

IDS 2935: Magic and Method in Science

Quest 1: Nature and Culture



I. General Information

Class Meetings

- Fall, 2024
- MWF (TBD)

Instructor

- Dr. Patrick Scanlon
- Turlington 2215
- MW 12 am – 1 am or by appointment
- pscanlon@ufl.edu

Course Description

After purchasing and perusing a set of Sir Isaac Newton's secret archives, the economist John Maynard Keynes remarked in astonishment: "Newton came to be thought of as the first and greatest of the modern age scientists, a rationalist, one who taught us to think on the lines of cold and untinctured reason. I do not think that anyone who has pored over the contents of that box . . . can see him like that. Newton was not the first of the age of reason. He was the last of the magicians." While it is true that Newton and Kepler were devoted to magic and alchemy, the question remains: Were these esoteric pursuits, however hidden, inextricable from their contributions to optics and astronomy, which were in turn foundational to physical science? If so, where are they tethered? Where does the magical meet the empirical? Stated more specifically still, What is vital about astrology, alchemy, divination of name and number, dream practice, art, contemplation—methods considered extravagant and luxurious, if not wasteful and inert? Finally, given our responses, are we then obliged to reconsider our pedagogical habits from the global and local perspective, from the institution of education and according to our personal academic pursuits?

In the particular case of astronomy and physics, the most direct relation to magic is the notion, *action at a distance*, a term through which Kepler and Newton articulated their theories of gravity, as it refers the case of one thing acting upon another thing without an identifiable cause. It is worth noting that the question of gravity persists, and Einstein, when commenting on the new hope, Quantum Mechanics, remarked, “I do not believe in spooky action at a distance.” Even without awareness of the history of science, one might find that this challenge is applicable to most fields of scholarship, for it is at its core, a question of knowledge and method, of agent and effect. Methodologically speaking, magic not only stretches the limits of inquiry’s elements, but presents certain paradoxes often intolerable to conventional research. We will take up them, in hopes that they will sharpen our understanding of how knowledge transpires, both in our field, and with regards to our respective scholarly projects. Each of the 3 modules revolve around a specific paradoxical scene: Sight (light and darkness); Sound (voice and tone); Sense (meaning and reality).

Quest and General Education Credit

- Quest 1
- Humanities
- Diversity (D)

- Writing Requirement (WR) 2000 words

This course accomplishes the [Quest](#) and [General Education](#) objectives of the subject areas listed above. A minimum grade of C is required for [Quest](#) and [General Education](#) credit. Courses intended to satisfy [Quest](#) and [General Education](#) requirements cannot be taken S-U.

Required Readings and Works

Abram, David. *The Spell of the Sensuous: Perception and Language in a More-Than-Human-World*

A variety of essays and excerpts will be provided. These are noted in the Annotated Weekly Schedule

Materials and Supplies Fees: n/a

II. Graded Work

Description of Graded Work

The table below provides descriptions of all major assignments.

	Description	Points
Exams	Three in-class multiple-choice and short-answer examinations to demonstrate knowledge of, and engagement with course materials (100 points each)	300
Think Pieces	Engagement with readings, self-reflection, and questions relating to the texts, magical lore and the history of science. (200+ words) (4 x 50 points)	200
Image Exploration	The taking of a reflection image and a shadow image, with an analysis of vision's precarious relation to reality.	100
Experiential Learning Activity	Lessons in Difference: A visit to the Harn museum and Natural History museum to locate a specific instance of magic's relation to science in each building's exhibition of culture.	75
Final Analytical Essay	Research-based analytical essay that explores a particular practice of magic, alchemy, or the occult in its collaboration with in a particular field of science. (2000 words) Peer review (25 pts) <i>Essay feedback provided before the end of finals week</i>	25 175
Reading Analysis	Ten close reading analysis assignments that demonstrate critical thinking and reflection. (10 x 12.5)	125
Total Points		1000

Grading Scale

For information on how UF assigns grade points, visit: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

A	94 – 100%	C	74 – 76%
A-	90 – 93%	C-	70 – 73%
B+	87 – 89%	D+	67 – 69%
B	84 – 86%	D	64 – 66%
B-	80 – 83%	D-	60 – 63%
C+	77 – 79%	E	<60

