48-175 Descriptive Geometry

Spring Semester • 9 units • UT 1.30-2.50

Carnegie Mellon University - Qatar Campus

• email

ramesh@cmu.edu

• blackboard

access via ...

• website

www.andrew.cmu.edu/~ramesh/teaching/course/48-175/

- Descriptive Geometry
- Topics
- Text and materials
- Duration
- Grading
- Recitation
- Office hours
- Special needs
- Attendance
- FAQ

Gaspard Monge - remembered as the man who both invented — at the very tender age of 18 — a technique — Descriptive Geometry on which all modern graphical communication is based and initiated a fundamental change in the teaching of constructive geometry.

Two other noteworthy achievements:

- Founded the École Polytechnique
- Went on the expedition to Egypt that found the Rosetta Stone

- Descriptive Geometry
- Topics
- Text and materials
- Duration
- Grading
- Recitation
- Office hours
- Special needs
- Attendance
- FAQ

- Practical methods in 2-D geometry
- Basics of 3-D descriptive geometry
- Lines in descriptive geometry
- Planes in descriptive geometry
- Spatial relations on lines
- Intersections (of lines and planes)
- Rotations in 3-dimensional space
- Location of points and tangent planes on solids and surfaces
- Intersection of geometric solids and surfaces
- Shades and shadows
- Axonometric and perspective projections
- Development of surfaces

- Descriptive Geometry
- Topics
- Text and equipment
- Duration
- Grading
- Recitation
- Office hours
- Special needs
- Attendance
- FAQ

I have written a course text

You will need a **compass, triangles, ruler, protractor, pencils, erasers** to do the assignments and exams.

A portable drawing board is handy for those who are not architecture majors.

All are reasonably priced and easily available.

I expect you to follow my drawings in class.

Drawings on letter sized or A4 paper for most assignments.

I may require you to deal with A3 paper for the exams.

- Descriptive Geometry
- Topics
- Text and equipment
- Duration
- Grading
- Recitation
- Office hours
- Special needs
- Attendance
- FAQ

Classes Sundays & Tuesdays

- Approx. 14 weeks or 25 lectures

2-hour Final exam in April

2-hour Mid-term during exam week of February/March

Assignments every two weeks – handed out on a lecture day and due 14 days later on the same lecture day in class

Date	Class	Assignment	Text
Week I	About the course		
Week 2	Geometric Constructions	AI due wk 4	Chapter I
Week 3	Basics of Descriptive Geometry		Chapter 2
Week 4	Lines in Descriptive Geometry		Chapter 3
Week 5	Planes in Descriptive Geometry		Chapter 4
Week 6	Spatial Relations on Lines		Chapter 5
Week 7	Plane Intersections and Piercing Points		Chapter 6
Week 8	SPRING BREAK - NO CLASS		

> schedule 7

Date	Class	Assignment	Text
Week 9	Mid-term exam review	A4 due wk 11	-
Week 10	Method of Revolution	_	Chapter 7
Week I I	Solids and Surfaces	A5 due wk 13	Chapter 8
Week 12	Shades and Shadows		Chapter 9
Week 13	Axonometric Projection		Chapter 10
Week 14	Central Projections	_	Chapter II
Week 15	Open topic		
Week 16	EXAMWEEK - NO CLASS		

schedule

8

- Descriptive Geometry
- Topics
- Text and equipment
- Duration
- Assignment 🛑
- Recitation
- Office hours
- Special needs
- Attendance
- FAQ

Posted after Tuesday lectures on Blackboard

Due Tuesday fortnight later

Assignments will be accepted late up to 48 hours after the deadline.

There is a penalty of I point per problem per I2 hours.

In addition to the physical copy, late assignments should be scanned and submitted via blackboard for timestamp purposes

about the course (will be revised)

- Descriptive Geometry
- Topics
- Text and equipment
- Duration
- Grading 🛑
- Recitation
- Office hours
- Special needs
- Attendance
- FAQ

I DISLIKE grades !!!

Poor grades say one of two things to a any student on this campus

you're bright and no mistake!(prerequisite to get into CMU)

Either

You have no aptitude for the subject (that's forgiveable)

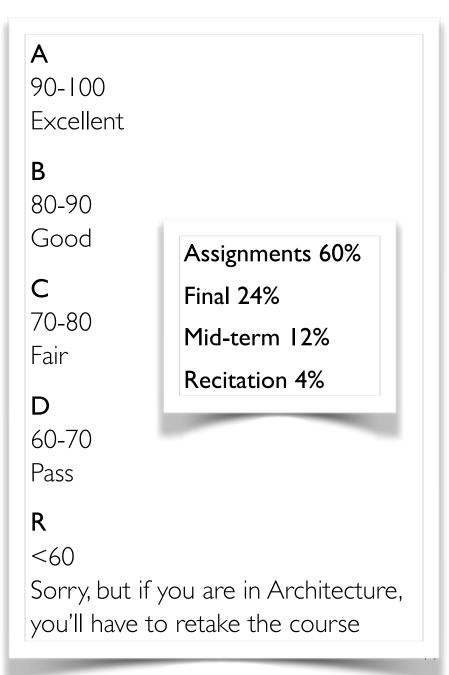
Or

You don't try (that's not forgiveable)

— so TRY

Sadly, grades are a NECESSARY evil !!!

