

## **History 115: Technology and History**

**HIST 115** 115-S1 (76838) Winter Term 2014  
**Time:** 6–9 PM Wednesday  
**Location:** TB 95

**Instructor:** Lech Lebiedowski  
**Office:** Tory 2-108  
**Office Hours:** After class on Wednesday

Email: [lech@ualberta.ca](mailto:lech@ualberta.ca) **Before you contact me check the course syllabus first to see if the information you require is there.**

### **Course Description:**

This course examines the development of various technologies and their impact on the course of history. The topics will vary from stone tools to atomic airplanes and we will examine both successful technologies and the ones which failed. This course will include various pictures, information and artifacts, which are not presented in any textbook, hence **regular attendance is required!** The lectures/illustrations for this course will **NOT** be posted on the internet and students are expected to attend **all classes**. If you miss a lecture it is **your** responsibility to obtain class notes from your classmate. **I do NOT provide students with my lecture materials** (such as PowerPoint slides). Therefore, I recommend that you make it **a priority** to get the contact information of your classmate.

\*\*\*\*\***no previous knowledge of history of science or technology is required**\*\*\*\*\*

### **Course Objectives:**

- 1) to trace the origins of our modern technological society
- 2) learn key concepts, developments, and events in the history of technology

### **Required text:**

Cardwell, Donald. Wheels, Clocks, and Rockets. A History of Technology. New York: W.W. Norton, 2001. (c.30\$)

### **Assignments/Exams/Grade Distribution:**

Midterm Exam 2 hours:	35% <b>Midterm exam</b> Wednesday, February 12, 6-8pm
Quiz <b>cumulative</b> 40 min.:	15% <b>Quiz</b> Wednesday, March 19, 6-6:40pm
Final Exam <b>cumulative</b> 2 hours:	50% <b>Final Exam</b> <u>Tentative date</u> Wednesday, April 9, 6-8pm*

\*Students are responsible for verifying the **date, location and time** of the final exam

**Exams** may include **combination** or **one** of the following question types: fill in the blanks, identifications, short answer, true/false, short essays, and long essays. Detailed format of the exams will be provided in class during review lectures. (Sample exams and quiz are at the end of the syllabus).

**Grades:** will be assigned as follows:\*

**A+** 97-100%\*\* **A** 92-96 **A-** 86-91 **B+** 79-85 **B** 70-78 **B-** 63-69 **C+** 59-62 **C** 55-58 **C-** 53-54 **D+** 51-52 **D** 50 Minimal pass **F** 49-0

\*Final grades in this class may be curved if the class **as a whole** appears to perform much better or much worse than expected by the U of A standards —**I reserve the right to lower or boost final grades accordingly**

\*\* If no exam attains 97% or higher A+ may be granted to the highest exam/exams in the class

## Topics and Required readings

(This list is provided as a rough guide only and I reserve the right to make changes to the subject, content and order of lecturers as the course progresses).

### Week 1

**Wednesday** (January 8)

L1 Introduction

L2 From stone tools to first civilization (Sumerians)

**Required readings: Wheels, Clocks, and Rockets pp. 3-19**

### Week 2

**Wednesday** (January 15)

L3 Egyptian technologies

L4 From agriculture to early science (Greeks)

**Required readings: Wheels, Clocks, and Rockets pp. 20-29**

### Week 3

**Wednesday** (January 22)

L5 Invention of inventing (Alexandria)

**Required readings: Wheels, Clocks, and Rockets pp. 29-48**

### Week 4

**Wednesday** (January 29)

L6 Engineering under Roman Empire part I-military

L7 Engineering under Roman Empire part II-civilian

### Week 5

**Wednesday** (February 5)

L8 Chinese technologies and European connection

L9 Mechanical Universe and "Revolution in time"

**Midterm exam format review**

### Week 6

**Wednesday** (February 12)

**Midterm exam 6-8pm**

### Week 7

**Wednesday** (February 19)

**Reading Week no Class**

### Week 8

**Wednesday** (February 26)

L10 Was Aristotle wrong?-new directions and new approach

L11 Age of experimentation

**Required readings: Wheels, Clocks, and Rockets pp. 49-101**

### Week 9

**Wednesday** (March 5)

L12 From experimentation to utility-Industrial Revolution

**Required readings: Wheels, Clocks, and Rockets pp. 105-153**

### Week 10

**Wednesday** (March 12)

L13 "The day when iron will float"-Transportation Revolution (water transport)

L14 'Puffing Devils'-Transportation Revolution (land transport)

**Quiz format review**

**Required readings: Wheels, Clocks, and Rockets pp. 153-203 and pp. 228-280**

### Week 11

**Wednesday** (March 19)

**Quiz (6-6:40pm)**

L15 Dream of flight

**Required readings: Wheels, Clocks, and Rockets pp. 364-424**

### Week 12

**Wednesday** (March 26)

L16 Technoscience, warfare and formation of the modern world

L17 From "Planet Dora" to the moon

**Required readings: Wheels, Clocks, and Rockets pp. 425-456**

**Week 13****Wednesday** (April 2)

L18 World of “Technopoly”(modern technologies and you)