Grading Rubrics

Writing Assessment Rubric and Statements

SATISFACTORY (Y)	UNSATISFACTORY (N)
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CONTENT	Papers exhibit at least some evidence of ideas that respond to the topic with complexity, critically evaluating and synthesizing sources, and provide at least an adequate discussion with basic understanding of sources.	Papers either include a central idea(s) that is unclear or off-topic or provide only minimal or inadequate discussion of ideas. Papers may also lack sufficient or appropriate sources.
ORGANIZATION AND COHERENCE	Documents and paragraphs exhibit at least some identifiable structure for topics, including a clear thesis statement but may require readers to work to follow progression of ideas.	Documents and paragraphs lack clearly identifiable organization, may lack any coherent sense of logic in

		associating and organizing ideas, and may also lack transitions and coherence to guide the reader.
ARGUMENT AND SUPPORT	Documents use persuasive and confident presentation of ideas, strongly supported with evidence. At the weak end of the Satisfactory range, documents may provide only generalized discussion of ideas or may provide adequate discussion but rely on weak support for arguments.	Documents make only weak generalizations, providing little or no support, as in summaries or narratives that fail to provide critical analysis.
STYLE	Documents use a writing style with word choice appropriate to the context, genre, and discipline. Sentences should display complexity and logical sentence structure. At a minimum, documents will display a less precise use of vocabulary and an uneven use of sentence structure or a writing style that occasionally veers away from word choice or tone appropriate to the context, genre, and discipline.	Documents rely on word usage that is inappropriate for the context, genre, or discipline. Sentences may be overly long or short with awkward construction. Documents may also use words incorrectly.
MECHANICS	Papers will feature correct or error-free presentation of ideas. At the weak end of the Satisfactory range, papers may contain some spelling, punctuation, or grammatical errors that remain unobtrusive so they do not muddy the paper's argument or points.	Papers contain so many mechanical or grammatical errors that they impede the reader's understanding or severely undermine the writer's credibility.

- The Writing Requirement (WR) ensures students both maintain their fluency in writing and use writing as a tool to facilitate learning.
- The instructor will evaluate and provide feedback before the end of the course on all of the student's written assignments with respect to grammar, punctuation, clarity, coherence, and organization.
- WR course grades have two components. To receive writing requirement credit, a student must receive a grade of C or higher and a satisfactory completion of the writing component of the course.

Think Piece Rubric

Think Pieces are an opportunity for students to synthesize, reflect upon, and begin to analyze materials and experiential activities assigned for this class. They also provide an opportunity to engage with the materials in a personal way. The following rubric will be used for grading ThPs.

Rubric	Points
Thorough on-point, thoughtful take on the materials.	Full credit (45-50)
Competent and complete but may lack clarity, specific detail, and/or development of thoughts.	Partial credit (15-44)
Incomplete, poorly written, shows little involvement with the materials.	Some credit (1-14)
No submission	0

III. Annotated Weekly Schedule

The schedule is tentative and subject to change. Check Canvas for any updates.

Week	Monday	Wednesday	Friday
Introduction to the Quest, the modules, and Magic within the History of Science			
Summary: An introduction to the Quest program and an introduction to what it means to study the humanities.			
1		Introduction to the course and activity: Compile a class list of what constitutes magic, and another on constitutes science. Examples in history and culture. Qualities and characteristics of each system.	Reading Due: <i>Spell of Sensuous</i> : “The Ecology of Magic—A personal introduction to the Inquiry.
Summary: Lecture on the four modules as presented in Abrams introduction. Presentation on and discussion of paradox: Examples and function within research.			
2	In class activity and discussion of a personal encounter with the ecology of magic. Reading Due: “Newton the Man” – John Maynard Keynes	In class activity and discussion: Flashlight and/or sunlight with a prism to separate white light into its spectrum. One of Newton’s first experiments. Introduce Cardinal de Cusa’s theory of an infinite universe.	In class activity and discussion Reading Due: Excerpt on Cusa’s experiment with Jan Van Eyck’s portrait: <i>The Analogical Turn</i> –Johannes Hoff Think Piece 1 Due
Module 1: Sight (Light and Darkness)			
Summary: Introduction to Kepler through “The Watershed” by Arthur Koestler. We will look at the first of 3 of Kepler’s studies: Somnium: Lunar Dream.			

