

Integrative Studies 2
Fall 2008
Weekday Program

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In Integrative Studies 2 we explore the nature and foundations of logic and mathematics. Western culture has long considered these to be the most certain of all the sciences. We learn early in life that mathematical calculations are right or wrong, true or false, with little or no gray area. Is this view correct? How do we decide? These are among the questions will we think about in IS 2.

The requirements for Integrative Studies 2 are as follows:

DISCUSSION (50% of the final grade): A good discussion depends upon careful preparation, willingness to speak and listen, open-mindedness, and mutual respect. Attendance is especially important in a small class, and most especially important given that we will be deciding the assignment for each class at the end of the previous class. More than four absences is sufficient reason for being dropped from the class. *If you miss a class, you are responsible for getting the next assignment from one of your classmates. This is very important because we go at the class's pace through the exercises, and so the syllabus is less exact.*

JOURNALS (25% of the final grade): You'll keep a journal in which you make entries for each work we study. Your journals should include your responses to homework assignments, reading and study notes, and personal reflections on questions raised by the texts. I'll periodically distribute lists of suggested questions you may choose to address in your journal. I'll collect the journals regularly.

FINAL EXAMINATION (25% of the final grade): A final take home exam will be given at the end of the semester. This exam will deal with material from throughout the course. There may be a mid-term examination that is not evaluated for a grade.

The readings for Integrative Studies 2 are as follows:

“Bits and Bins” (handout)
“A Little Reasoning About Reasoning and Logic” (handout)
Euclid, *Elements*
Aristotle, *Posterior Analytics*
Lobachevsky, “Theory of Parallels” (handout)
Descartes, *Discourse on the Method, Rules for the Direction of our Native Intelligence*
Einstein, *Relativity*
“Paradox” (handout)
Nagel & Newman, *Godel's Proof*

Approximate Course Calendar – Integrative Studies 2

F	1	8-22	“Bits and Bins”
M	2	8-25	“Bits and Bins”
W	3	8-27	“Bits and Bins”
F	4	8-29	“A Little Reasoning about Reasoning and Logic”
M		9-1	Labor Day
W	5	9-3	“A Little Reasoning...”
F	6	9-5	“A Little Reasoning...”
M	7	9-8	Euclid, <i>Elements</i>
W	8	9-10	Euclid, <i>Elements</i>
F	9	9-12	Euclid, <i>Elements</i>
M	10	9-15	Euclid, <i>Elements</i>
W	11	9-17	Euclid, <i>Elements</i>
F	12	9-19	Euclid, <i>Elements</i>
M	13	9-22	Aristotle, <i>Posterior Analytics</i>
W	14	9-24	Aristotle, <i>Posterior Analytics</i>
F	15	9-26	Lobachevsky, “Theory of Parallels”
M	16	9-29	Lobachevsky, “Theory of Parallels”
W	17	10-1	Lobachevsky, “Theory of Parallels”
F	18	10-3	Lobachevsky, “Theory of Parallels”
M	19	10-6	Descartes, <i>Rules for the Direction of the Mind</i> (Rules 1-10)
W	20	10-8	Descartes, <i>Rules for the Direction of the Mind</i> (Rules 11-13)
F	21	10-10	Descartes, <i>Discourse on Method</i> (Parts 1-2)
M	22	10-13	Descartes, <i>Discourse on Method</i> (Parts 3-4)
W	23	10-15	Descartes, <i>Discourse on Method</i> (Parts 5-6)
F		10-17	Dean’s Break
M	24	10-20	Einstein, <i>Relativity</i> , I-VI (pp. 1-20)
W	25	10-22	Einstein, <i>Relativity</i> , VII-X (pp. 21-35)
F	26	10-24	Einstein, <i>Relativity</i> , XI-XII (pp. 36-44)
M	27	10-27	Einstein, <i>Relativity</i> , Appendix I (pp. 139-145)
W	28	10-29	Einstein, <i>Relativity</i> , XIII-XIV, XVI (pp. 45-51, 58-64)
F	29	10-31	Einstein, <i>Relativity</i> , XVIII-XXIV (pp. 69-102)
M	30	11-3	Nagel and Newman, <i>Gödel’s Proof</i> , pp. 1-36
W	31	11-5	<i>Gödel’s Proof</i> , pp. 37-56
F	32	11-7	“On Paradox”
M	33	11-10	<i>Gödel’s Proof</i> , pp. 57-80
W	34	11-12	<i>Gödel’s Proof</i> , pp. 80-91
F	35	11-14	<i>Gödel’s Proof</i> , pp. 92-102
M	36	11-17	<i>Gödel’s Proof</i> , pp. 102-113
W	37	11-19	<i>Gödel’s Proof</i>

F	38	11-21	<i>Gödel's Proof</i>
M	39	11-24	Final Examination