**Final exam format review****Required readings: Wheels, Clocks, and Rockets pp. 457-513****Week 14** (April 9)**Final Exam 6-8pm****Additional Sources/ Readings NOT mandatory****Week 1****Additional sources-not mandatory (available from U of A libraries):**Nowell, April. Stone tools and the evolution of human cognition. University Press of Colorado, c2010.Crawford, Harriet E. W. Sumer and the Sumerians. Cambridge University Press, 2004.Glassner, Jean-Jacques. The invention of cuneiform: writing in Sumer. Johns Hopkins University Press, 2003.Kramer, Noah. Sumerian culture and society: the cuneiform documents and their cultural significance. Cummings, 1975.Brewer, Douglas J. The archaeology of ancient Egypt: beyond pharaohs. Cambridge University Press, 2012.Dodson, Aidan. The tomb in Ancient Egypt: royal and private sepulchres. Thames & Hudson, 2008.**Week 2****Additional sources-not mandatory (available from U of A libraries):**Leucippus. The atomists, Leucippus and Democritus: fragments: a text and translation. University of Toronto Press, 1999.Themistius. On Aristotle Physics. Bristol Classical Press, 2012.Bendick, Jeanne. Archimedes and the door of science. F. Watts, 1962.Gardner, Martin. Archimedes, mathematician and inventor. Macmillan, 1965.**Week 3****Additional sources-not mandatory (available from U of A libraries):**Hero, of Alexandria. The pneumatics of Hero of Alexandria. Macdonald & Co., 1971.Drachmann, Aage Gerhardt. Ktesibios, Philon and Heron, a study in ancient pneumatics. Zwets & Zeitlinger, 1968.MacLeod, Roy M. The Library of Alexandria: centre of learning in the ancient world. I.B. Tauris, 2004.Von Staden, Heinrich. Herophilus: the art of medicine in early Alexandria. Cambridge University Press, 1989**Week 4****Additional sources-not mandatory (available from U of A libraries):**McEwen, Indra Kagis. Vitruvius: writing the body of architecture. MIT Press, 2003.Humphrey, John William. Greek and Roman technology: a sourcebook. Routledge, 1998.Kaiser, Alan. Roman urban street networks. Routledge, 2011.Anderson, James C. Roman architecture and society. Johns Hopkins University Press, 1997.Favro, Diane G. The urban image of Augustan Rome. Cambridge University Press, 1996.Carcopino, Jérôme. Daily life in ancient Rome: the people and the city. Yale University Press, 1992.Robinson, O. F. Ancient Rome: city planning and administration. Routledge, 1992.**Week 5****Additional sources-not mandatory (available from U of A libraries):**Zhongguo ke xue ji shu bo wu guan. China's ancient technology. China reconstructs magazine, 1983.Landes, David S. Revolution in time: clocks and the making of the modern world. Harvard University Press, 2000.**Week 6**

No readings assigned (midterm exam)

**Week 7**

No readings assigned (winter break)

**Week 8****Additional sources-not mandatory (available from U of A libraries):**Kuhn, Thomas S. The structure of scientific revolutions. University of Chicago Press, 1996.Merton, Robert. Puritanism and the rise of modern science: the Merton thesis. Rutgers University Press, 1990.Zilsel, Edgar. The social origins of modern science. Kluwer Academic Publishers, 2003.Innis, Harold. Empire and communications. Dundurn Press, 2007.Butterfield, Herbert. The origins of modern science. Clarke, Irwin & Co., 1968.Bacon, Francis. The advancement of learning. Floating Press, 2010.Bacon, Francis. The New Atlantis. Floating Press, 2009.Bacon, Francis. The great instauration. AHM Pub. Corp., 1980.Newton, Isaac. Mathematical principles of natural philosophy. Encyclopædia Britannica, 1952.Sprat, Thomas. The history of the Royal-Society of London. Printed by T. R. for J. Martyn, 1667.

### **Week 9**

#### **Additional sources-not mandatory (available from U of A libraries):**

- Stuart, Robert. A descriptive history of the steam engine. Nonsuch, 2007.
- Fang, Hsien-ting. The triumph of the factory system in England. Porcupine Press, 1978.
- Mantoux, Paul. The Industrial Revolution in the eighteenth century. University of Chicago Press, 1983.
- Auerbach, Jeffrey. Britain, the empire, and the world at the Great Exhibition of 1851. Ashgate Pub. Company, 2008.
- Official descriptive and illustrated catalogue of the Great Exhibition of 1851. Spicer Bros., 1851.
- Gaspey, William. Tallis's illustrated London: in commemoration of the Great exhibition of 1851. J. Tallis, 1851.
- Roberts, D. Pictures of the Great Exhibition painted for His Royal Highness Prince Alber. Dickinson, Bros., 1852.