3	Discuss the Watershed and Kepler's notion of coincidence and providence.	<p>Continue with Koestler's biography.</p> <p>In class activity: Discussion of science fiction, as Kepler's Lunar Dream is considered the first of its kind.</p> <p>Reading Due: Somnium: Lunar Dream</p>	<p>Theories of lunar/solar eclipses:</p> <p>Reading Due: Excerpt from "Theories of Vision: From Al Kindi to Kepler."</p>
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Summary: We will take up the eclipse through the camera obscura (from ancient Greece's light through a leaf) to Kepler's amendments, to its use in art, to its influence on the lens and modern day film camera.

4	<p>In class activity: Playing with light and lenses; Looking at early film</p> <p>Reading due: Excerpt from <i>Suspensions of Perception</i> Jonathan Crary: On the development of film from alchemy</p>	<p>In class activity: Group discussion on contemporary products that emerged from alchemy</p> <p>Reading Due: Continued Crary</p>	<p>Description of pic assignment: One of reflection. One of a shadow.</p>
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Summary: We will work this week on their images of shadow and reflection, and analyze according to a variety of measures: Ultimately, with reflection and shadow, we are dealing explicitly with light and darkness – knowledge and ignorance.

5	<p>In class activity and discussion: Partner up with our respective phone produced photos.</p>	<p>Presentation of photos:</p>	<p>Presentation of Photos Continued</p> <p>Think Piece 2 Due</p>
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Summary: We are preparing to glean something specific about how the optics of sight were, and remain, precarious and tricky to render self or reality in any objective fashion.

6	Examination Preparation	Review and Questions	Module 1 Examination
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Module 2: Sound (Voice and Tone)

Summary: How has sound, through the voice and/or through instrumentation bridged the gap between science and magic. We will begin with noise and dissonance as they are ordered into music.

<p>In class activity and discussion</p> <p>7 Reading Due: “Introduction: Noise” excerpted from Jacques Attali’s <i>Noise: A Political Economy of Music</i></p>	<p>10/5</p> <p>In class activity and discussion: Music as order: Rites of Spring; Schoenberg (12 Tone), the source of Horror soundtracks and revolution.</p> <p>Reading Due: Excerpt from <i>Music of the Spheres: Music, Science and the Natural Order of the Universe</i>.</p>	<p>Discussion of Pythagoras, as foundation of Western Music. Comparison to Indian music: John Cage piece 4’22.</p>
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Summary: We will begin reading the graphic novel and discuss why Small chose the graphic novel as a way to tell his story. To understand the genre of comics, we will examine how comics are constructed—the tools the graphic novelist uses to tell a story. And then we will consider why pictures help us tell our stories. How do they help us connect? Can we see similarities or differences— does it make the stories more real?

<p>8 Introduction to instrumentation: How has science developed musical instruments.</p>	<p>In class activity and discussion Magical instruments: Flute, Lute, Vina and Drum.</p> <p>Reading Due: From Malidoma Some’ – <i>Of Water and the Spirit</i></p>	<p>Out of class listening assignment: Sit in nature and record one’s environment: birdsong, wind, tree swaying, insect sounds</p>
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Summary: From the notion of ordered noise, we will look at the voice, and in particular its use in practice of prayer and mantra for those early scientists of an Islamic/Sufi, Indian/Hindu/Vedic and Hebrew/Jewish vein. Each of these spiritual systems display the use of mathematical tones and ratios to experience new knowledges, if not other realms.

<p>9 In class activity and discussion: Watch clip of the documentary <i>Darshan: The Embrace—Ammachi</i> (A current Indian Holy mother).</p>	<p>In class activity and discussion: Tools of prayer and repetition: Rosary, Mala beads, Prayer wheels (Tibetan Buddhism),</p> <p>Beatles Anthology: Hare Krishna and the Beatles</p>	<p>Discussion of Islamic/Sufi astronomy and Medicine in light of sound and vibration.</p> <p>Think Piece 3 Due</p>
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Summary: How has sound and vibration, as its metered out in number (repetition) and sonic ratios introduce one to the what cannot be known through words and concepts? What role does sound and vibration play in our certain theories of cosmology?

