

Latin and Greek in Scientific Terminology

CLA201H5

CLASSES Tuesdays/Thursdays, 8 July–14 August 2014, 10:00 am–1:00 pm

LOCATION IB 335

INSTRUCTOR Andrew Dunning, andrew.dunning@utoronto.ca

OFFICE HOURS Tuesdays during term, 1:00–2:00 pm, NE 272A

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COURSE DESCRIPTION

The natural sciences, and the life sciences in particular, employ an enormous vocabulary of technical terms that present a sizeable challenge to the beginning student. The complexity of these terms is owed in part to the fact that many were formed from Greek and Latin words, in order to allow for easier communication within a multilingual scientific community at a time when most of its members learned these languages as a core part of their education. Although most students of the sciences are no longer expected to learn classical languages, a basic exposure to the Latin and Greek elements of scientific language can make it much easier to understand the meaning of technical terms and to expand one's scientific vocabulary.

No previous knowledge of Greek or Latin is expected of students.

Learning goals

- Acquire a working vocabulary of the fundamental Greek and Latin roots, prefixes, and suffixes key to understanding scientific terms.
- Develop competency in using unfamiliar words to communicate and comprehend scientific results in oral and written contexts.
- Gain the skills necessary to identify the Greek and Latin elements of scientific terminology and give their meaning.
- Understand the historical processes leading to the development of current scientific terminology.

ASSIGNMENTS

Assessment is based on a series of tests, in which you will demonstrate your knowledge of Latin and Greek word forms as applied to scientific terminology, and written assignments, in which you will demonstrate your ability to engage with scientific literature. These are weighted as follows:

- Test I (24 July): 20%
- Test II (7 August): 20%
- Pre-Lecture Analyses of Article Vocabulary: 10%

- In-Depth Analysis of Article Vocabulary (due 14 August): 15%
- Final Exam: 35%

No late assignments will be accepted without advance permission from the instructor.

Tests and final exam

Two general etymology tests will be given over the course of the term, in which you will analyse a set of words and give the meanings of their elements. The vocabulary for these tests will be drawn entirely from the master wordlist distributed to the class (which are derived from articles in your weekly readings and the books listed below under 'Other Learning Resources'). The final exam (cumulative) will combine these elements with discussions of terminology in passages from scientific articles, and short-answer questions on the historical development of scientific terminology.

Pre-lecture analyses of article vocabulary

During each lecture, we will dissect the terminology of two peer-reviewed scientific articles. Before class, skim one of the articles (to which links will be supplied on the Learning Portal) and make a list of ten words that you find unusual and appear to you to be based on Greek or Latin. Break down one of these words into its constituent roots based on the etymologies provided in dictionaries (please indicate which you are using). This must be submitted through the Learning Portal **by 11:59 pm the night before each class**. We will analyse these words during class the following day.

In-depth analysis of article vocabulary

This assignment builds on your weekly experience examining vocabulary from journals. Select twenty terms from two recent (2014) articles in peer-reviewed scientific journals, and analyse their etymology and meaning. You should use at least three different dictionaries (or other scholarly sources) to support your findings. Articles must be fully cited using either the author-date system of the *Chicago Manual of Style* (used in this syllabus) or another style relevant to your discipline.

READINGS

There is no required textbook for this course. All readings are available as PDFs through the Learning Portal; these supplement the lectures by providing historical background on the development of scientific terminology and some points of grammar. Questions on the history of science based on these readings will appear on the tests and final exam.

You will want to ensure that you have access to an English dictionary and a medical dictionary, both of which should have strong coverage of etymologies. The *Oxford English Dictionary* is excellent, but often more detailed than what you strictly need for this course. For quick reference, I would recommend Stevenson (2010), available through *Oxford Dictionaries* with recordings of pronunciation (also included with Mac OS X). For a medical dictionary, Venes (2013) is available in the library's reference collection (and, in theory, [available online through the library](#), but the format is very difficult to use). Both titles are available through the bookstore as recommended purchases, and are excellent investments.

