Information technology in the classroom and beyond …

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When I went to college…

- Prior to 1977
  - ❑ Slide rule
- 1977 – 1980
  - ❑ Programmable calculators
  - ❑ Mainframe computer (DEC/VAX)
  - ❑ One interactive computer by 1980
- 1980 – 1984
  - ❑ PCs in the workplace
- 1984 and later
  - ❑ Workstations
  - ❑ "Email"
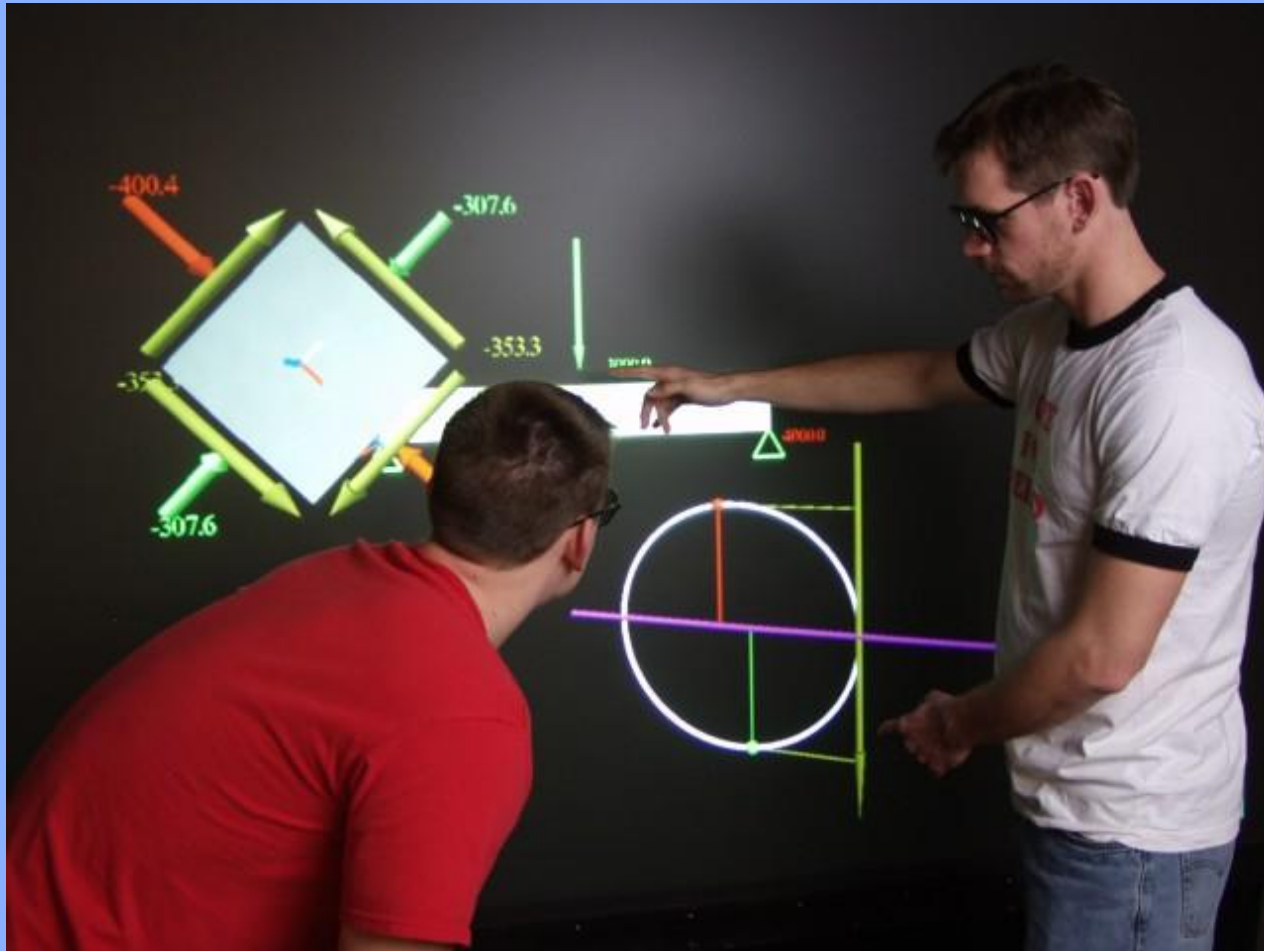 - ❑ Laptops, PDAs, Cell phones, etc.