### **Week 10**

#### **Additional sources-not mandatory (available from U of A libraries):**

- Brindle, Steven. Brunel: the man who built the world. Weidenfeld & Nicolson, 2005.
- Brunel, Isambard Kingdom. Brunel, in love with the impossible. Bristol Cultural Development Partnership, 2006.
- Hearn, Chester. Circuits in the sea: the men, the ships, and the Atlantic cable. Praeger, 2004.
- Buchanan, R. A. Brunel: the life and times of Isambard Kingdom Brunel. Hambledon and London, 2002.
- Stephenson, Robert. Observations on the comparative merits of locomotive & fixed engines: as applied to railways : being a reply to the report of Mr. James Walker, to the directors of the Liverpool and Manchester Railway. Printed by Wales and Baines, and sold by them and the booksellers in Liverpool, 1830.
- Clarke, Hyde. The high pressure steam engine and Trevithick. S.n., 1847.
- McGowan. C. The Rainhill Trials: The Birth of Commercial Rail. Little, Brown, 2004.

### **Week 11**

#### **Additional sources-not mandatory (available from U of A libraries):**

- Frater, Alexandre. The balloon factory: the story of the men who built Britain's first flying machines. Picador, 2008.
- Dee, Richard. The man who discovered flight: George Cayley and the first airplane. McClelland & Stewart, 2007.
- Constant, Edward. The origins of the turbojet revolution. Johns Hopkins University Press, 1980.
- Whittle, Frank. Gas turbine aero-thermodynamics: with reference to aircraft propulsion. Pergamon Press, 1981.
- Mattingly, Jack. Elements of gas turbine propulsion. American Institute of Aeronautics and Astronautics, 2005.
- Duke, Neville. Sound barrier; the story of high-speed flight. Cassell, 1954.

### **Week 12**

#### **Additional sources-not mandatory (available from U of A libraries):**

- Béon, Yves. Planet Dora: a memoir of the Holocaust and the birth of the space age. Westview Press, 1997.
- Schafft, Engle. Commemorating hell: the public memory of Mittelbau-Dora. University of Illinois Press, 2011.
- Michel, Jean. Dora. Weidenfeld and Nicholson, 1979.
- Biddle, Wayne. Dark side of the moon: Wernher von Braun, the Third Reich, and the space race. W. Norton, 2009.
- Hunley, J. D. Preludes to U.S. space: Goddard rockets to Minuteman III. University Press of Florida, 2008.
- Gainor, Chris. To a distant day: the rocket pioneers. University of Nebraska Press, 2008.
- Cadbury, Deborah. Battle between America and the Soviet Union for dominion of space. HarperCollins, 2008.

### **Week 13**

#### **Additional sources-not mandatory (available from U of A libraries):**

- Finn, Chester. Troublemaker: a personal history of school reform since Sputnik. Princeton University Press, 2008.
- Dickson, Paul. Sputnik: the shock of the century. Walker & Co., 2001.
- Birdsall, Carolyn. Sound, technology and urban space in Germany, 1933-1945. Amsterdam University Press, 2012.
- Katz, Eric. Death by design: science, technology, and engineering in Nazi Germany. Pearson/Longman, 2006.
- Mumford Lewis, The Myth of The Machine. New York : Harcourt, Brace & World, 1970.
- Postman, Neil. Technopoly. New York: Vintage Books, 1992.
- Florman, Samuel C. The Existential Pleasures of Engineering. New York, St. Martin's Press, 1976.
- Ellul, Jacques. Technological Society. London: Jonathan Cape, 1965.
- Franklin, Ursula M. The Real World of Technology. New York: House of Anansi Press, 2011

## Course/University Policies:

- 1. Any recording (including taking of pictures) is strictly prohibited. Students who ignore this policy (intentionally or unintentionally) will have their cases submitted for disciplinary action.**
2. Make sure to check your university email account regularly as this is the only way I can contact you outside of classroom.
3. You are always welcome during my office hours or you can make an appointment. I will be happy to discuss any concerns, problems, or suggestions you may have. Remember that you are required to report any problems with the course in writing to the instructor first.

Course Prerequisite: **none**

Course-based Ethics Approval: **not needed**

Community Service Learning: **N/A**

Past or Representative Evaluative Course Material: **provided with the syllabus**

Additional mandatory Instructional fees (approved by Board of Governors): **none**

Graded attendance and participation component: **none** (however regular attendance is **required**)

## Required Notes:

“Policy about course outlines can be found in Section 23.4(2) of the University Calendar.”

**Academic Integrity:** “The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Code of Student Behaviour (online at <http://www.governance.ualberta.ca/en/CodesofConductandResidenceCommunityStandards/CodeofStudentBehaviour.aspx> ) and avoid any behaviour that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.”