- Descriptive Geometry
- Topics
- Text and equipment
- Duration
- Grading
- Recitation
- Office hours
- Special needs
- Attendance
- FAQ



- Descriptive Geometry
- Topics
- Text and equipment
- Duration
- Grading
- Recitation 🛑
- Office hours
- Special needs
- Attendance
- FAQ

In class -articipation make up 4% of your grade.

12

- Descriptive Geometry
- Topics
- Text and equipment
- Duration
- Grading
- Recitation
- Office hours
- Special needs
- Attendance
- FAQ

I am available on my teaching days

Sundays + Tuesdays

My office is

I always respond to email

- Descriptive Geometry
- Topics
- Text and equipment
- Duration
- Grading
- Recitation
- Office hours
- Special needs 🛑
- Attendance
- FAQ

As long your needs fulfills any legitimate reason accepted by this university.

I'll do my best if it is within my power to help.

If not, you must contact your primary academic advisor in your home department

- Descriptive Geometry
- Topics
- Text and equipment
- Duration
- Grading
- Recitation
- Office hours
- Special needs
- Attendance 🛑
- FAQ

I don't take attendance ..

open laptop, tablets, email, social
networking are **banned** during lectures

However ... I follow the 'Buckley Amendment' now known as the 'FERPA' rules

I return your assignments to you and only you ... in class (or in my office afterwards)

I discuss your grades, assignments, exams with **you and only you** ... after class or in my office

- Descriptive Geometry
- Topics
- Text and equipment
- Duration
- Grading
- Recitation
- Office hours
- Special needs
- Attendance
- FAQ **(**

Is this course even necessary in this day and age of design computing?

In one sense, not really In another, absolutely

Then why?

It depends on you.

Every good designer understands geometry and understands it well and constructively.

Conversely, any designer who does not understand geometry is unlikely to be good.

- Descriptive Geometry
- Topics
- Text and equipment
- Duration
- Grading
- Recitation
- Office hours
- Special needs
- Attendance
- FAQ **(**

Is THIS in the exam?

Yes and then some

What's NOT in the exam?

Everything else

It's CLOSED BOOK?!

Yes

You DON'T grade on a curve!

No ... I don't grade on a curve

You DON'T!!

No ... I don't

You cannot be SERIOUS!

I usually am and I am now

about the course (this is a joke)

- Descriptive Geometry
- Topics
- Text and equipment
- Duration
- Grading
- Recitation
- Office hours
- Special needs
- Attendance
- FAQ
- Clearance waiver

Because Descriptive Geometry was once classified as *a military secret*.

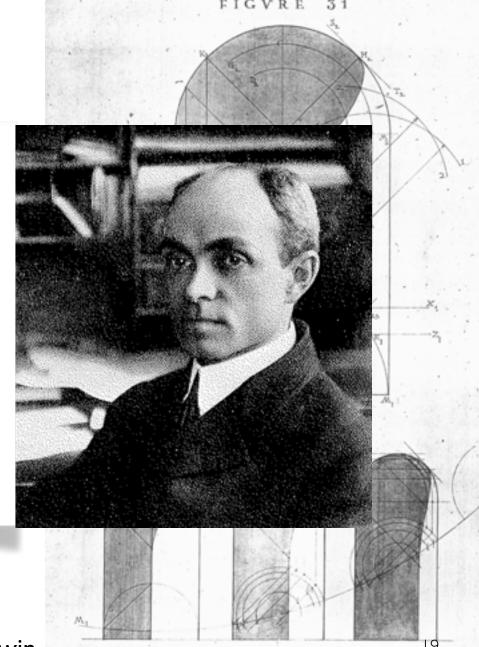
It has not been declassified as such you will need to sign a waiver.

Actually it is proforma.

All you need to do see Erica Harp at the main office and give her your name and say you agree to whatever is required for this course.

She will understand – just make sure she has taken down your name.

"to study architectural shadows carefully and with his [sic!] artistic faculties fully awake to their essential value, that he may express them quickly, readily and truly on all his studies in design..."



cmu connection – henry mcgoodwin

"shadows should have influenced, most intimately and constantly, however gradually and unconsciously, the development of styles in different latitudes. It is hard to imagine that the broad and simple designs of the Greek could have been evolved in a northern climate where the lowlying sun would have never modeled them as does the brilliant southern sunlight for which they were intended..."

