

## DEPARTMENT of HISTORY – KEAN UNIVERSITY, syllabus

**HIST4236:01** History of Alchemy and the Origins of Modern Science – Spring 2022

Dr. Brian Regal

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Office LHAC 212

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Office Hours: see KeanWise (also by appointment or drop in anytime).

Website: <http://www.kean.edu/~bregal>

Class webpage: <http://www.kean.edu/~bregal/HIST4236.htm>

Class meeting hours, Thursday 4:30pm rm LHAC

### **Required Textbook:**

Laurence Principe. *The Secrets of Alchemy* (University of Chicago Press, 2013) ISBN# 13:978-0-226-10379-2

Note: there will also be a series of required journal article readings and original texts listed below and posted for downloading on the class web page or that will be handed out in class or which are on reserve in the library.

Pre-requisites: six (6) credits in history or permission of the instructor

### **Course Description:**

The medieval and Renaissance origins of modern science covered by studying the history of alchemy. Emphasis on practical aspects of alchemy's origins, performance and the goals of its practice along with the Islamic, Jewish and Christian components of alchemical philosophy and its contribution to science.

### **Course Objectives:**

Students will become familiar with the history of alchemy and the origins of modern science particularly chemistry. Students will read original alchemical texts as well as current scholarly works. Students will show their proficiency through a series of examinations and research papers.

**CSLOs:** This course addresses these important student outcomes.

CSLO1: Demonstrate basic standards of historical literacy and perspective.

CSLO2: Articulate an interpretive framework of the complex and interrelated causes, courses, and consequences of historical events.

CSLO3: Perform sophisticated skills in examining, exploring, comparing, and critiquing a variety of sources and viewpoints: written, non-verbal, artistic, symbolic.

CSLO4: Critically and comparatively analyze individual cultures within national, regional and global contexts.

CSLO5: Demonstrate well-developed written and verbal skills in dissecting and creating

nuanced analyses of historical events and historiographical interpretations of those events.

**Attendance Policy:**

The following attendance policy has been approved by the Faculty Senate and the administration and replaces the attendance policy which appears in the current catalogs.

Attendance is expected in all courses. Attendance will be a component of the grade of any course if so stated in the syllabus. Students are responsible for informing the instructor in advance or in a timely manner of the reasons for their absence. Instructors in consultation with their department chairs are expected to respect university practices and policies regarding what counts as an excused absence. Typically excused absences include illness, bereavement, or religious observances. Serious tardiness may be dealt with at the discretion of the instructor

Students are responsible to become familiar with, and will be held accountable for, the information on the following Web sites:

1. Academic Integrity at [www.kean.edu/forms/AcademicIntegrity.pdf](http://www.kean.edu/forms/AcademicIntegrity.pdf) or the Web site for *The Guide* at [www.kean.edu/publications/TheGuide2007.pdf](http://www.kean.edu/publications/TheGuide2007.pdf).
2. Student Code of Conduct at [www.kean.edu/~conduct](http://www.kean.edu/~conduct) or the Web site for *The Guide* at [www.kean.edu/publications/TheGuide2007.pdf](http://www.kean.edu/publications/TheGuide2007.pdf).”

**Course Requirements:**

Class participation = 20%

Mid-Term Exam = 20%

Final Exam = 20%

Writing projects:

- Chose any four headings from the list below and write a half page definition/description of each as they pertain to alchemy.  
Due the week *before* midterm. = 10%
- Correspondence project: choose any four or five consecutive letters from the following letters collections and write a 2-3 page analysis. Discuss who the letters were from/to and what topic they discussed. Due by the 13th week of class (specific date TBA) Both works are on reserve in the library. *The Correspondence of Robert Boyle*, (6 volumes) Hunter, Clericuzio, and Principe (2001) Kean Call # Q 143.B77 A4 2001 or *Alchemical Laboratory Notebooks and Correspondence of George Starkey* (Chicago : University of Chicago Press, 2004). Newman and Principe eds. Kean Library Call # QD 24.S73 A3 2004. =10%
- 12-15 page research paper on any aspect of the history of alchemy, due at end of the semester = 20% (each student will give a 3-5 minute oral presentation on their research topic in class). *A rough of your research thesis will also be turned in for critique.*

Definition/Descriptions list:

1. Homunculus
2. Distillation
3. Alembic
4. Fermentation
5. Urine
6. Phlegm
7. Retort
8. Philosopher's Stone
9. Putrefaction
10. Corpuscular Theory

NOTE: **All papers must be turned in by the last meeting of the semester.** Also, NO papers can be turned in electronically and no extensions at the end of the semester. Unless under extraordinary circumstances.

