Fall 2018 Syllabus

**UNIVERSITY OF FLORIDA**

ENGINEERING THE RENAISSANCE

IDH2931 Section 21H5

MEM3931 Section 21EB

**INSTRUCTOR INFORMATION:**

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| Instructor:       Dr. Mark Law | Dr. Mary Watt | Dr. Will Hasty |
| Office:             342 Infirmary |  | 263a Dauer |
| Office Hours:  TBA. |  | Office hours:   TBA. |
| E-mail: mlaw@ufl.edu | E-mail: marywatt@ufl.edu | E-mail: hasty@ufl.edu |

**COURSE INFORMATION:**

**Time & Location**

Little 119

MWF 8th period (3:00- 3:50)

**Description and Objectives:**

This course will introduce students to pivotal moments in technological innovation and the physics underlying those changes in the Renaissance and the cultural history leading to and following from it. The course aims to provide students with an understanding of the ideas, ideals and practical exigencies that motivated engineers and artists to transform their communities, through the application of scientific, economic, social, philosophical, and practical knowledge. The course will introduce some of the challenges of materials, physical knowledge, construction techniques, and societal pressures that medieval and renaissance engineers faced. Students will study problems associated with such innovation. The aim of such study will be to link the problems of the past with the modern search for more and more effective solutions.

Students will gain hands-on knowledge by constructing models of some of the examples from class and will be introduced to topics like force, work, and energy. As such students will acquire the ability to work in groups to create, imagine, design, realize and recreate key engineering achievements that moved the Western world from antiquity to modernity, all rooted in an accessible exploration of key physics principles.

Students will also learn to recognize and articulate how certain developments in European economic systems, military institutions, spirituality and esthetics affected technological progress in the medieval and early modern period. We will also discuss how this case study of Renaissance physics informs modern innovations of these technologies.

**Course Materials and Resources**(to which others may be added as necessary**):**

*Cathedral, Forge, and Waterwheel: Technology and Invention in the Middle Ages*, Frances and Joseph Gies, Harper Perennial Press, ISBN 0-06-016590-1, 1995.

*A World Lit Only by Fire*, William Manchester.

*Brunelleschi’s Dome: How a Renaissance Genius Reinvented Architecture*, Ross King.

A variety of original sources indicated in the specific daily assignments.

Other course resources, including:

[Visit to St. Peter's Basilica](http://www.vatican.va/various/basiliche/san_pietro/vr_tour/index-en.html)

[Visit to the Leaning Tower of Pisa](http://www.airpano.com/360Degree-VirtualTour.php?3D=Pisa-Tuscany-Central-Italy)

[Visit to the Cathedral of Florence](http://www.panoramicearth.com/5380/Florence/Florence_Cathedral%C2%A0)

[Tower of London](http://www.londononline.co.uk/towerguide/Intro/)

[Chartres Cathedral](http://gallery.sjsu.edu/chartres/home.html%C2%A0)

[Windmills of Holland](http://www.holland.com/global/tourism/article/dutch-windmills.htm)

[Gothic Architecture/Cathedrals.](https://www.youtube.com/watch?v=lg_9weu4M08)

[Romanesque/Gothic/Renaissance](https://prezi.com/ezbghd5tmqmi/romanesque-gothic-renaissance-architecture/)

**Assessment:**

Individual Project Presentation (25%): Students will research and present to the class on a topic covered in the course. The final week is reserved for individual presentations, but students may give their presentations earlier in the semester if they wish. Details to be discussed with the course instructors.

Group Projects (25%): Students will select, organize, and present their projects in groups. Besides the three major projects, there will be other brief one-day minor projects connected to relevant readings/video material.

Participation (15%): Students need to demonstrate apprehension of the important points made in assigned readings by referencing and applying them in class discussions. Cross-referencing between different readings and the physical principles you are learning about is strongly encouraged.

Final Paper (15%): five to six-pages typescript (1250-1500 words). Focusing on some aspect of the Renaissance in particular, but covering previous and subsequent developments as you feel necessary, compare and contrast the differing approaches to cultural history taken in *Cathedral, Forge, and Waterwheel, A World Lit Only by Fire*, and *Brunelleschi’s Dome.*

Seven Writing Assignments with corresponding Timeline Posts (20%): Five Writing Assignments that ask you to respond with a few sentences to questions on the secondary readings. For each writing assignment, make two posts to your [MyHistro timeline](http://www.myhistro.com/). Be prepared to be called upon to show and briefly discuss your timeline posts in class.