You may wish to make use of two books on reserve at the UTM Library: Ayers (1972) is the source for most of this course's vocabulary and structure

for presenting concepts from Greek and Latin, while Haubrich (2003) is a useful reference tool for examining the origins of medical words.

Also in the library's reference collection, Liddell et al. (1996) and Lewis and Short (1879) are two of the most comprehensive dictionaries of Greek and Latin ([available online through Logeion](#)), while Glare (1982) is a more recent Latin dictionary. These books will be used during class, and you will need them for the in-depth analysis of article vocabulary.

SCHEDULE

Part I: Scientific terms from Greek

1. Tuesday, 8 July

- Course Introduction
- The History of English
- Guide to Reference Tools
- Greek Bases, Prefixes, and Suffixes

READ Turmezei (2012), an overview of the sources of words in anatomical terminology

2. Thursday, 10 July

- The Greek Alphabet
- Basic Concepts of Inflected Languages
- Greek Adjective-Forming and Compound Suffixes

READ Džuganová (1998), showing the difference between a prefix and a suffix; Dirckx (2006a), a summary of basic concepts

3. Tuesday, 15 July

- Greek Noun-Forming Suffixes
- Scientific Use of Greek and Latin

READ Džuganová (2013), explaining current approaches to terminology; Marečková, Šimon, and Červený (2002), on the future of Latin in the sciences

4. Thursday, 17 July

- Greek Plurals, Diminutives, and Verb-Forming Suffixes

READ Soutis (2006), discussing Greek words used in paediatric surgery

5. Tuesday, 22 July

- Evolving Meanings
- Terminology and History

READ Dirckx (2006b), on the origins of words used in anatomy; Kachlík et al. (2008), describing the standardization of terminology

6. Thursday, 24 July

- **Test I**
- Figurative Usage

READ Paluzzi et al. (2012), on terms used in neuroanatomy

Part II: Scientific terms from Latin

7. Tuesday, 29 July

- *Guest Lecture: Scientific Communication and Peer Review* (Vanessa Kitchin, University of Toronto Libraries)
- Latin Prefixes and Bases
- Hybrid Words

READ Garner (2014), on using scientific terminology to track plagiarism; Dirckx (1977), on the combination of Greek and Latin in a single word

8. Thursday, 31 July

- Latin Suffixes I
- Medieval Contributions to Scientific Terminology

READ Džuganová (2006), on prefixes and suffixes with a negative meaning; Dirckx (2007), a medieval approach to etymology

9. Tuesday, 5 August

- Latin Suffixes II
- Early-Modern Contributions to Scientific Terminology

READ Ivanová and Holomáňová (2001), discussing terminology reform by Vesalius; Musil et al. (2014), effects of early-modern scholarship on the nomenclature of the human skeletal muscles

10. Thursday, 7 August

- **Test II**
- Latin Nouns
- Latin Declensions and Plurals

READ Dirckx and Leider (1981), plurals of Latin nouns and adjectives

11. Tuesday, 12 August

- Latin Nouns II

READ Davis et al. (2014), on the etymology of the cranial nerves

12. Thursday, 14 August

- **In-Depth Analysis of Article Vocabulary Due**
- Latin Phrases
- Conclusion

READ Arroyo (2013), on scientific terminology in advertising

Final exam: To be announced

QUESTIONS

You may direct any questions or concerns about the lectures or assignments to the instructor either via email or during office hours. Please ensure that the course code (CLA201) is included in the subject line, and that you sign your message with your full name. I will respond to all messages within 48 hours.

MISSED AND LATE ASSIGNMENTS OR TESTS

Tests and assignments may be excused only in cases of medical or personal emergencies. Within one week of the event, absences must be reported online through ROSI, and in addition to notifying me via email. The weight of the excused test or assignment will be added to the weight of the next such item on the schedule. Pre-lecture analyses of article vocabulary may be excused, but not handed in late. The in-depth analysis of article vocabulary will only be accepted after the deadline with prior permission (which must be requested at least two days in advance via email).