Now…

- Virtual Reality

- Streaming video

- Tablet PCs

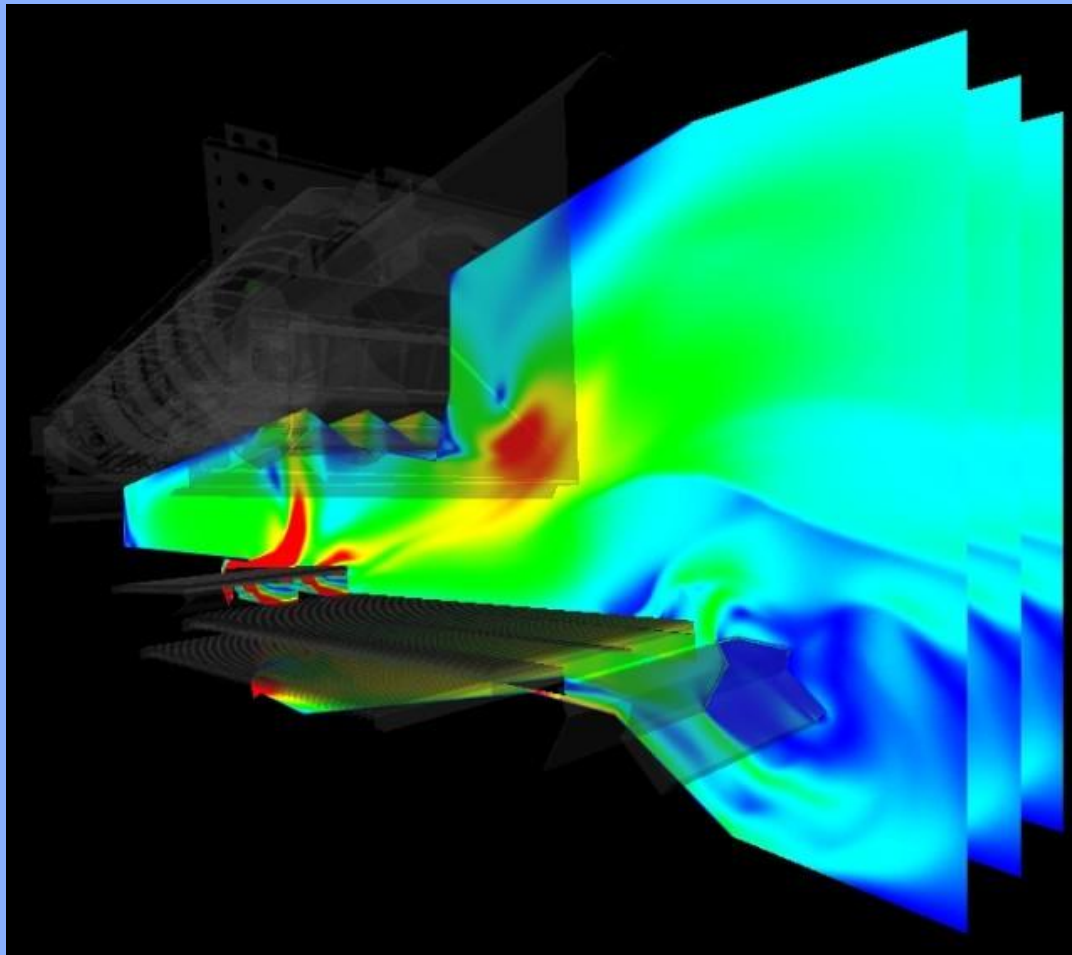- Distance Education

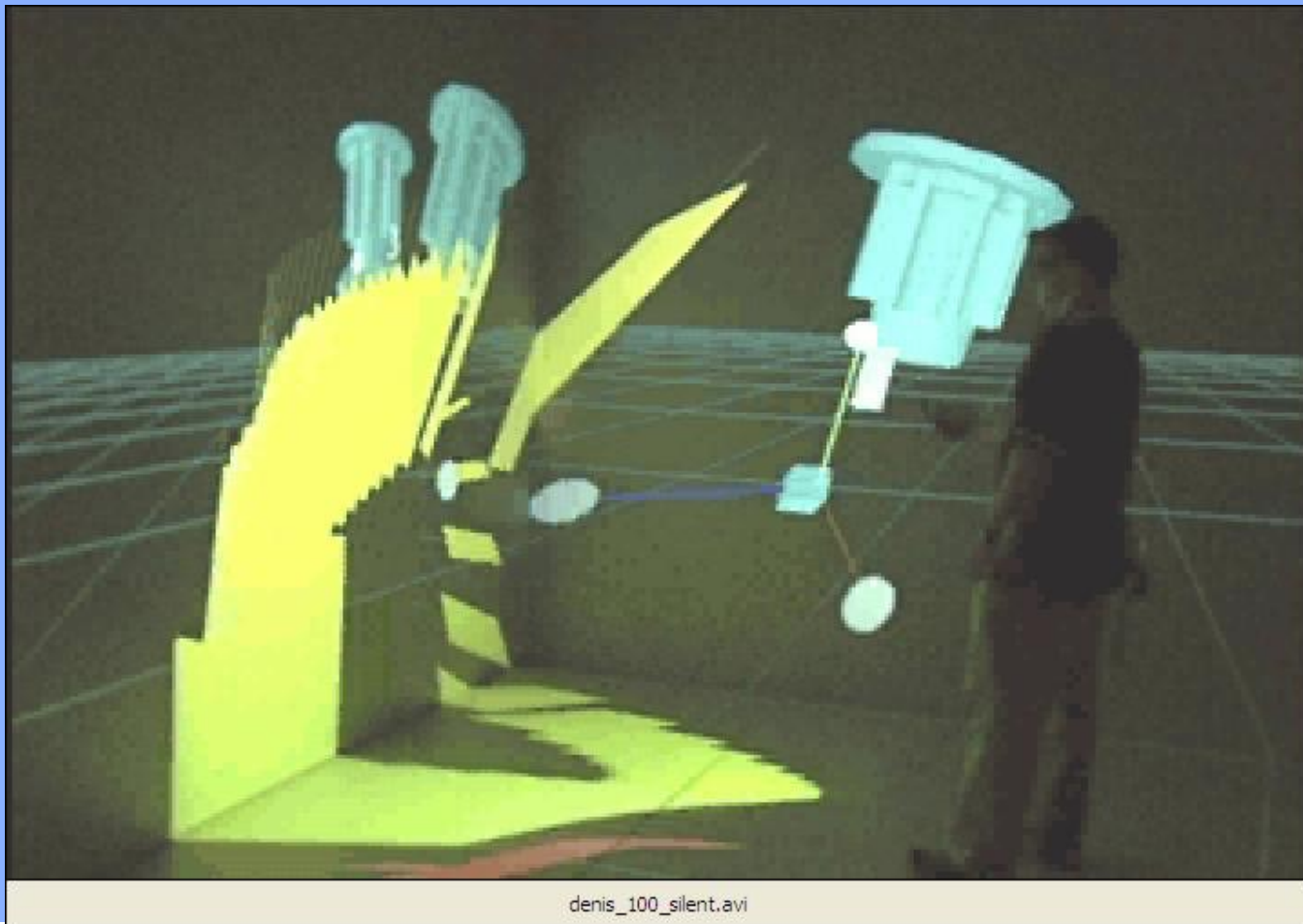   … on and off campus

Bringing VR to the Classroom

3D immersive CAD models