**Week 1**

8/22 W Introduction and class assignments ([MyHistro class timeline).](http://www.myhistro.com/) Song of the Day: [Welcome to the Renaissance (Something Rotten)](https://youtu.be/y5C-ji5z_Lw).

8/24 F Judeo-Christian foundations. Readings: [Book of Genesis](http://vulgate.org/), [Tower of Babel Painting, Bruegel the Elder](https://www.google.com/culturalinstitute/beta/asset/bAGKOdJfvfAhYQ?utm_source=google&utm_medium=kp&hl=en%20(Links%20to%20an%20external%20site.)Links%20to%20an%20external%20site.); Secondary readings: Gieses, chapter 1: “Nimrod’s Tower; Noah’s Arc” (pp.1-16) and chapter 2: “The Triumphs and Failures of Ancient Technologies” (pp.17-38). Song of the Day: [Tower of Babel (Elton John (Links to an external site.)](https://www.youtube.com/watch?v=1TAjGOkQh7Y)

**Week 2**

8/27 M The “Not-so-Dark Ages.” Readings: Gieses, chapter 3: “The Not-so-Dark Ages” (pp. 39-81); Manchester, chapter 1: “The Medieval Mind” (pp.1-28).  Song of the Day: [I won't back down (Tom Petty)](https://www.youtube.com/watch?v=nvlTJrNJ5lA).

8/29 W The “Not-so-Dark Ages.” Lindisfarne Abbey. Primary viewing: [The Lindisfarne Gospels Online Gallery](http://www.bl.uk/onlinegallery/sacredtexts/lindisfarne.html).

8/31 F  The “Not-so-Dark Ages.” Sacred Spaces: Basilica, Romanesque, and Gothic. Song of the Day: [Cathedral (Crosby, Stills and Nash)](https://youtu.be/oA1I11IeF8U) [Submit Writing Assignment 1 with Timeline Posts.](https://ufl.instructure.com/courses/350605/quizzes/624535)

**Week 3**

9/3 M    Labor Day

9/5 W The “Not-so-Dark-Ages.” Primary Readings: [The preface of Otfried von Weissenburg's Gospel-harmonization](http://www.harbornet.com/folks/theedrich/hive/Medieval/Otfrid.htm); [The Lay of Hildebrand.](http://www.pitt.edu/~dash/hildebrand.html) Song of the Day: [You're so vain (Carly Simon).](https://youtu.be/eoDjgElzTso)

9/7 F The “Not-so-Dark-Ages.” Agriculture from the Mediterranean Basin to northern Europe. Primary reading: [Lutrell Psalter 19-24.](http://www.bl.uk/onlinegallery/ttp/luttrell/accessible/introduction.html)Secondary readings: Gies, chapter 4: “The Asian Connection” (pp. 82-104); Manchester, chapter 2: “The Shattering” (pp. 31-52).

**Week 4**

9/10 M The “Not-so-Dark Ages.” Agriculture: Horse v. Ox, three-field rotation. Primary reading: [Lutrell Psalter 25, 26.](http://www.bl.uk/onlinegallery/ttp/luttrell/accessible/introduction.html) Secondary readings: Gies, chapter 5: “The Technology of the Commercial Revolution” (ca. pp.105-125); Manchester, chapter 2: “The Shattering” (ca. pp. 53-74); Song of the Day: [She thinks my tractor's sexy (Kenny Chesney).](https://youtu.be/uWu4aynBK7E)

9/12 W Power Generation: Simple Machines, Mechanical Advantage.

9/14 F  Power Generation: Milling, Water Power. [Visit the mills at Barbegal](http://www.romanaqueducts.info/aquasite/arlesb/index.html); [the Roman flour mill.](http://www.waterhistory.org/histories/barbegal/)[Writing Assignment 2 with Timeline Posts.](https://ufl.instructure.com/courses/350605/quizzes/624536)

**Week 5**

9/17 M Mini-Project: Lifting Devices. Secondary readings: Gieses, chapter 5: “The Technology of the Commercial Revolution” (ca. pp. 126-146); Manchester, chapter 2: “The Shattering” (ca. pp. 75-96); Song of the Day: [Defying gravity (Wicked)](https://youtu.be/IXzFOHrycHg)

9/19 W Music and Information Theory. Song of the Day: [Doe a Deer (Julie Andrews, Sound of Music) (Links to an external site.)Links to an external site.](https://youtu.be/bJJUG_Elt5g)

9/21 F Cathedral Demo Day

**Week 6**

9/24 M Innovations in Warfare: Castle Designs. Secondary readings: Gies, chapter 5: “The Technology of the Commercial Revolution” (ca. pp.147-165); Manchester, chapter 2: “The Shattering” (ca. 97-118).