## Learning and working environment:

The Faculty of Arts is committed to ensuring that all students, faculty and staff are able to work and study in an environment that is safe and free from discrimination and harassment. It does not tolerate behaviour that undermines that environment. The department urges anyone who feels that this policy is being violated to:

- Discuss the matter with the person whose behaviour is causing concern;
- or • If that discussion is unsatisfactory, or there is concern that direct discussion is inappropriate or threatening, discuss it with the Chair of the Department. For additional advice or assistance regarding this policy you may contact the student ombudservice: (<http://www.ombudservice.ualberta.ca/> ). Information about the University of Alberta Discrimination and Harassment Policy and Procedures can be found in the GFC Policy Manual, section 44 available at <http://gfcpolicymanual.ualberta.ca/> .

## Plagiarism and Cheating:

All students should consult the “Truth-In-Education” handbook or Website ( <http://www.uofaweb.ualberta.ca/TIE/> ) regarding the definitions of plagiarism and its consequences when detected. Students involved in language courses and translation courses should be aware that on-line “translation engines” produce very dubious and unreliable “translations.” Students in language courses should be aware that, while seeking the advice of native or expert speakers is often helpful, excessive editorial and creative help in assignments is considered a form of “cheating” that violates the code of student conduct with dire consequences. An instructor or coordinator who is convinced that a student has handed in work that he or she could not possibly reproduce without outside assistance is obliged, out of consideration of fairness to other students, to report the case to the Associate Dean of the Faculty. Before unpleasantness occurs consult <http://www.uofaweb.ualberta.ca/TIE/>; also discuss this matter with any tutor(s) and with your instructor.

## Recording of Lectures:

Audio or video recording of lectures, labs, seminars or any other teaching environment by students is allowed **only** with the prior written consent of the instructor or as a part of an approved accommodation plan. Recorded material is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the instructor.

## Attendance, Absences, and Missed Grade Components (for forms and details see the next page):

Regular attendance is essential for optimal performance in any course. In cases of potentially excusable absences due to illness or domestic affliction, notify your instructor by e-mail within **two days**. Regarding absences that may be excusable and procedures for addressing course components missed as a result, consult sections 23.3(1) and 23.5.6 of the University Calendar. Be aware that unexcused absences will result in partial or total loss of the grade for the “attendance and participation” component(s) of a course, as well as for any assignments that are not handed-in or completed as a result.

### Absences from **midterm exam/presentation/essay/quiz**:

A student who cannot write the midterm, quiz, essay or present due to incapacitating illness, severe domestic affliction or other compelling reasons can apply for an excused absence. If the absence is excused, the **weight of the midterm exam/essay/quiz/presentation will be transferred to the final exam weight. There will be NO makeup midterm exam/essay/quiz/presentation.** If the absence is not excused, the student will receive a mark of zero (0) for the midterm exam/essay/quiz/presentation. To apply, please fill out and sign an Exam Absence Form (next page of the syllabus). Excused absence is **a privilege** and not a right; **there is no guarantee** that an excused absence will be granted. Misrepresentation of Facts to gain a deferral is a serious violation of the Code of Student Behaviour.

For specific details see the University of Alberta Calendar, Section 23.3 (1).

In summary:

1. Notify your instructor by e-mail within **two days** following the missed exam/presentation.
2. Fill out and sign an Exam Absence Form (**the form is located on the next page of the syllabus**)

### Absences from **final exam/deferred final**:

**Date:** Deferred final exam will be held within 2 weeks of the scheduled final. Precise date, location and time will be assigned once all the applications for the deferred final are approved.

See Section 23.5.6 of the University Calendar for details on deferring exams. Valid reasons for deferring an exam are:

Incapacitating illness  
Family emergencies/domestic affliction  
Religious convictions

If these factors apply, students can apply to defer final exam. The deferral process is as follows:

**The decision to grant a deferred final exam is NOT the instructor's.** There is only one date for deferred final exams (deferred exam: must be held within 2 weeks of the scheduled final).

1. Complete application form (available at **your Faculty office**). This application must be supported by a University of Alberta Medical Statement form if the cause of the deferral is illness or other documentation explaining the absence. The application must be presented to the Faculty within **two working days** following the missed examination, or as soon as you are able due to the circumstances underlying your absence.
2. Have the application approved by the Dean or Delegate of your Faculty. Please note that your Faculty **is not obligated** to grant you a deferral. All deferrals are granted at the discretion of the Faculty.
3. Your Faculty **must** inform the History and Classics Department. The Department will then notify me and you will be provided with the date for the deferred exam.

Always check with your Faculty for any faculty-specific requirements.

