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| **ELEMENT** | **CONTENT** |
| DEPARTMENT | CIS |
| AUTHOR (S) | Craig Damon |
| COURSE NUMBER | **CIS 5210** |
| COURSE TITLE | **Advanced Computer Graphics** |
| SHORT TITLE | Adv Comp Graphics |
| COURSE LEVEL | 5000 |
| DATE CREATED |  |
| CHECKED/CHANGED | 6/9/2017 |
| PREREQUISITES | CIS 3050; MAT 1520 |
| COREQUISITES |  |
| RESTRICTIONS | Graduate standing |
| SPECIAL FEES | No |
| CREDITS | 3 |
| HOURS | 3 hours of lecture per week |
| SEMESTER | As required |
| COURSE DESCRIPTION | This course deals with the computer generation of realistic images of 2-dimensional and 3-dimensional scenes. The course involves substantial computer programing. |
| SUGGESTED TEXTS | *Computer Graphics, Principles and Practice*; Van Dam et al. |
| OPTIONAL TEXTS |  |
| COURSE OUTCOMES | The successful student will be able to:   1. Understand the mechanisms used for 2-D and 3-D rendering 2. Effectively use a mainstream graphic rendering platform such as OpenGL 3. Write a 3-D rendering program for non-trivial objects of scenes |
| COURSE CONTENT | 1. Coordinate systems 2. Coordinate transformations 3. Rasterization 4. Ray tracing 5. Textures 6. Lighting 7. Introduction to OpenGL 8. Shared programming 9. Curves and splines 10. Fractals 11. Extra topics as time permits |
| LAB/STUDIO OUTCOMES |  |
| LAB/STUDIO CONTENT |  |
| LECTURE CAPACITY | 32 |
| LAB CAPACITY |  |
| GRADED OR P/NP | Graded |
| EVALUATION | Homework, project, exams |
| DELIVERY METHOD | LEC |
| ROOM REQUIREMENTS |  |
| AUTHOR’S NOTES | Undergraduate-level cross-listed course is CIS 4210. |