>
- Plagiarism regulations extend to audio visual materials and work in other media. Archive or other material not generated by yourself or crew must be appropriately captioned when on screen and an acknowledgement to the source of the material included in the end credits or equivalent part of any online material. Failure to do so amounts to plagiarism or self-plagiarism, which is against University regulations.
- Students with **Additional Learning Needs** may contact Learning Support on <http://studentportal.bournemouth.ac.uk/learning/als/index.html>
- General **academic support** is available via the Study Skills community on Brightspace.
- **Additional support** for Faculty of Media and Communication students only is provided by a small team of Learning Development Tutors. Please contact FMCLearningDevelopment@bournemouth.ac.uk to make an appointment.
- If you have any valid **exceptional circumstances** that mean you cannot meet an assignment submission deadline and you wish to request an extension, you will need to complete and submit the Exceptional Circumstances Form for consideration to your Administrator together with appropriate supporting evidence (e.g., GP note) normally before the coursework deadline. Further details on the procedure and the exceptional circumstances form can be found at <https://www.bournemouth.ac.uk/students/help-advice/looking-support/exceptional-circumstances> *Please make sure you read these documents carefully before submitting anything for consideration.*
- Please be mindful that certain actions carry risk which should be adequately assessed before undertaking the activity. Please refer to University/Faculty guidance for clarification.

Disclaimer: The information provided in this assignment brief is correct at time of publication. In the unlikely event that any changes are deemed necessary, they will be communicated clearly via e-mail and via the VLE and a new version of this assignment brief will be circulated.

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(Updated July 2019)