**If you have any further questions, contact the Student Ombud Service for advice** <http://www.ombudservice.ualberta.ca/>

## Midterm Exam/ Presentation/Quiz/Essay Absence Declaration Form

## DECLARATION

**in the matter of absence from Midterm Examination or Presentation or Essay**

I, \_\_\_\_\_ Student ID# \_\_\_\_\_  
(Print Name in full)

of \_\_\_\_\_ in the Province of Alberta  
(Address)

do solemnly declare that I was absent from \_\_\_\_\_ until \_\_\_\_\_

(Day, Month, Year) (Day, Month, Year) and that I missed c Midterm Examination c Presentation

in \_\_\_\_\_ on \_\_\_\_\_  
(Course name, number, section) (Day, Month, Year)

Lech Lebieadowski

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(Instructor Name)

for the following reason(s):

[illegible]

\_\_\_\_\_  
(Declarant's Signature) Date: \_\_\_\_\_

1. Completion of this form **does not imply approval** for an excused absence.
2. Making **a false** statement on this form will constitute grounds for a **charge to be laid against you** under the Code of Student Behaviour, Section 30.3.6(4) Misrepresentation of Facts: “No Student shall misrepresent pertinent facts to any member of the University community for the purpose of obtaining academic or other advantage.”

## Hist 115 Sample Exams

### Hist 115 Final Exam

2 hours 6-8pm

Format: exam has IV parts

1. This is a closed book examination. No aids are allowed.
2. Write in **pen**.
3. Remember to put your name, student number and signature.
4. Remember to put the first letter of your last name in the upper right corner of the **examination booklet**.

**Please answer all questions in original order in examination booklet provided.**

#### **Part I True/False questions from textbook (1p each=10p)**

1. The author discussed Antikythera
2. Overall the author used biological-determinism
3. The author discussed steam-engines of *Titanic*
4. According to the author the *Great Eastern* was a technological failure
5. According to the author Watt copied his engine from Trevithick
6. The author discussed works of Jules Verne
7. According to the author Watt opposed the high-pressure steam engine
8. Overall according to the author science had limited impact on technology
9. According to the author the Space Gun was a failure
10. According to the author Heron stole designs from Archimedes

#### **Part II 10 True/False questions from lectures (1p each=10p)**

1. Lockheed SR-71 was a technological failure
2. Leonardo da Vinci was the greatest inventor
3. Antikythera was not used for general navigation
4. Newton was the first modern scientist
5. There is no such thing as entirely independent/new invention
6. CF-105 could not fly into space
7. Brunel was a man ahead of his time
8. Most modern technologies were invented independently in United States
9. Internal combustion engine does not run on steam
10. All major scientists associated with Scientific Revolution were German

#### **Part III 4 short answer-point form (10p each 40p)**

1. Using point form please outline (in chronological order up to 1829) development and use of steam engine. Make sure to include all necessary dates/ names/ events/ arguments etc .
2. Using point form please outline (chronologically from Pre-Socratics to Aristotle) achievements/discoveries of all early philosophers, inventors, scientists. Make sure to include all necessary dates/names/events/arguments etc.
3. Using point form please outline (chronologically development of flying contraptions (including balloons) /airplanes up to the Black Bird-1964). Make sure to include all necessary dates/ names/ events/ arguments etc .
4. Using point form please outline Roman technologies (civilian and military). Make sure to include all necessary dates/ names/ events/ arguments etc .

#### **Part IV 1 essay (40p)**

Imagine you are an externalist studying history of Scientific Revolution what arguments would you present to convince your colleague scholar (an internalist) about the correctness/superiority of your external approach? **Please explain why and support your argument with specific examples from the lectures relating to Scientific Revolution period. (Make sure to include all necessary dates/ names/ events/ arguments etc.)**



**Hist 115 Midterm Exam**

\_\_\_\_\_  
**first letter of  
your surname**

**Duration: 2 hours**  
**Exam has IV parts**  
**Exam is worth 35%**

Surname: \_\_\_\_\_

Given Names: \_\_\_\_\_

I.D. Number: \_\_\_\_\_

Student's signature \_\_\_\_\_

Read the following instructions:

1. This is a closed book examination. No aids are allowed.
2. Write in **pen**.
3. Hand in all work.
4. Remember to put your name, student number and signature.
5. **Remember to put the first letter of your surname in the upper right corner**

**Remember that:**

1. **you are required to use information from the lectures ONLY.**
2. **it is your responsibility to write legibly-if the answer is written in an obscure manner it will be assumed that it is incorrect and given mark of 0.**

**Part I 10 True/false questions (1p each=10p) please circle correct answer**

1 great pyramid of Giza was built by slaves	True	False
2 Posidonius introduced Greek gods, such as Poseidon etc.	True	False
3 Pliny's encyclopedia is acclaimed for its reliability	True	False
4 Striga was a Roman measuring equipment	True	False
5 Vallum was a famous Greek general	True	False
6 Vallum was a famous Roman general	True	False
7 Velites were used by the Romans for production of cement	True	False
8 overall Rome was built of marble	True	False
9 Agora was widely used by the Romans during road construction	True	False
10 Triarii was a famous slave who worked on Roman roads	True	False

**Part II 40 identifications (1p each=40p) Please identify the following; make sure to provide not only the identification but also nationality/region/country of origin (where applicable). Dates are NOT required in this section.**