ACADEMIC INTEGRITY

Academic integrity is fundamental to learning and scholarship; for a recent example of its importance to the sciences, see Garner (2014). Participating honestly, respectfully, responsibly, and fairly in this academic community ensures that the University of Toronto degree that you earn will be valued as a true indication of your individual academic achievement, and will continue to receive the respect and recognition it deserves. Potential offences include, but are not limited to:

In papers and assignments

- Using someone else's ideas or words without appropriate acknowledgement.
- Copying material word-for-word from a source (including lecture and study group notes) and not placing the words within quotation marks.
- Submitting your own work in more than one course without the permission of the instructor.
- Making up sources or facts.
- Including references to sources that you did not use.
- Obtaining or providing unauthorized assistance on any assignment, including working in groups on assignments that are supposed to be individual work or having someone rewrite or add material to your work while 'editing'.
- Lending your work to a classmate who submits it as his/her own without your permission.

On tests and exams

- Using or possessing any unauthorized aid, including a cell phone.
- Looking at someone else's answers
- Letting someone else look at your answers.
- Misrepresenting your identity.
- Submitting an altered test for re-grading.

Misrepresentation

- Falsifying or altering any documentation required by the University, including doctor's notes.
- Falsifying institutional documents or grades.

The University of Toronto treats cases of academic misconduct very seriously. All suspected cases of academic dishonesty will be investigated following the procedures outlined in the University of Toronto's [Code of Behaviour on Academic Matters](#). The consequences for academic misconduct can be se-

vere, including a failure in the course and a notation on your transcript. If you have any questions about what is or is not permitted in this course, please do not hesitate to contact me. If you have questions about appropriate research and citation methods, seek out additional information from me, or from other available campus resources. If you are experiencing personal challenges that are having an impact on your academic work, please speak to me or seek the advice of your college registrar.

ACCESSIBILITY

Students with diverse learning styles and needs are welcome in this course. If you have a disability or health consideration that may require accommodations, please feel free to approach me and/or the [AccessAbility Resource Centre](#) as soon as possible. AccessAbility staff (located in Room 2047, Davis Building) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. Please call 905-569-4699 or email access.utm@utoronto.ca. The sooner you let us know your needs, the quicker we can assist you in achieving your learning goals in this course.

The [Robert Gillespie Academic Skills Centre](#) is also available to all students, and offers a full range of workshops, seminars and individual consultations.

BIBLIOGRAPHY

The following resources are available through the University of Toronto library (the links below may only work on the campus network). PDFs can also be found on the Learning Portal.

- Arroyo, Marisa Díez. 2013. 'Scientific Language in Skin-Care Advertising: Persuading Through Opacity'. *Revista española de lingüística aplicada* 26: 197–213. <http://dialnet.unirioja.es/download/articulo/4597577.pdf>.
- Ayers, Donald M. 1972. *Bioscientific Terminology: Words from Latin and Greek Stems*. Tucson: University of Arizona Press.
- Davis, Matthew C., Christoph J. Griessenauer, Anand N. Bosmia, R. Shane Tubbs, and Mohammadali M. Shoja. 2014. 'The Naming of the Cranial Nerves: A Historical Review'. *Clinical Anatomy* 27 (1): 14–19. doi:10.1002/ca.22345.
- Dirckx, John H. 1977. 'Hybrid Words in Medical Terminology'. *Journal of the American Medical Association* 238 (19): 2043–45. doi:10.1001/jama.1977.03280200055019.
- . 2006a. 'Greek and Latin in Medical Terminology'. In *Stedman's Medical Dictionary*, 28th ed., appendix 9. Philadelphia: Lippincott Williams & Wilkins. <http://stedmansonline.com/webFiles/Dict-Stedmans28/APP04.pdf>.
- . 2006b. 'Anatomical Nomenclature: History'. In *Encyclopedia of Language & Linguistics*, edited by Keith Brown, 2nd ed., 244–52. Oxford: Elsevier. doi:10.1016/B0-08-044854-2/04268-1.
- . 2007. 'Isidore of Seville on the Origins and Meanings of Medical Terms'. *The American Journal of Dermatopathology* 29 (6): 581–83. doi:10.1097/DAD.0b013e3181597a43.
- Dirckx, John H., and M. Leider. 1981. 'A Description and Directory of Plural Forms of Medical Latin Words and Terms'. *The American Journal of Dermatopathology* 3 (1): 41–53. http://journals.lww.com/amjdermatopathology/Citation/1981/00310/A_description_and_directory_of_plural_forms_of.5.aspx.