**Turn off speakers of your electronic gear.**

**Not paying attention to details or not following instructions will lower your grade.**

Course Outline: (WP) means 'from web page'

Extra Credit: Write a five page review of any of the books listed at the bottom of this syllabus. Due by end of semester.

Week	Subject covered	Readings and assignments
1	Introduction: What is history and how is it studied and written about? What is the history of science? What is Hermeticism? Discussion of 'The New Historiography of Alchemy'	Read <i>Brief Intro to Alchemy</i> (WP), and <i>Alchemy and Hermeticism: and introduction</i> (WP). Principe intro, <i>What is Alchemy?</i> In class film viewing <i>Search for the Philosopher's Stone</i> .
2	The Egyptian and Greek origins of chemistry	Read: <i>Chemistry to 1699</i> , (WP) Principe Chap 1
3	Is there a difference between alchemy and chemistry? <b>How to write the research papers.</b>	Read: <i>Alchemy vs. Chemistry</i> , Principe.
4	The Philosopher's Stone, Hermes Trismegistus, <i>The Emerald Tablet</i> and the <i>Pymander</i>	Read <i>The Philosopher's Stone</i> (WP) and the handout of the original Hermes text.
5	Alchemy and the Arabs, Aviceenna the great denier. <b>Definitions due. Class presentations</b>	Read: Principe Chapter 2 and read handout of original Geber text
6	The Christian discovery of alchemy. The <i>Picatrix</i> , manual of magic. Review for mid-term.	Read Principe chap 3. Read original alchemical recipe (don't try this at home!). Read the excerpt from the <i>Picatrix</i> . WP.

7	<b>Midterm Exam</b>	
8	SPRING BREAK	
9	Alchemy and medicine, the work of Paracelsus Alchemical books, the allegory of words and images. <b>Turn in research project thesis.</b>	Read handout of original Flamel text and the <i>Anonymous</i> text, Read Principe chap 4,5 & 6
10	Famous alchemists Robert Fludd, Nicholas Flamel,	Read Principe chap 7
11	Hermes under attack: Ficino and Casaubon	Read <i>Grafton on Casaubon</i> (WP)
12	More famous alchemists, Albertus Magnus, Isaac Newton, John Dee, scrying, and crystal balls.	Read Handout of original Albertus Magnus text, and screen <i>Newton's Dark Secret</i> in class
13	Robert Boyle, the New Experimental Philosophy, and the turn towards modern science. <b>Turn in correspondence project</b>	As above.
14	Recapitulation, what do we make of alchemy? Review for final.	Read <i>Alchemy and Chemistry</i> (WP). Principe Epilogue
15	<b>Final Exam and research paper due.</b>	<b>May 5, 2022</b>

### **Quick Guide for writing the research Papers:**

Note: Make sure you are present for the class (either second or third week) in which the writing assignments will be discussed in detail. Your grade depends upon it. All papers are to be typed, double spaced and follow Chicago Manual of Style formatting for college term papers with footnotes *not* parenthetical citations. Use 12 pt type and simple type face. No artwork is required except if you create an original chart or graph to illustrate your argument. However, you **MUST** have a bibliography of at least ten (10) sources for the longer research paper (internet sources can be used but do not count towards the ten mandatory sources, see class discussion).

*Make sure your paper has a thesis/argument.*

***No papers may not be turned in electronically!***

Plagiarism: a very serious offence, this is taking someone else's work—like downloading something from Wikipedia, and claiming it as your own writing. If you do this, you fail the course. See the Kean homepage for details.

**Supplemental Reading List:** not required but *strongly* recommended. Extra credit, write a five page review of any one of these.

Abraham, Lyndy. *A Dictionary of Alchemical Imagery* (Cambridge University Press, 1998).

Best & Brightman eds. *The Book of Secrets of Albertus Magnus* (Oxford University Press, 191974).

Boyle, Robert. *Free Enquiry into the Vulgarly Received Notion of Nature*. (Cambridge ; New York : Cambridge University Press, 1996).

Holmes and Levere. *Instruments and experimentation in the history of chemistry*. (Cambridge, Mass. : MIT Press, c2000).

Hunter, Michael. *Boyle: Between God Science*. (New Haven, Conn.: London : Yale University Press, 2010).

Page, Sophie. *Magic in Medieval Manuscripts* (University of Toronto Press, 2004).

Thorndike, Lynn. *A History of Magic and Experimental Science* (Columbia University Press, 1947). 8 vol.