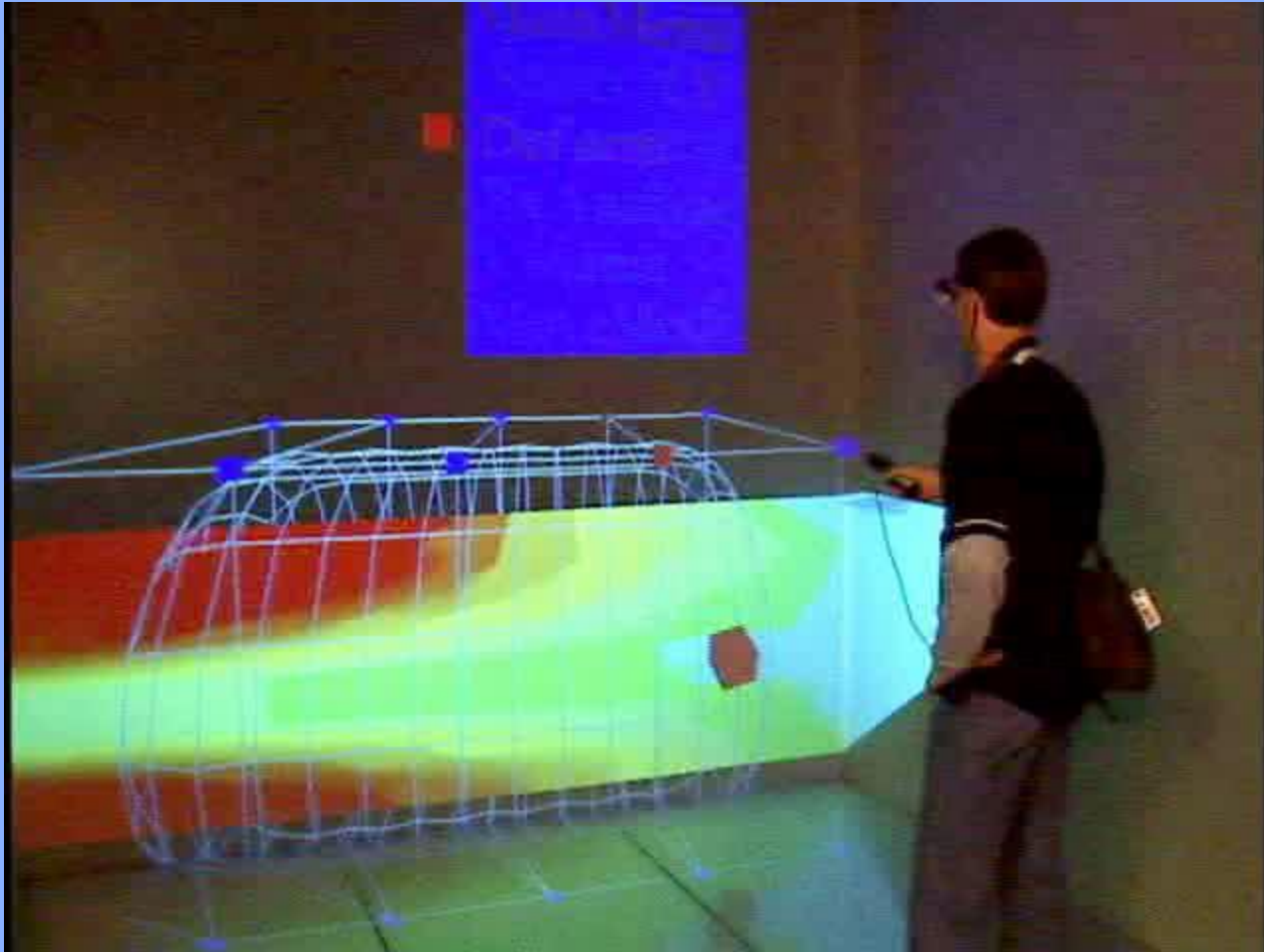# Computational Fluid Dynamics

Spatial Mechanism Design

denis_100_silent.avi

Finite Element Analysis

C6 – Virtual Reality Facility

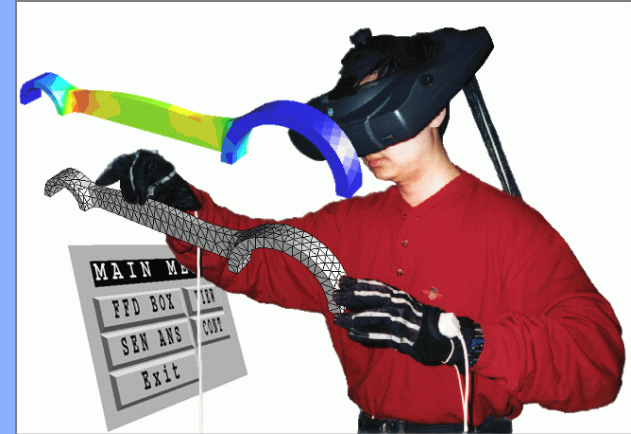# C6 – Virtual Reality Facility

C6 – Virtual Reality Facility

3 Million Dollars

Affordable VR

One wall immersive stereo system

- Computer $5000
- Graphics card $1500
- 2 projectors $5000
- Screen $2000
- Mounting hardware $1000
- Polarization filters $ 300
- Misc $ 200