- Džuganová, Božena. 1998. 'Word Analysis – a Useful Tool in Learning the Language of Medicine in English'. *Bratislavské Lekárske Listy/Bratislava Medical Journal* 99 (10): 551–53. <http://www.bmj.sk/1998/09910-09.pdf>.
- . 2006. 'Negative Affixes in Medical English'. *Bratislavské Lekárske Listy/Bratislava Medical Journal* 107 (8): 332–35. <http://www.bmj.sk/2006/10708-13.pdf>.
- . 2013. 'English Medical Terminology – Different Ways of Forming Medical Terms'. *JAHR* 4 (7): 55–69. <http://hrcak.srce.hr/file/162511>.
- Garner, Harold. 2014. 'The Case of the Stolen Words'. *Scientific American* 310 (3): 64–67. doi:10.1038/scientificamerican0314-64.
- Glare, P.G.W., ed. 1982. *Oxford Latin Dictionary*. Oxford: Clarendon Press.
- Haubrich, William S. 2003. *Medical Meanings: A Glossary of Word Origins*. 2nd ed. Philadelphia: American College of Physicians.
- Ivanová, Alena, and Anna Holomáňová. 2001. 'Anatomic Nomenclature by Vesalius'. *Bratislavské Lekárske Listy/Bratislava Medical Journal* 102 (3): 169–73. <http://www.bmj.sk/2001/10203-08.pdf>.
- Kachlík, David, Václav Báča, Ivana Bozděchová, Pavel Čech, and Vladimír Musil. 2008. 'Anatomical Terminology and Nomenclature: Past, Present and Highlights'. *Surgical and Radiologic Anatomy* 30 (6): 459–66. doi:10.1007/s00276-008-0357-y.
- Lewis, Charlton T., and Charles Short, eds. 1879. *A Latin Dictionary: Founded on Andrews' Edition of Freund's Latin Dictionary*. Oxford: Clarendon Press.
- Liddell, Henry George, Robert Scott, Henry Stuart Jones, and P.G.W. Glare, eds. 1996. *A Greek-English Lexicon*. 9th ed. with revised supplement. Oxford: Clarendon Press.
- Marečková, Elena, František Šimon, and Ladislav Červený. 2002. 'Latin as the Language of Medical Terminology: Some Remarks on Its Role and Prospects'. *Swiss Medical Weekly* 132 (41–42): 581–87. http://www.smw.ch/dfe/set_archiv.asp?target=2002/41/smw-10027.
- Musil, Vladimír, Zdeněk Suchomel, Petra Malinová, Josef Stingl, Martin Vlček, and Marek Vácha. 2014. 'The History of Latin Terminology of Human Skeletal Muscles (from Vesalius to the Present)'. *Surgical and Radiologic Anatomy*, May. doi:10.1007/s00276-014-1305-7.
- Paluzzi, Alessandro, Juan Fernandez-Miranda, Matthew Torrenti, and Paul Gardner. 2012. 'Retracing the Etymology of Terms in Neuroanatomy'. *Clinical Anatomy* 25 (8): 1005–14. doi:10.1002/ca.22053.
- Soutis, Michael. 2006. 'Ancient Greek Terminology in Pediatric Surgery: About the Word Meaning'. *Journal of Pediatric Surgery* 41 (7): 1302–8. doi:10.1016/j.jpedsurg.2006.03.011.
- Stevenson, Angus, ed. 2010. *Oxford Dictionary of English*. 3rd ed. Oxford: Oxford University Press. <http://www.oxforddictionaries.com/>.
- Turmezei, Tom D. 2012. 'The Linguistic Roots of Modern English Anatomical Terminology'. *Clinical Anatomy* 25 (8): 1015–22. doi:10.1002/ca.22062.
- Venes, Donald, ed. 2013. *Taber's Cyclopedic Medical Dictionary*. 22nd ed. Philadelphia: Davis.