10	Discussion and activity: The anatomy of singing/speaker, vocal practices from a few different cultural theories of sound.	Reading due: Excerpt from <i>The Mysticism of Sound and Music</i> by Hazrat Inayat Khan Preparation for examination and addressing questions.	10/28 Module 2 Examination
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Module 3: Sense (Meaning and Reality)

Summary: After isolating sight and sound, we can know look more broadly at self and reality. We might ask what it means to be sentient? And, can reality itself be approached as such, if not more radically, as conscious?

11	In class activity and discussion: Gertrude Stein’s work with psychologist William James on the habit meaning implied by our misunderstandings of language and reality. perception im meaning and interpretation. Reading Due: From <i>Language of Inquiry</i> by Lyn Hejinian: “Two Stein Talks”	In class activity: Making cut up poems from found texts. Reading Due: Stein’s <i>Tender Buttons and Portraits</i>	In class activity and discussion: Listen to Stein read, and view Picasso’s Portraits
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Summary: We return to Kepler for his essay on the snowflake, which was spurred by the sticking of one to his coat. His treatise here on the symmetry of nature birthed a whole field of study on Organic Geometry, and articulated magical themes like the Golden ratio, or Golden mean

12	Read from Kepler’s <i>New Year’s Gift: On the Six-cornered Snowflake</i>	11/9 Preparation for Museum trip.	Field trip to UF’s two Museums
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Summary: We pick up *Spell of the Sensuous* and find our way through the index, and gloss chapters to locate sections that will be of interest to us, for our final essay. I will introduce the parameters and prompt for the essay.

13	In class activity and discussion: We hear from groups organized by the chapters they have chosen to focus on.	Same procedure as Monday. I will continue to elaborate on the essay’s structure.	11/18 Think Piece 4 due
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	They will also share in groups and to the class as a whole, any potential ideas for the final essay.		
Summary: Examination week			
14	Module 3 Examination	11/23 Thanksgiving: No Class	11/25 Thanksgiving: No Class
Summary: This last week is designed to assist them on their final essay. I will hold writing workshops Monday and Wednesday, and in general field questions about their respective projects.			
15	Writing Workshop	Writing Workshop	12/2 Peer Review Due
Summary: Reflections, evaluations, and feedback.			
16	Reflections Final Paper Due	Evaluations and Final Wrap Up	

IV . Student Learning Outcomes (SLOs)

At the end of this course, students will be expected to have achieved the [Quest](#) and [General Education](#) learning outcomes as follows:

Content: *Students demonstrate competence in the terminology, concepts, theories and methodologies used within the discipline(s).* Assessments: In-class examinations, think pieces, experiential activity, and final analytical essay.

- Identify, describe, and explain the methodologies used across humanities disciplines to examine essential questions about the nature of knowledge posed by esoteric and conventional systems of research. (H)
- Identify, describe, and explain the ethical and empirical issues related to culturally different customs of education and learning, as they exist in lore, research, and other expressions of culture, such as art, literature, nonfiction, and film. (Q1)
- Identify, describe, and explain the ethical and empirical issues related to experiences of self and other, as they concern cultural distinctions about what comprises knowledge, and how it can be accessed. (D)

Critical Thinking: *Students carefully and logically analyze information from multiple perspectives and develop reasoned solutions to problems within the discipline(s). Assessment: Class participation, in-class examinations, reading analysis responses, think pieces, and final analytical essay.*

- Analyze how texts across disciplines and genres and diverse populations represent the relationships between storytelling, science, culture, and identity. (H)
- Analyze and evaluate diverse methodologies in the humanities, and Nature and Culture through diverse texts, images, and films by using close reading, critical analysis, and reflection. (Q1)
- Analyze and evaluate texts, film, and art by and about a diverse group of practitioners of intellectual pursuits, regardless of how marginal they remain according to the set of conventional disciplines. (D)

