

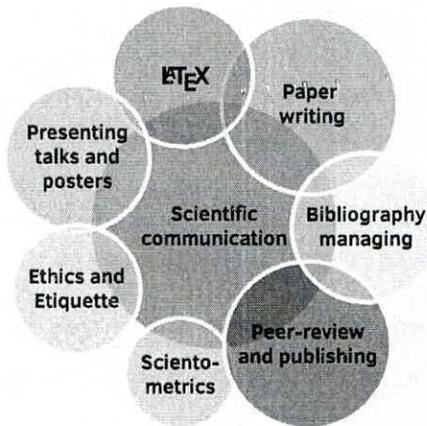
Essentials of Scientific Communication for Engineers

Credit hours: 4

A graduate course syllabus by Sergio A. Rojas, PhD.

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The Big Picture



Teaching method

Lectures

Demonstration\Lab

Collaboration

Independent

Bottom line



Cartoon credit: Jorge Cham (c) 2010.

Description

This course will guide graduate students through the different scenarios of modern scientific communication; it will focus on providing practical advice to improve skills needed to appropriately communicate their research results and to achieve publishing success.

The course comprises topics related to writing and submitting manuscripts, organising bibliographic sources, designing tables and figures, preparing oral and poster presentations, understanding the peer-review and publishing process, recognising the utility of scientometrics and research impact. All these scenarios would be presented highlighting the importance of observing scientific ethics and etiquette whilst taking advantage of well-known tools for research communication such as L^AT_EX and collaborative platforms for scientific edition.

Teaching objectives

The students will:

- Identify elements and scenarios of scientific communication and how they differ from other informal communication contexts.
- Be able to interpret, organise, structure and draft a scientific manuscript.
- Familiarise with tools for bibliography managing.
- Understand basic scientometric and impact factor measures.
- Acquire L^AT_EX skills to produce stylish scientific reports and presentations.
- Be acquainted with the code of good conduct in scientific publication.
- Be aware of the peer-review process and the "publish or perish" myth.
- Collaborate with fellow students to exercise written and oral communication cases.
- ... and finally, realise how relevant good scientific communication skills are in following a research career.

Course outline

Unit 1	Communicating science in the digital era	4h
	<ul style="list-style-type: none">• Finding, tracking, consuming and publishing scientific literature.• Tools for scientific edition: L^AT_EX, bibliographic DB and managers.	
Unit 2	Writing scientific papers	32h
	<ul style="list-style-type: none">• Structuring and drafting the paper.• The ethics of scientific publication.	
Unit 3	Publishing scientific papers	12h
	<ul style="list-style-type: none">• Deciding publication venue: scientometrics and visibility.• The peer-review process.• Publication business models.	
Unit 4	Beyond papers: communicating in academic events.	16h
	<ul style="list-style-type: none">• Preparing oral talks.• Participating in poster sessions.	

Bibliography

- Doumont, J., ed. *English Communication for Scientists*, Cambridge, MA: NPG Education, 2014.
- Touretzky, D. *Ethics and Etiquette in Scientific Research*, Carnegie Mellon University, 2007.
- Rojas, S. A. *Editor's notes*, Revista Ingeniería, Universidad Distrital, 2013-2016.
- Booth, W., Colomb, G. et al. *The Craft of Research*, University of Chicago Press, 4th edition, 2016.
- Avila, F. *Como se Escribe*, Norma, 2003.
- Lamport, L. *L^AT_EX: a document preparation system*, Addison Wesley, 2nd edition, 1994.