

**WAYLAND BAPTIST UNIVERSITY**

**SCHOOL OF BEHAVIORAL & SOCIAL SCIENCES**

**Virtual Campus**

**Wayland Mission Statement:** Wayland Baptist University exists to educate students in an academically challenging, learning-focused, and distinctively Christian environment for professional success, and service to God and humankind.

**Course Title, Number, and Section:** HIST 5331, History of Science and Technology, VC 01

**Term: Fall 2017**

**Instructor: Dr. Eric Ash**

**Office Phone Number and WBU Email Address:** 907-375-4515; ashe@wbu.edu; cell phone 907-830-6168

**Office Hours, Building, and Location:** Office Hours 10 am to 6 pm M-F; Parkside Center, Anchorage Campus, room 206

**Class Meeting Time and Location:** Internet/Wayland VC Blackboard

**Catalog Description:** Examination of the influence of science and technology on Western Civilization in the modern era; may be repeated for credit when the topic changes.

**There is no prerequisite for this course**

**Required Textbook(s) and/or Required Material(s):**

*A Companion to American Technology*. Carroll Pursell, ed., Blackwell Publishing, 2008. ISBN 978-1-4051-7994-2

*Science and Technology in World History: An Introduction*, 3rd edition, James E. McClellan III and Harold Dorn, Hopkins Fulfillment Services, 2015. ISBN 1-4214-1775-8

**Optional Materials:** <<List optional materials recommended to enhance student learning>>

**Course Outcome Competencies:** Upon completion of this course, students will be able to:

* describe scientific and technological developments in Western civilization and their social impact from 1500 CE to the present
* understand the chronological relationship between various technological/scientific developments
* analyze and understand correlates and causalities between scientific discoveries and technological developments
* analyze social and political impacts on scientific and technological developments, concentrating on war, disease, and other crisis events
* identify historically key scientists, engineers, and technologists with significant inventions and engineering processes/products
* explain how and why scientists and technologists pursued the developments they did and what made them successful or unsuccessful
* identify significant historians and their contributions to the historiography of science and technology history

**Attendance Requirements:**

Virtual Campus

Students are expected to participate in all required instructional activities in their courses. Online courses are no different in this regard; however, participation must be defined in a different manner. Student “attendance” in an online course is defined as active participation in the course as described in the course syllabus. Instructors in online courses are responsible for providing students with clear instructions for how they are required to participate in the course. Additionally, instructors are responsible for incorporating specific instructional activities within their course and will, at a minimum, have weekly mechanisms for documenting student participation. These mechanisms may include, but are not limited to, participating in a weekly discussion board, submitting/completing assignments in Blackboard, or communicating with the instructor. Students aware of necessary absences must inform the professor with as much advance notice as possible in order to make appropriate arrangements. Any student absent 25 percent or more of the online course, i.e., non-participatory during 3 or more weeks of an 11 week term, may receive an F for that course. Instructors may also file a Report of Unsatisfactory Progress for students with excessive non-participation. Any student who has not actively participated in an online class prior to the census date for any given term is considered a “no-show” and will be administratively withdrawn from the class without record. To be counted as actively participating, it is not sufficient to log in and view the course. The student must be submitting work as described in the course syllabus. Additional attendance and participation policies for each course, as defined by the instructor in the course syllabus, are considered a part of the university’s attendance policy.

**Statement on Plagiarism and Academic Dishonesty:** Wayland Baptist University observes a zero tolerance policy regarding academic dishonesty. Per university policy as described in the academic catalog, all cases of academic dishonesty will be reported and second offenses will result in suspension from the university.

**Disability Statement:** In compliance with the Americans with Disabilities Act of 1990 (ADA), it is the policy of Wayland Baptist University that no otherwise qualified person with a disability be excluded from participation in, be denied the benefits of, or be subject to discrimination under any educational program or activity in the university.  The Coordinator of Counseling Services serves as the coordinator of students with a disability and should be contacted concerning accommodation requests at (806) 291- 3765.  Documentation of a disability must accompany any request for accommodations.

**Course Requirements and Grading Criteria:**

**CONTENT OF THE COURSE**: 1) Discussion Board collaborative learning over assigned reading from the textbook and PPT lecture notes/slides. 2) Research paper on a topic related to the history of science and technology. 3) Final exam.

Computer/Internet access: Students MUST have access to a computer and to internet service to fulfill the requirements of this course.

