

# Forum: 3D or Not 3D – That is the question!

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## Abstract

Should an introduction to 3D computer graphics and animation be a part of a general core curriculum requirement for all design majors regardless their concentration, track or degree?

At ACM-SIGGRAPH it is taken for granted that a working knowledge of 3D computer graphics is a valuable if not necessary part of a versatile skill set to prepare design graduates for future job opportunities. In an era dominated by dazzling 3D effects in video games, feature films along with the growing use of interactivity and web3D over broadband connections, knowledge of 3D can give a job candidate a competitive edge. With the creation of next-generation Internet2 architectures supporting high-performance networking, there will be a growing need for professionals who think in both “2D” and “3D.” There is a similar convergence of skill sets needed for content creation for video iPods and the next generation of mobile devices. Graphic designers will find freelance opportunities as a spillover from these developments.

A working knowledge of 3D is an obvious requirement to prepare students for the fields of animation, architecture, product design, industrial design, and package design as well as any design field where 3D plays an important role in the profession. It is less obvious that exposure to 3D is necessary for students pursuing advertising design, communication design, graphic design, book design, typographic design, illustration, information design or scripting/programming for website development.

Is a 3D core requirement possibly a waste of time, taking precious credit hours from other courses more relevant to a concentration? What if key decision makers and administrators don't buy into it? What if undergraduate graphic design majors complain that they don't understand why they have to suffer through an introductory course in MAYA?

The “waste of time” objection makes three compelling points. First, to achieve a minimum level of competence in 3D requires at least three semesters of introductory, intermediate and advanced level courses. With 3D the learning curve is steep and varies according to the specialty. With complex applications such as MAYA or 3D Studio Max it takes at least two semesters to develop a functional working knowledge of the interface and menu capabilities. To become proficient at modeling, lighting, texturing or animating requires even more time.

3D is time consuming even for the expert, frustrating for the novice, and after a single semester the results can be disappointing. Wouldn't students' time and energy be better spent on a course in their chosen area of expertise? Finally, in most cases, a single semester's exposure does not lead to work suitable for inclusion in a portfolio or demo reel.

A digital design major in a college of liberal arts at the University level should have depth and breadth, emphasizing both applied and conceptual skills. Yet a B.A. requiring 35% of course work in the major leaves little room in the curriculum for students to explore other areas. However, a B.F.A. with a higher percentage of required course work is better suited to combining a concentration with required exposure in related areas.

Listed below, in no particular order, are some of the arguments pro and con in regard to a 3D core requirement:

- A single intro level 3D course does not provide students with marketable skills or portfolio quality work.
- Introductory knowledge of 3D is essential preparation for tomorrow's job market.
- Exposure to 3D opens doors to both future opportunities in 3D and 2D jobs within the field of 3D.
- A intro 3D course expands design thinking. Students are more likely to think “2D” and “3D.” 2D designers need to understand 3D as part of the design process.
- As part of a liberal arts program, an intro 3D course is the opportunity to broaden horizons, experiment and explore beyond a narrow field of expertise.
- Students need to make an informed judgment based on hands-on experience whether or not to pursue further studies in 3D.
- 3D requires teamwork and working in teams is intrinsic to design in general.
- A required 3D intro course may offset the effects of gender differences, cultural biases, socio-economic disparities that lead to subtle social pressures that steer otherwise qualified students away from studies in 3D.
- Not all course work has to be portfolio quality. Certain courses provide opportunities for experimentation and conceptual stepping-stones to more advanced work.
- According to the AIGA/NASAD, a liberal arts major leading to a B.A. consisting of 35% course work in design doesn't satisfy entry level job preparation, therefore core requirements should not be “pruned” on the basis that they don't serve the major concentration.
- A professional BFA program fulfilling the 65% course work recommended by the AIGA/NASAD is better suited to require a 3D course as part of the general core.

With the rapid changes in new technologies, design curriculums at professional schools, colleges and universities must respond to emerging job opportunities in a rapidly changing industry and at the same time be responsive to the demands of a “client driven” educational marketplace. The best argument in favor of requiring an introductory 3D course as part of the core curriculum of a design major can be found in *The 2006-07 Career Guide to Industries* prepared by Bureau of Labor Statistics:

“Demand for these workers [multi-media artists and animators] will increase as consumers continue to demand more realistic video games, movie and television special effects, and 3D animated movies. Additional job openings will arise from an increasing demand for Web site development and for computer graphics adaptation from the growing number of mobile technologies. The best job opportunities in the future will be for those who have good computer skills and can work in multiple mediums.”

## References

- Bureau of Labor Statistics. 2006. *The 2006-07 Career Guide to Industries*. <http://www.bls.gov/oco/cg/cgs038.htm>.
- AIGA/NASAD. 2006. *Degree Programs And Graphic Design*. [http://www.aiga.org/resources/Content/1/4/8/documents/degree\\_programs.pdf](http://www.aiga.org/resources/Content/1/4/8/documents/degree_programs.pdf)