9/26 W Innovations in Warfare: Ballista, Catapult, Trebuchet.  Siege Engine Assignment made.

9/28 F  Innovations in Warfare: Stirrups, Armor, Ax and Bow, couched lance. Song of the Day: [Monty Python, We're knights of the Round Table](https://youtu.be/m9wdYy3tCm4);[Writing Assignment 3 with Timeline Posts.](https://ufl.instructure.com/courses/350605/quizzes/624537)

**Week 7**

10/1 M Textiles: The Bayeaux Tapestry. [Build your own Bayeux Tapestry (Links to an external site.)Links to an external site.](http://www.bayeuxtapestry.org.uk/interactive/BayeuxCreate.htm); [Learn how to dye it](https://bayeux.wordpress.com/2008/05/11/medieval-dyes-and-dyeing/). [Look at a Roman edition of Boccaccio's "De Casibus Virorum Illustrium" showing Lady Fortune spinning her wheel](https://commons.wikimedia.org/wiki/File:ForutuneWheel.jpg). Secondary readings: Gies, chapter 6: “The High Middle Ages” (ca. pp.166-180); Manchester, chapter 2: “The Shattering” (pp. 119-140). Song of the Day: [Tapestry (Carole King).](https://youtu.be/68v4NZG4xgE)

10/3 W Innvovations in Poetry. Primary reading: Marie de France, [Lay of Lanval.](http://www.arthuriana.org/teaching/Marie_Lanval_Shoaf.html) Song of the Day: Forever Man (Eric Clapton). Secondary readings: Ross King, *Brunelleschi’s Dome: How a Renaissance Genius Reinvented Architecture*(chapters 1-10; pp. 1-90); Gies, chapter 6: “The High Middle Ages” (ca. pp.181-195); Manchester, chapter 2: “The Shattering” (pp. 141-162).

10/5 F  Innovations in Poetry: Primary reading: Excerpts from Dante, [Vita Nuova (readings TBA).](https://digitaldante.columbia.edu/library/la-vita-nuova-frisardi/)[Week 7 Questions and Posts to the Class Timeline](https://ufl.instructure.com/courses/355282/pages/discussion-questions-for-week-1). Song of the Day: [Burning Love (Elvis Presley).](https://youtu.be/ide7Y9LK6b4)

**Week 8**

10/8 M  Visit by Caroline Bruzelius, Anne M. Cogan Professor of Art, Art History, and Visual Studies at Duke University. Her topic will be announced.

10/10 W Innovations in Politics. Primary reading: Machiavelli's Excerpts from The Prince (Readings to be announced).

10/12 F Innovations in Politics. Primary reading: Machiavelli's Machiavelli's Excerpts from The Prince (Readings to be announced)[;](https://ufl.instructure.com/courses/355282/pages/discussion-questions-for-week-1)[Writing Assignment 4 with Timeline Posts.](https://ufl.instructure.com/courses/350605/quizzes/624538)

**Week 9**

10/15 M Plague!: Causes, Artistic Representation, Impact. Primary readings and viewing: [Bruegel the Elder Triumph of Death](https://www.wikiart.org/en/pieter-bruegel-the-elder/the-triumph-of-death-1562-1); [Boccaccio's Decameron Intro to Day 1.](http://www.gutenberg.org/files/23700/23700-h/23700-h.htm#Day_the_First) Secondary readings: Gies, chapter 6: “The High Middle Ages” (ca. pp.196-210); Manchester, chapter 2: “The Shattering” (ca. 163-184); Song of the Day: [The Black Death (Something Rotten)](https://youtu.be/JSUIQgEVDM4)

10/17 W Siege Engine Demo Day. Song of the day: [Hit me with your best shot (Pat Benatar)](https://youtu.be/serV18MirGg)