Communication: ***Successful communication is paramount for on-line/virtual campus courses. Please make every effort to keep in contact with the instructor, and keep trying to communicate if the instructor does not respond in a reasonable amount of time (there may be an “electric” problem). Please contact the instructor via telephone or e-mail as soon as registered in the course so that the communication process can start.***

Discussion board: Students must log onto the discussion board each week and provide a brief analysis of the weekly reading assignment. Students must also enter into the class dialogue with a critical analysis of at least one other student’s submission. These analyses and critiques require thoughtful analysis related to the week’s reading assignment, but there is no single “approved solution” to any of them.

Active, timely participation on the discussion board constitutes 50% of the grade in this course. Each Sunday evening at midnight US Central Time, the forum for the previous week will no longer be available. Therefore, it is imperative for students to submit their analyses and critiques prior to that cutoff in order to receive credit for that week’s discussion board. The Discussion Board is an excellent tool to help the class interact. Due to time zone challenges between Alaska and other student locations that can cause difficulties for students to log onto live classrooms, and to provide students the greatest amount of flexibility in completing this course, the Discussion Board will be the only interaction used in the course. Because of this, it is critical that students actively engage in the Discussion Board. Students should check it frequently to respond to their classmates and the instructor. Aside from the fact that the discussion board counts for 50% of the grade, generally, students who are most actively involved on the discussion board will learn the most and get the most out of the course.

Reading assignments: In addition to the textbook, students are expected to read any online lecture materials or reading assignments that may appear on the Blackboard site for this course. Most of the lessons will have accompanying “Voice Over” Power Point Slides, which students are expected to view/hear.

Written assignments: Graduate students must know how to write. The discussion board threads are not careless chat rooms for flash text-message replies. Students should consider discussion board submissions as solid analytical efforts that contribute to the class dialogue and student learning. In their reading analyses, students should concentrate on “critical thinking” skills to ultimately defend or attack their arguments related to assigned book or article readings. So, there are things to consider when thinking critically: linguistic style, historical accuracy, veracity of research, and methodology.

Likewise, students are advised to take the same approach when conducting research and writing their research papers. Research paper topics are at the discretion of the students, as long as they are related to the history of science and technology and their impact on society. Topics do not have to be cleared by the instructor, but students may ask the instructor for approval and are encouraged to seek instructor advice throughout the research and writing process. Research papers are to be 10-20 pages in length and are to be written using Turabian/Chicago as the style guide. Students are highly encouraged to use as many of the sources as possible that are listed in the standing bibliography at the end of this syllabus. The purpose of this is to promote students’ knowledge of the historiography. [hint: there may be questions on the final exam related to the authors and books listed in the standing bibliography]

**EVALUATION OF STUDENT PERFORMANCE:** The University has adopted a standard grading system as follows: “A” (90-100, meaning that the student has exceeded standards in an exceptional fashion), “B” (80-89; the student has done good work that is above average at the university level), “C” (70-79; the student has done the average work expected of an undergraduate), “D” (60-69; the student has met minimum college level standards), “F” (below 59; the student has failed to meet minimum college-level standards), “I” (incomplete), “W” (withdrew before the deadline and is given no grade), “WP/WF” (the student withdrew after the deadline for receiving just a “W” and was awarded a “withdrew passing” or “withdrew failing” mark). A grade of "incomplete" is changed if the deficiency is made up by the end of the next regular semester; otherwise, it becomes “F”. An incomplete grade is given only under exceptional, extenuating circumstances beyond a student's control, which prevented completion of the coursework during the semester.

**COMPUTATION OF THE FINAL GRADE:** The final grade for the course will be determined by averaging the Discussion Board analysis and critique grades (50%), the research paper (30%) and the open-book final exam (20%).

The University has a standard grade scale:

A = 90-100, B = 80-89, C = 70-79, D = 60-69, F= below 60, W = Withdrawal, WP = withdrew passing, WF = withdrew failing, I = incomplete. An incomplete may be given within the last two weeks of a long term or within the last two days of a microterm to a student who is passing, but has not completed a term paper, examination, or other required work for reasons beyond the student’s control. A grade of “incomplete” is changed if the work required is completed prior to the last day of the next long (10 to 15 weeks) term, unless the instructor designates an earlier date for completion.  If the work is not completed by the appropriate date, the I is converted to an F.

Student grade appeals:

Students shall have protection through orderly procedures against prejudices or capricious academic evaluation. A student who believes that he or she has not been held to realistic academic standards, just evaluation procedures, or appropriate grading, may appeal the final grade given in the course by using the student grade appeal process described in the Academic Catalog. Appeals may not be made for advanced placement examinations or course bypass examinations. Appeals limited to the final course grade, which may be upheld, raised, or lowered at any stage of the appeal process. Any recommendation to lower a course grade must be submitted through the Executive Vice President/Provost to the Faculty Assembly Grade Appeals Committee for review and approval. The Faculty Assembly Grade Appeals Committee may instruct that the course grade be upheld, raised, or lowered to a more proper evaluation.