One wall immersive stereo system

- Computer $5000
- Graphics $1500

15,000 Dollars

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- Screen $2000
- Mounting hardware $1000
- Polarization filters $ 300
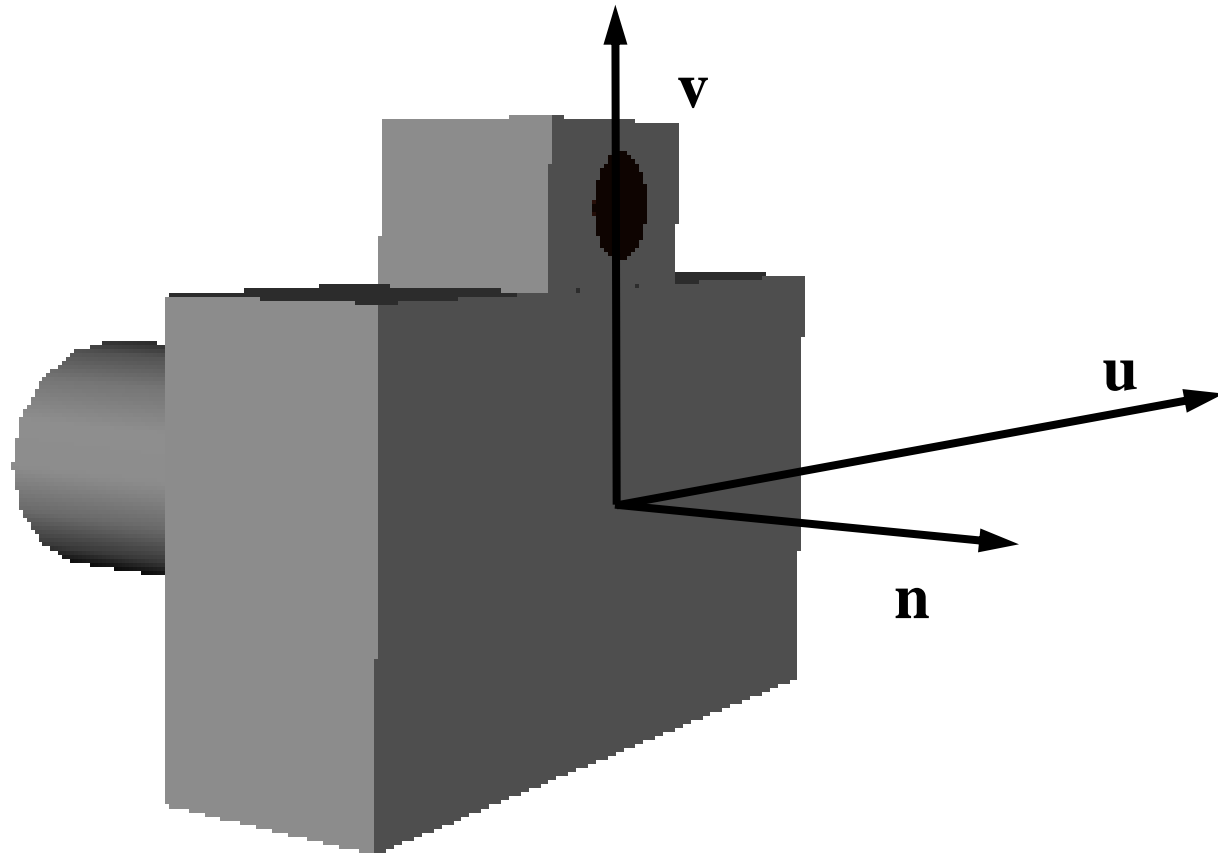- Misc $ 200