10/19 F Innovations in Warfare: [Hundred Years War, Crecy v. Hastings](https://ufl.instructure.com/courses/355282/files/folder/Week%203%20Resources?preview=34212205). [Week 9 Questions and Posts to the Class Timeline](https://ufl.instructure.com/courses/355282/pages/discussion-questions-for-week-1). Song of the Day: [One Tin Soldier (The Original Caste).](https://youtu.be/cTBx-hHf4BE)

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**Week 10**

10/22 M Textiles: Spinning: [Spin like you're medieval;](https://youtu.be/205NAurrMOU) [How to spin yarn.](https://youtu.be/bKAJTKvl0nE) Secondary readings: Gies, chapter 6: “The High Middle Ages” (ca. pp. 211-222); Manchester, chapter 2: “The Shattering” (ca. pp. 185-206); Song of the Day:[Spinning Wheel (Blood, Sweat & Tears)](https://youtu.be/SFEewD4EVwU)

10/24 W Textiles: Weaving. How to Set Up A Standard Loom. Song of the Day: [Dream Weaver (Gary Wright)](https://youtu.be/xZKuzwPOefs)

10/26 F Textiles as Text. Primary viewings:  [Bronzino, Portrait of Eleonora of Toledo with her son Giovanni](https://artsandculture.google.com/asset/portrait-of-eleonora-di-toledo-with-her-son-giovanni/QAEccCsLDtbB4A); [Fabric and dress in Bronzino's portrait](https://www.jstor.org/stable/1482735?seq=1#page_scan_tab_contents); [Knan academy on Bronzino portrait.](https://www.khanacademy.org/humanities/renaissance-reformation/high-ren-florence-rome/pontormo/v/bronzino-portrait-of-eleonora-di-toledo-with-her-son-giovanni-1544-1545) [Writing Assignment 5 with Timeline Posts.](https://ufl.instructure.com/courses/350605/quizzes/624540)

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**Week 11**

10/29 M  Innovations in Printing: Johannes Gutenberg and his Printing Press. Secondary readings: Gies, chapter 6: “The High Middle Ages” (ca. pp.223-236); Manchester, chapter 2: “The Shattering” (ca. 207-219).

10/31 W Mini Project Printing.

11/2 F Homecoming

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**Week 12**

11/5 M Renaissance Figures: The Borgias and other Popes. Secondary readings: Gies, chapter 7: “Leonardo and Columbus” (ca. pp. 237-259); Manchester, chapter 3: “One Man Alone” (ca. pp. 223-255); discussion of Renaissance artistry to be announced.

11/7 W Renaissance Figures: Luther and the Reformation.  Reading: [Letter to the Medici Pope Leo X.](http://sourcebooks.fordham.edu/halsall/mod/luther-freedomchristian.asp)Song of the Day: [Manic Martin Luther Monday (Bangles lookalikes).](https://youtu.be/rZ3AFZXXX-k)

11/9 F  Renaissance Figures: Reading: Martin Luther, [Open Letter on Translating.](http://www.gutenberg.org/cache/epub/272/pg272-images.html) [Writing Assignment 6 with Timeline Posts.](https://ufl.instructure.com/courses/350605/quizzes/624539)

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**Week 13**

11/12 M  Veterans Day

11/14 W  Renaissance Figures: The Medicis, Economic Power, Patronage.  Gies, chapter 7: “Leonardo and Columbus” (ca. pp. 260-291); Manchester, chapter 3: “One Man Alone” (ca. pp. 256-296).

11/16 F  Renaissance Figures: Brunelleschi, Dome of Florence.  Visit to Florence Cathedral.

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**Week 14**

11/19 M  Field Trip: Harn Museum Goodies. [Writing Assignment 7 with Timeline Posts.](https://ufl.instructure.com/courses/350605/quizzes/624541)

11/21 W  Thanksgiving

11/23 F Thanksgiving

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**Week 15**

11/26 M  Renaissance Figures:  Michelangelo, Sculptor, Painter, Designer, Architect. Sistine Chapel, David, Met Exhibit Book.

11/28 W  Renaissance Figures:  Da Vinci, Artist, Inventor, Engineer. Da Vinci Notebooks.

11/30 F  Renaissance Figures: Columbus, Explorer, Navigator, Adventurer.

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Week 16

12/3 M Group Presentations

12/5 W Group Presentations