**Tentative Schedule:**

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| Dates | Weekly Themes |
| Week 1:  | Early Technology and the Scientific and Industrial Revolutions *A Companion to American Technology* (Text): 1-54*Science and Technology* (Text 2): Chapt 14Lecture PPT |
| Week 2:  | Labor and Mass ProductionText: 55-112; 199-232Text 2: Chapt 15Lecture PPT |
| Week 3:  | TransportationText: 233-297Text 2: Chapt 17Lecture PPT |
| Week 4:  | Nuclear EraText: 298-321Text 2: Chapt 18/19 (first half)Lecture notes article Lecture PPT |
| Week 5:  | MedicineText: 156-178Text 2: Chapt 19, (second half) |
| Week 6:  | Eco-TechText: 113-155Lecture PPT |
| Week 7:  | The “Computer Revolution”Text: 321-362Text 2: Chapt 20Lecture PPT |
| **Week 8:**  | Techno-CultureText: 385-452 |
| **Week 9:**  | Military Technology and the MICLecture PPT and articles Research Paper Due midnight 16 Oct on Safe Assignments **AND** e-mail attachment to instructor |
| Week 10:  | Space TechnologyLecture Notes articles  |
| Week 11:  | Final Exam Due Midnight 30 Oct via e-mail to instructor |

**Standing Bibliography:**

Edgerton, David. *The Shock of the Old: Technology and Global History Since 1900*.

 Oxford University Press, 2007. (this is a provocative book)

Hjorth, Linda S., Eichler, Barbara A., Kahn, Ahmed S., and Morello, John A. *Technology*

 *and Society: Issues for the 21st Century and Beyond*, 3rd ed., Prentice Hall, 2008.

Jones, Howard Mumford. *The Age of Energy: Varieties of American Experience, 1865-1915*.

 New York, 1971.

Kranzberg, Melvin and Pursell, Jr., Carroll W. *Technology in Western Civilization*,

 Vol I and II, Oxford University Press, 1967.

Kuhn, Thomas J. and Porter, Allen L. eds. *Science, Technology, and National Policy*.

 Cornell University Press, 1981.

Lienhard, John H. *How Invention Begins*: *Echoes of Old Voices in the Rise of New*

 *Machines*, Oxford, 2006.

Marcus, Alan I. and Segal, Howard P. *Technology in America: A Brief History*. Harcourt

 Brace Jovanovich, 1989.

McNeill, *The Pursuit of Power. Technology, Armed Force and Society Since AD 1000*. Oxford,

 1982.

Moss, Walter G. *An Age of Progress? Clashing Twentieth-Century Global Forces*. 2008.

Mumford, Lewis. *Techniques and Civilization*. New York, 1934.

Perry, Lewis. *Intellectual Life in America: A History*. New York, 1984.

Scharff, Robert C. and Dusek, Val, eds. *Philosophy of Technology: The Technological*

 *Condition*. Blackwell Publishing, Ltd., 2003.

Singer, Charles, Holmyard E.J., Hall, A.R., and Williams, Trevor I.

 *A History of Technology*. 7 volumes, Early Times to 1950. Clarendon Press, 1954-78.

Spengler, Oswald. *The Decline of the West*. London, 1959.

Toynbee, Arnold. *Mankind & Mother Earth: A Narrative History of the World*. New York,

 1976.

Wigelsworth, Jeffry R. *Science and Technology in Medieval European Life*. Greenwood

 Press, 2006.

**Additional Information:**

[**http://catalog.wbu.edu**](http://catalog.wbu.edu)

**INSTRUCTOR AVAILABILITY:** Communication is perhaps the most critical component of a successful virtual campus class. Please contact me as soon as possible via e-mail from your Wayland e-mail account (and not through Blackboard, as that can fail, particularly if your account is inactive for some reason); or via telephone regarding ***any***issues, confusion, orproblems with the course. I am here for you. I have voice mail, so you can leave a message if I’m not able to pick up the phone when you call. For e-mail, please always clearly communicate the subject: “Science and Technology Grad Course,” and if you don’t receive a reply within 24 hours, please re-send the message and/or telephone me. I am often in my office, so don’t assume I have headed home for the evening just because it is after 9 pm Alaska time. You must activate your Wayland.wbu.edu e-mail account as soon as possible. That’s the email address on which you will receive information from me and from the university. As soon as you register for the course, please contact me via phone or e-mail so that we can get acquainted.