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COMP5812M
Module Reading List

Foundations of Modelling and Rendering, 2021/22, Semester 1

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Tutor information is taken from the Module Catalogue

(http://webprod3.leeds.ac.uk/catalogue/dynmodules.asp?Y=202122&M=COMP-5812M)

The principal textbook and reference for the module is:

Hughes, van Dam et al, *Computer Graphics*
(https://leeds.primo.exlibrisgroup.com/discovery/search?
*query=any,contains,991007092399705181&tab=AlmostEverything&search_scope=My_Inst_CI_not_*
(Third Edition), Addison-Wesley 2014

Students are expected to have completed a prior module in the basics of graphics programming using either OpenGL or DirectX. For those who have not, it is strongly recommended that they review the material in:

Kessenich, Sellers & Shreiner, *Open GL Programming Guide*
(https://leeds.primo.exlibrisgroup.com/discovery/search?
*query=any,contains,991003565819705181&tab=AlmostEverything&search_scope=My_Inst_CI_not_*
(Ninth Edition), Addison-Wesley (2016)

although almost any reasonable OpenGL or DirectX textbook will do.

Students who wish to refresh the relevant mathematics prior to the module are recommended to consider:

Vince, *Mathematics for Computer Graphics*
(https://leeds.primo.exlibrisgroup.com/discovery/search?
*query=any,contains,991007091809705181&tab=AlmostEverything&search_scope=My_Inst_CI_not_*
(Fifth Edition), Springer 2017.

For students wishing more information about concurrent programming, I recommend:

Williams, *C++ Concurrency in Action* *(https://leeds.primo.exlibrisgroup.com/discovery/search?query=any,contains,991004703949705181&tab=AlmostEverything&search_scope=My_Inst_CI_not* (Second Edition), Manning 2019.

However, this covers both distributed and parallel concurrency, and *understanding* concurrent parallelism may be easier through OpenMP:

Chapman, Jost and van der Pas, *Using OpenMP* *(https://leeds.primo.exlibrisgroup.com/discovery/search?query=any,contains,991007003929705181&tab=AlmostEverything&search_scope=My_Inst_CI_not* Press 2007

is also useful.

More information on raytracing is also available in:

Pharr, Jakob & Humphreys, *Physically Based Rendering* *(https://leeds.primo.exlibrisgroup.com/discovery/search?query=any,contains,991015511479705181&tab=AlmostEverything&search_scope=My_Inst_CI_not* (Third Edition), Morgan Kaufmann, 2016, available at www.pbrt.org

Shirley, *Ray Tracing in One Weekend* *(https://raytracing.github.io/books/RayTracingInOneWeekend.html); Ray Tracing the Next Week (https://raytracing.github.io/books/RayTracingTheNextWeek.html); Ray Tracing the Rest of Your Life (https://raytracing.github.io/books/RayTracingTheRestOfYourLife.html),* (Kindle)

Haines & Akenine-Möller, *Ray Tracing Gems* *(https://leeds.primo.exlibrisgroup.com/discovery/search?query=any,contains,991019408887405181&tab=AlmostEverything&search_scope=My_Inst_CI_not* NVIDIA 2019

More information on shader languages is available in:

Rost et al., *OpenGL Shading Language*, Addison-Wesley 2009

Sellers, *Vulkan Programming Guide* *(https://leeds.primo.exlibrisgroup.com/discovery/search?query=any,contains,991019588047305181&tab=AlmostEverything&search_scope=My_Inst_CI_not* Addison-Wesley 2016

DirectX Programming Guide, Microsoft, https://docs.microsoft.com/en-us/windows/win32/direct3d12/directx-12-programming-guide, 2016

This list was last updated on 25/09/2020

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