- 1 Thales \_\_\_\_\_
- 2 Hesiod \_\_\_\_\_
- 3 Vindolanda \_\_\_\_\_
- 4 Summum dorsum \_\_\_\_\_
- 5 Uruk \_\_\_\_\_
- 6 Imhotep \_\_\_\_\_
- 7 Academy \_\_\_\_\_
- 8 Milliarium Aureum \_\_\_\_\_
- 9 Aquinas \_\_\_\_\_
- 10 Jikji \_\_\_\_\_
- 11 Astrarium \_\_\_\_\_
- 12 Lucy \_\_\_\_\_
- 13 Su Song \_\_\_\_\_
- 14 Richard of Wallingford \_\_\_\_\_
- 15 Constantine \_\_\_\_\_
- 16 Antikythera \_\_\_\_\_
- 17 Aristarchus \_\_\_\_\_
- 18 Al-Mamun \_\_\_\_\_
- 19 cesium-133 \_\_\_\_\_
- 20 Oldowan tools \_\_\_\_\_
- 21 Homo Erectus \_\_\_\_\_
- 22 Abul-Abbas \_\_\_\_\_
- 23 potassium nitrate \_\_\_\_\_
- 24 Acheulean tools \_\_\_\_\_
- 25 Syracuse \_\_\_\_\_
- 26 Fust \_\_\_\_\_
- 27 Posidonius \_\_\_\_\_
- 28 Groma \_\_\_\_\_
- 29 Hestia \_\_\_\_\_
- 30 Great Rift Valley \_\_\_\_\_
- 31 Gutenberg \_\_\_\_\_
- 32 Black Death \_\_\_\_\_
- 33 Dardanelle guns \_\_\_\_\_
- 34 Anaximander \_\_\_\_\_
- 35 Cuneiform \_\_\_\_\_
- 36 Zeno \_\_\_\_\_
- 37 Empedocles \_\_\_\_\_
- 38 Democritus \_\_\_\_\_
- 39 Phalanx \_\_\_\_\_
- 40 Manipule \_\_\_\_\_

**Part III 20 identifications-dates (1p each=20 points)**

- 1 107BC \_\_\_\_\_

- 2 1347 \_\_\_\_\_
- 3 1450 \_\_\_\_\_
- 4 1455 \_\_\_\_\_
- 5 1327AD \_\_\_\_\_
- 6 80AD \_\_\_\_\_
- 7 868AD \_\_\_\_\_
- 8 2500BC \_\_\_\_\_
- 9 410AD \_\_\_\_\_
- 10 1714AD \_\_\_\_\_
- 11 2650BC \_\_\_\_\_
- 12 2613BC \_\_\_\_\_
- 13 600AD \_\_\_\_\_
- 14 753BC \_\_\_\_\_
- 15 1770AD \_\_\_\_\_
- 16 1094AD \_\_\_\_\_
- 17 1095AD \_\_\_\_\_
- 18 753- 510BC \_\_\_\_\_
- 19 1377AD \_\_\_\_\_
- 20 1364AD \_\_\_\_\_

#### **Part IV**

##### **1 short essay (30p)**

What was unique about the Alexandria and what were the theoretical and practical achievements of Alexandrian thinkers/scientists/inventors/doctors. Make sure to include all necessary dates/names/theories/arguments/events etc.

**Hint:** in your essay you should consider Ptolemy, Mouseion, Archimedes, Eratosthenes, Heron, Herophilus, Erasistratus and Claudius Ptolemy

### **Hist 115 Quiz**

\_\_\_\_\_  
**first letter of  
your surname**

**Duration: 40 minutes**

**Exam has II parts**

**Exam is worth 15%**

Surname: \_\_\_\_\_

Given Names: \_\_\_\_\_

I.D. Number: \_\_\_\_\_

Student's signature \_\_\_\_\_

Read the following instructions:

1. This is a closed book examination. No aids are allowed.
2. Write in **pen**.
3. Hand in all work.
4. Remember to put your name, student number and signature.
5. **Remember to put the first letter of your surname in the upper right corner**

**Remember that:**

**It is your responsibility to write legibly-if the answer is written in an obscure manner it will be assumed that it is incorrect and given mark of 0.**

**Part I True/false questions from the textbook (2p each=20p) please circle correct answer**

1 The author discussed the works of Shakespeare	True	False
2 The author discussed in detail <i>Pneumatica</i> of Heron	True	False
3 The author discussed the Great Exhibition of 1851	True	False
4 According to the author Trevithick failed because of James Watt's opposition	True	False
5 The author starts his book by detailed discussion of Sumerian technologies	True	False
6 The author starts his book by detailed discussion of stone tools	True	False
7 The author provided a detailed discussion of the Gutenberg's invention	True	False
8 Overall the author concentrated on military technologies	True	False
9 The author argued that Trevithick's engine had great impact on the Industrial Revolution	True	False
10 The author discussed the <i>Great Eastern</i>	True	False