Streaming Video

Computer Graphics and Geometric Modeling
Professor Adrian Sannier

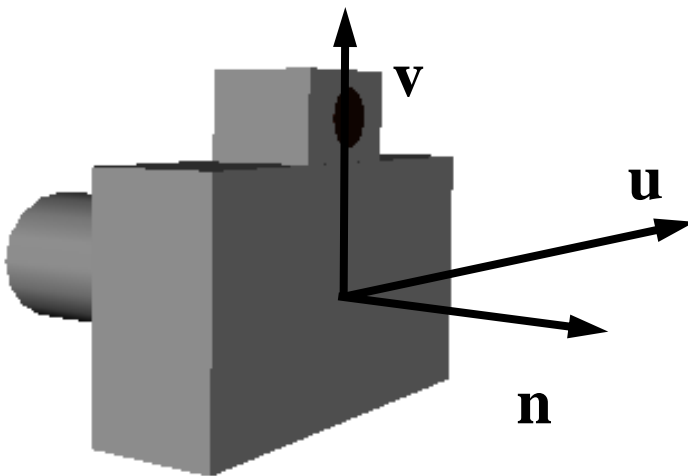# ME/IE/CprE557 Lecture 20
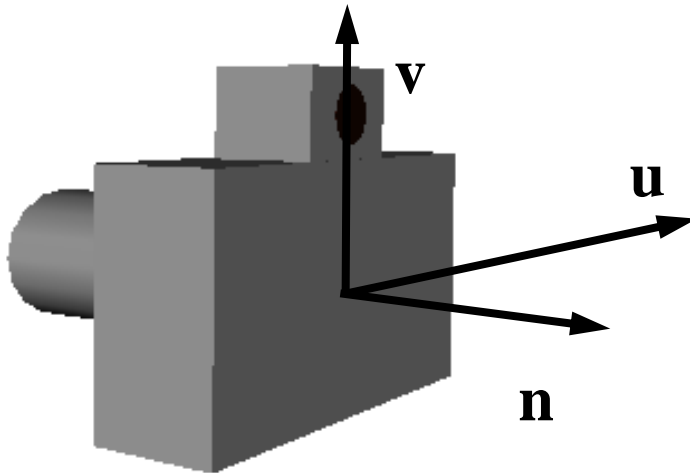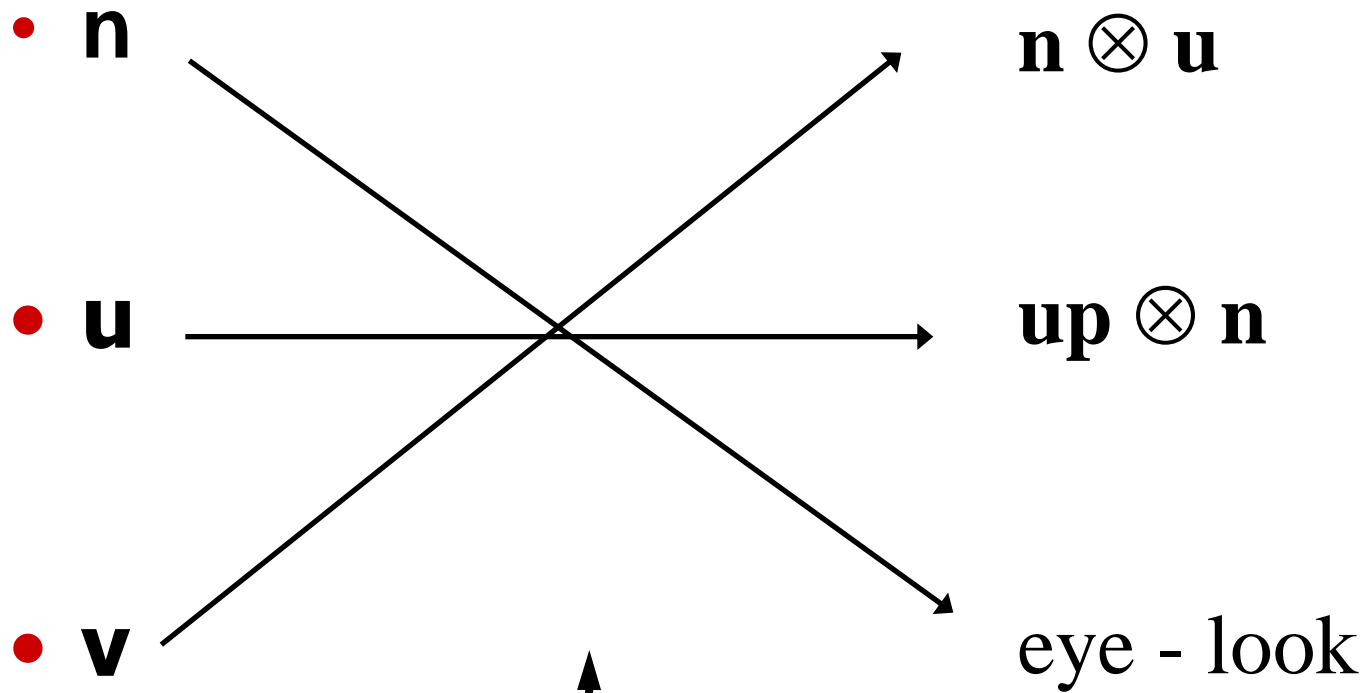
Camera Coordinate System

