DM815 Computer Game Programming III: Physics

Spring 2009

Exam Questions

1. Bounding volumes

2. Bounding volume hierarchies

3. Spatial partitioning

4. BSP trees

5. Rigid body simulation

The exam takes place March 30 in the Imada seminar room. The first person draws a question at 10:00, and a new student is taken in every 30 minutes (except for a lunch break). The order of students will be mailed to you by the Imada secretariat.

The exam is without preparation—thus, after you draw a question/topic among the those above, the examination starts immediately. You should plan to make a 15–20 minute presentation using the blackboard (you cannot bring transparencies). We may ask brief questions during your presentation. Afterwards, we may ask questions related to the topic, and to the rest of the curriculum. The exam is not based on the project of the course. The entire examination period (including grading, etc.) is 30 minutes.

The exam curriculum is:

> Chapters 2, 4, 6, 7, 8, and sections 3.4–9, 3.11, and 5.1–3 in: *Real-Time Collision Detection* by Christer Ericson. Published by Morgan Kaufmann, 2005. ISBN 1558607323/978-1558607323.

> All, except Section 6, of the lecture notes by Andrew Witkin from the *Particle Dynamics* part of the 2001 SIGGRAPH Course on Physically Based Modeling (`http://www.pixar.com/companyinfo/research/pbm2001/`).

> All, except Section 4 and appendices A–D, of the lecture notes from the *Rigid Body Dynamics* part of the 2001 SIGGRAPH Course on Physically Based Modeling (`http://www.pixar.com/companyinfo/research/pbm2001/`) by David Baraff.

> All of the note on elastic collision by Chad Berchek (`http://www.geocities.com/vobarian/2dcollisions/2dcollisions.pdf`).