**Part II Fill in the blanks questions from the lectures (40 questions 2 point each=80 p)**

1. *De Revolutionibus Orbium Coelestium* was published in (year)\_\_\_\_\_ AD
2. Argument that mathematics are universal was made by (name of the person)\_\_\_\_\_
3. Aristarchus introduced concept of \_\_\_\_\_
4. Social constructivism is associated with the (which approach)\_\_\_\_\_ approach
5. Cuneiform was introduced in (year) c. \_\_\_\_\_ BC
6. Early agriculture took place in Mesopotamia between c. \_\_\_\_\_ -10,000BC
7. First sail ships appeared in c. (year)\_\_\_\_\_ BC
8. Astrarium was built by (name of the person)\_\_\_\_\_
9. "Puritanism and the Rise of Modern Science" was written by (name of the author)\_\_\_\_\_
10. Mouseion was opened in c. (year)\_\_\_\_\_ BC
11. One of the first to measure pulse rate by clock was (name of the person)\_\_\_\_\_
12. Title of the first scientific journal was \_\_\_\_\_
13. *Pneumatica* by Heron was based on experiments of Ctesibius and (name of the person)\_\_\_\_\_
14. John Wilkinson introduced new \_\_\_\_\_ machine
15. Su Song Clock was the first to use the \_\_\_\_\_ mechanism
16. Vindolanda letters were written by common officers, soldiers, women, slaves and \_\_\_\_\_
17. *Starry Messenger* was written by (name of the author)\_\_\_\_\_
18. *Great Eastern* was the first ship designed and built without (standard component of traditional hull) \_\_\_\_\_
19. In 1704 \_\_\_\_\_ was printed (title of the book)
20. *Instauratio Magna* was published in (year)\_\_\_\_\_
21. Fourth line in the Roman army system was called the \_\_\_\_\_
22. Alexander Bain introduced the \_\_\_\_\_ machine
23. The most elaborate architectural order used by Romans was the \_\_\_\_\_ order/style
24. The *Almagest* was written by (name of the author)\_\_\_\_\_

25. "The Origins of Modern Science" was written by (name of the author) \_\_\_\_\_
26. Factory steam engine was introduced in (year) \_\_\_\_\_
27. Chinese Imperial exams were introduced in (year) \_\_\_\_\_ AD
28. *Catch Me Who Can* was introduced in (year) \_\_\_\_\_
29. *Rob Roy* was built by (name of the person) \_\_\_\_\_
30. Academy of Sciences was established in France in (year) \_\_\_\_\_
31. *Anno mirabilis* (year of miracles) refers to the year \_\_\_\_\_ AD
32. In 1377AD \_\_\_\_\_ was printed (title of the book)
33. First European clock was built in c. (year) \_\_\_\_\_ AD
34. Applied art was introduced in the year \_\_\_\_\_
35. Work of Edgar Zilsel represents (which approach) \_\_\_\_\_ approach
36. *Impetus* theory was introduced in (year) \_\_\_\_\_ AD
37. Argument that *ipsa scientia potestas est* (Knowledge is power) was made by (name of the person) \_\_\_\_\_
38. External steam condenser was introduced by (name of the person) \_\_\_\_\_
39. *Empire and Communications* was written by (name of the author) \_\_\_\_\_
40. Soho engine factory was opened in (year) \_\_\_\_\_

### Hist 115 Midterm Exam

Duration: 2 hours

Exam has V parts

Read the following instructions:

1. This is a closed book examination. No aids are allowed.
2. Write in **pen**.
3. Hand in all work.
4. Remember to put your name, student number and signature.
5. **Remember to put the first letter of your last name in the upper right corner of the Examination Booklet.**

**Remember that:**

**1. It is your responsibility to write legibly-if the answer is written in an obscure manner it will be assumed that it is incorrect and given mark of 0.**

**Answer part V in the Examination Booklet provided**

### Part I Fill in the blanks (50 questions 1 point each=50 p)

41. Roman 3 line system actually had (how many) \_\_\_\_\_ lines
42. Candle Clock was invented in (name of the country) \_\_\_\_\_
43. Black Death took place in \_\_\_\_\_ AD
44. H1 was built by (name of the person) \_\_\_\_\_
45. The oldest city was the city of (name of the city) \_\_\_\_\_
46. *De Revolutionibus Orbium Coelestium* was published in \_\_\_\_\_ AD
47. Argument that mathematics are universal was made by (name of the person) \_\_\_\_\_
48. Domestication of farm animals (sheep, goats, pigs) took place in c. \_\_\_\_\_ BC
49. Milliarium Aureum was located in (name of the City) \_\_\_\_\_
50. Oldowan tools date between \_\_\_\_\_ mil. - 1.5 mil.
51. One of the first to measure pulse rate (by water clock) was (name of the person) \_\_\_\_\_
52. Vindolanda letters were written by common soldiers, women, children and \_\_\_\_\_
53. Homo Sapiens Sapiens appeared c. \_\_\_\_\_ years ago
54. Two major rivers in Mesopotamia were Tigris and \_\_\_\_\_
55. Eratosthenes was a director of the (name of the institution) \_\_\_\_\_