Default position: placed at origin, looking down the –z axis.

- Pitch

- Roll

- Yaw

Rotate about **v** axis

u - **n** plane

Rotate about **u** axis

v - **n** plane

Rotate about **n** axis

u - **v** plane

n: view plane normal

- **n**
- **u**
- **v**

$\mathbf{n} \otimes \mathbf{u}$

$\mathbf{up} \otimes \mathbf{n}$

eye - look

Computer Graphics and Geometric Modeling – Use of Technology

- Ties lectures to textbook assignments
- Simultations, sample code
- Captures not only written content but instructor presentation
- Means to provide continuity in course content/management from semester to semester (Web CT)
- Allows for distance education offerings

Technology, Globalization and Culture

This course provides a cross-disciplinary examination of the present and future impact of globalization with a focus on preparing students for leadership roles in diverse professional, social, and cultural contexts. We will examine the threats and opportunities inherent in the globalization process as they are perceived by practicing professionals and articulated in debates on globalization. Students will be expected to contribute critical analyses and debate through threaded discussions and will work collaboratively on final projects.
The course will call for the students to read widely on the topic of globalization and to keep up with related current events. The course will meet twice weekly to interact with on- and off-campus experts concerning various facets of globalization.

Technology, Globalization and Culture

Textbooks :

Globalization, Malcolm Waters

NoLogo, Naomi Klein

The Work of Nations, Robert Reich

The Lexus and the Olive Tree, Thomas
                                    Friedman

As the Future Catches You, Juan Enriquez
and selections assigned by speakers.

Syllabus

Streaming Video

Technology, Globalization and Culture
Professor Jim Bernard
Professor Mark Rectanus

FLNG/ME 484/584x Lecture 13

Microstation PC

- wireless

- highly portable system

- designed to produce *high quality* distance education and corporate training content

- requires very little training

- very flexible

- can incorporate any existing instructional material

Microstation PC

1. Gateway or Acer 14" convertible tablet PC
2. USB powered audio interface
3. Wireless mic receiver
4. Wireless mic
5. Adjustable laptop stand
6. Wireless keyboard
7. TabletPC pen
8. Wireless mouse
9. Wireless mouse/keyboard receiver
10. Carrying case

Microstation PC

ME 335 Lecture 12

Fluid Flow
Professor Shankar Subramanian

Challenges

Challenges

Equipment cost
Software cost
Maintenance cost

Challenges

ME/IE/CprE557 Lecture 20

Challenges

Equipment cost
Software cost
Maintenance cost

Faculty professional development

Opportunities

- Enhanced learning if used properly
- Ability to share courses between institutions

Resources

Open Source VR software

www.vrjuggler.org

VE Suite

http://www.vrac.iastate.edu/~kmbryden/VE-Suite.htm

One wall VR system specifications

www.vrac.iastate.edu/~kmbryden/confroom

Technology, Globalization and Culture

www.me.iastate.edu/me484

Microstation

www.pangeaeducation.org