Communication: *Students communicate knowledge, ideas and reasoning clearly and effectively in written and oral forms appropriate to the discipline(s). Assessment: In-class examinations, reading analysis responses, think pieces, and final analytical essay.*

- Develop and present clear and effective oral and written work that demonstrates critical engagement with course texts, films, and experiential learning activities. (H & Q1)
- Analyze and reflect on the ways the student and diverse people have experienced knowledge acquisition, with written and oral assignments that demonstrate use of clear and organized language and well-supported ideas. (D)

Connection: *Students connect course content with meaningful critical reflection on their intellectual, personal, and professional development at UF and beyond. Assessment: Think pieces, experiential activity, interview, reflections, and final analytical essay.*

- Connect course content with their intellectual, personal, and professional lives at UF and beyond. (Q1)
- Reflect on their own and others' experience with magic and science in Think Pieces and a final analytical essay. (Q1)

V. Quest Learning Experiences

1. Details of Experiential Learning Component

For experiential learning opportunities, we will visit the Harn Museum and the Natural History Museum to locate the confluence of science and magic within the historical and natural exhibits and the artistic or cultural ones. It is important to both look for, and discover the collaboration of magic and science as it has existed in a variety of forms, across cultures and throughout the expanse of human civilization. Upon finding these points of contact, students will analyze and present the precise lines of influence in their two examples.

2. Details of Self-Reflection Component

Self-reflection is built into many of the assignments, including think pieces, the interview, and the experiential learning activity.

VI. Required Policies

Attendance Policy

Attendance is required. **Only** those absences deemed excused according to UF policy, including university-sponsored events, such as athletics and band, illness, and religious holidays will be exempted from this policy. Absences related to university-sponsored events must be discussed with the instructor prior to the date that will be missed. After **two** unexcused absences, **25 points per absence** will be deducted from the final grade.

Please Note: If students are absent, it is their responsibility to make themselves aware of all due dates. If absent due to a scheduled event, students are still responsible for turning assignments in on time.

Tardiness: If students enter class after roll has been called, they are late, which disrupts the entire class. **Two** instances of tardiness count as one absence.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Late Work and Make-Ups Policy

For a student with a valid **excused** absence, homework and papers will be due by the next class period. Students who submit late work will receive a **10% per day** deduction.

Participation

Participation is a crucial part of success in this class. Students will be expected to work in *socially distanced or virtual* small groups and participate in group discussions and other in-class activities. Students should be prepared for unannounced quizzes or activities on the readings or classroom discussion. Students must be present for all in-class activities to receive credit for them. In-class work cannot be made up. Peer review sessions require that students provide constructive feedback about their peers' writing.

Reading is a necessary and important part of this class. Each of the readings has been selected to build your knowledge, test your assumptions, create a spark, or even cultivate a sustained interest. As such, by completing all of the assigned readings, students will be able to provide a fulfilling engagement with the texts, to collaborate with their classmates, and to experience a truly dialectical classroom.

Decorum

A positive learning environment relies upon creating an atmosphere where diverse perspectives can be expressed, especially in a course that focuses on pressing and controversial social and political issues. Each student is encouraged to take an active part in class discussions and activities. Honest and respectful dialogue is expected. Disagreement and challenging of ideas in a supportive and sensitive manner is encouraged. Hostility and disrespectful behavior are not acceptable.

Just as we expect others to listen attentively to our own views, we must reciprocate and listen to others when they speak, especially when we disagree with them. However, in this class, our emphasis will be on engaging in the mutual exploration of issues as presented in the course readings as scholars rather than in defending points of view we have formed outside the classroom.

Students Requiring Accommodation

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

UF Evaluations Process

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

University Honesty Policy

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Counseling and Wellness Center

Contact information for the Counseling and Wellness Center: <http://www.counseling.ufl.edu/>, 392- 1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

The Writing Studio

The writing studio is committed to helping University of Florida students meet their academic and professional goals by becoming better writers. Visit the writing studio online at <http://writing.ufl.edu/writing-studio/> or in 2215 Turlington Hall for one-on-one consultations and workshops.

In-Class Recordings

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.