56. Population of Çatalhöyük was c. \_\_\_\_\_ people
57. The First Crusade took place in \_\_\_\_\_ AD
58. Earliest form of Cuneiform dates to c. \_\_\_\_\_ BC
59. Archimedian screw was used by the Roman in (place of use/installation) \_\_\_\_\_
60. First thinker to reject divine intervention was (name of philosopher) \_\_\_\_\_
61. "Bent Pyramid" was built for Pharaoh \_\_\_\_\_ (name of the Pharaoh)
62. Epicycles were introduced by (name of the person) \_\_\_\_\_
63. According to historical record the great pyramid of Giza dates to \_\_\_\_\_ BC
64. Plow was introduced in c. \_\_\_\_\_ BC
65. Seiko submitted first quartz watch for the time trials in the year \_\_\_\_\_
66. Balancing of 4 humours was promoted by (name of the thinker) \_\_\_\_\_
67. Early agriculture commenced in c. \_\_\_\_\_ -10,000BC
68. Lucy lived c. \_\_\_\_\_ million years ago
69. Famous siege of Syracuse commenced in the year \_\_\_\_\_ BC
70. Natural philosophy/science was born in Greece during \_\_\_\_\_ th century BC
71. Fertile Crescent was first occupied by (name of civilization) \_\_\_\_\_
72. Mouseion (temple of the Muses) was opened by (name of the person) \_\_\_\_\_
73. Astrarium was built by (name of the person) \_\_\_\_\_
74. Anaximander was a student of (name of his mentor) \_\_\_\_\_
75. Escapement mechanism was introduced in China by (name of the inventor) \_\_\_\_\_
76. The oldest stone pyramid in the world dates to \_\_\_\_\_ BC
77. Small stick that was used to measure the Earth was called the (in Greek) \_\_\_\_\_
78. In c. \_\_\_\_\_ BC Romans abandoned Phalanx system
79. Prehistoric period dates before \_\_\_\_\_ BC
80. *On Sphere-making* was written by \_\_\_\_\_ (name of the author)
81. World's first underground sewer system was the (Latin name) \_\_\_\_\_
82. *The Rise of the Roman Empire* was written by (name of the author) \_\_\_\_\_
83. First truly mechanical clock was built in China in \_\_\_\_\_ AD
84. Numerical dating for historical events was introduced by (name of the person) \_\_\_\_\_
85. First mathematical model of the cosmos was proposed by (name of the person) \_\_\_\_\_
86. Argument that everything is made from atoms was made by (name of the person) \_\_\_\_\_
87. *History of Animals* was written by \_\_\_\_\_ (name of the author)
88. Harrison H5 was completed in the year \_\_\_\_\_
89. Press of Gutenberg was introduced in \_\_\_\_\_ AD
90. Marcus Claudius Marcellus was responsible for the destruction of (name of the city) \_\_\_\_\_

/50

## Part II 10 Identifications (1p each=10p)

Please identify the following; make sure to provide not only the identification but also the significance (why was it important) Dates are NOT required for this section.

1. H5 \_\_\_\_\_
2. HeS3 \_\_\_\_\_
3. Castra \_\_\_\_\_
4. XFV-1 \_\_\_\_\_
5. Jikji \_\_\_\_\_
6. Calibre89 \_\_\_\_\_
7. Jumo004 \_\_\_\_\_
8. ANP \_\_\_\_\_

9. DH108 I \_\_\_\_\_

10. Abul-Abbas \_\_\_\_\_

### **Part III 10 Identifications-dates (1p each=10p)**

1. 1804 \_\_\_\_\_

2. c. 3200BC \_\_\_\_\_

3. 1347 \_\_\_\_\_

4. c. 14,000-10,000BC \_\_\_\_\_

5. 1450 \_\_\_\_\_

6. c.50AD \_\_\_\_\_

7. October 4, 1957 \_\_\_\_\_

8. 1095 \_\_\_\_\_

9. 1851 \_\_\_\_\_

10. October 14, 1947 \_\_\_\_\_

### **Part IV 5 True/false (1p each=5p)** (from textbook: Wheels, Clocks, and Rockets.)

Please circle correct answer

1. overall the author discussed in detail various mechanical inventions	<b>True</b>	<b>False</b>
2. in chapter 1 author discussed works of Heron	<b>True</b>	<b>False</b>
3. overall the author displayed a high degree of engineering knowledge	<b>True</b>	<b>False</b>
4. overall the author discussed various forgotten inventors (such as Trevithick)	<b>True</b>	<b>False</b>
5. overall the author discussed various forgotten Chinese technologies	<b>True</b>	<b>False</b>

### **Part V**

#### **1 essay question (25p) Answer part V in the Examination Booklet provided**

**“James Watt was inventor of the steam engine”**

Do you agree or disagree with such statement? Based only on the information provided in class support your argument with ALL dates /names/details/events/theories/arguments etc.