Yates, Francis. *Giordano Bruno and the Hermetic Tradition* (University of Chicago Press, 1964).

All these titles are in the Kean Library.

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## **EXPECTATIONS and SUPPORT**

### **Kean University COVID-19 Resources and Guidance**

#### **Resources for Current**

**Students:** <https://www.kean.edu/coronavirus-information/resources-current-prospective-students#current>

**Loaner Laptop Assistance:** Students who are unable to access remote education because they do not have access to a computer should reach out to [cls@kean.edu](mailto:cls@kean.edu) or complete the following form: <https://forms.gle/4znuoXvofhSWLBoNA>.

**Tutoring Services:** *Online access only. No phone calls.*

All inquiries are directed through the main website: [learningcommons.kean.edu](https://learningcommons.kean.edu)

Contact: Gaby Angulo, Managing Assistant Director

Email: [marieanne.angulo@kean.edu](mailto:marieanne.angulo@kean.edu)

Email: [tutoringcenter@kean.edu](mailto:tutoringcenter@kean.edu)

#### **Writing and Public Speaking Support**

*Online access only. No phone calls.*

All inquiries are directed through the main website: [learningcommons.kean.edu](https://learningcommons.kean.edu)

Nurisel Harris

Phone: (908) 737-4629

Email: [harrisnu@kean.edu](mailto:harrisnu@kean.edu)

Email: [learningcommons@kean.edu](mailto:learningcommons@kean.edu)

## **HEALTH and SAFETY**

### **Food Insecurity & Housing Hardships Due to COVID-19**

Scott Snowden, Director, Center for Leadership and Service

**Phone: (908) 737-5170**

**Email: [cls@kean.edu](mailto:cls@kean.edu)**

### **Medical & Health**

Robin Mansfield, APN

Director, Student Health Services

**Phone: (908) 737-4880**

**Email: [hsnurses@kean.edu](mailto:hsnurses@kean.edu)**

**Location: Downs Hall, Rm. 126**

### **Mental Health and Counseling**

Vidal Annan, Ph.D.

Associate Director of the Counseling Center

**Phone: (908) 248-2065**

**Email: [counseling@kean.edu](mailto:counseling@kean.edu)**

### **In your Course Work**

Academic integrity: You are expected to cite properly the sources used in your written work. Plagiarism or other blatant violations of academic integrity policies will result in a failing grade for the assignment. Please read the Academic Integrity Policy (available at the Center for Academic Success or at [www.kean.edu/academicintegrity.html](http://www.kean.edu/academicintegrity.html)). You are responsible for reading and understanding its contents as they pertain to Cheating, Plagiarism, Fabrication & Academic Misconduct, the four categories of violations.

Students can expect reasonable and effective accommodations for documented disabilities or other special circumstances. Students are responsible for informing instructor of special needs as soon as relevant course information is available.

### **Important University Policies and Information**

Students are responsible to review and understand the *University Academic Integrity Policy* (available at the Center for Academic Success or at <http://www.kean.edu/admin/uploads/pdf/AcademicIntegrityPolicy.pdf>

Students should review the *Student Code of Conduct*, as it discusses expectations of appropriate conduct in the classroom: <http://www.kean.edu/KU/Code-of-Conduct>.

Students are strongly encouraged to register for the University's emergency notification system (<http://www.kean.edu/campusalert>) in order to be informed of campus emergencies, weather notices, and other announcements.

All students must have a valid Kean email account. For those who do not already have one, forms are available on-line at <http://www.kean.edu/offices/ocis/forms>; click on E-mail Account Request Form.

**Americans with Disabilities Statement & Non-Discrimination Statement:**

Kean University is an affirmative action, equal opportunity institution. Students with documented

disabilities who may need special instructional accommodations or who may need special arrangements in the event of an evacuation should notify the instructor as soon as possible, no later than the second week of the term. Students may contact the Office of Disability Services in Downs Hall Room 122 or call 908-737-4910 to discuss special needs.

**Title IX**

Title IX of the Education Amendments of 1972 (Title IX) prohibit discrimination on the basis of sex in education programs or activities. Sexual harassment in any form will not be tolerated at Kean University. Sexual harassment by students should be reported to the Office of Affirmative Action

Programs, Office of the Vice President for Student Affairs or the Office of Community Standards and Student Conduct immediately. Information about the University's Sexual Misconduct Policy may be found at the following: <http://www.kean.edu/policies/sexual-misconduct-policy>.

**KU Non-Discrimination Policy:**

Kean University is an affirmative action, equal opportunity institution.

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