

Eliciting Components of a Scientific Paper to Provide Guidelines for the Purpose of Writing a Good Scientific Academic Paper.

Course 84833-01

Dr. Janette Segal

Course Type: (Lecture.)

Hour weekly: 3

Semester: ב'

Year: תשפ"ב

Day & Time : Tuesday 08:00-10:00 : [Course Website](#)

A. Course objectives and purposes:

The course is designed to help chemistry students write scientific research papers in chemistry for publication in English. The course is a practical course intended to focus on the moves and structure of all the components of the research paper. The course also provides guidelines on style and grammatical structures as well as focusing on important and useful vocabulary needed to enable the student to write and submit a full research paper by the end of the semester course.

Course outcomes

The student will be able to:

- Analyze, elicit and identify the moves and structure of each of the components of an academic scientific research paper.

- Write up a at least one draft of each of the components of an academic scientific research paper and at the end of the course submit the full research article.
- Develop better skills in style, language and grammar and expand vocabulary usage.
- Give a short presentation of the completed research paper to the rest of the class after learning and practicing presentation skills.
- Write more confidently using improved style and appropriate language and structure.

B. Course Topics.

The focus of the course is on analyzing the moves and structure of the abstract, materials and methods, introduction, results and discussion of a chemistry research paper. The student will use this model to then apply this model to writing a full chemistry research paper. The course will also focus on enhancing the students' knowledge of style, grammar and language skills as well as expanding the students' vocabulary in all the components of a scientific research paper.

Course meetings

Teaching methods include interactive activities, online learning, breakout activities on zoom, frontal teaching, as well as individual and group work classroom teaching. Students are encouraged to follow YouTube presentations of esteemed researchers on the topics of writing skills and academic research papers. Students are also encouraged to search for well written research papers in their field and analyze the structure and moves of these papers. Each lesson the students must submit classwork activities which are graded as well as submit homework tasks and drafts of the research paper. Bonus points are awarded for participation and effort throughout the semester course. The points gained are an integral part of the teaching methods and reflect the students' efforts throughout the course. The students are informed that the overall final grade is based on continual assessment and all tasks given must be submitted each lesson.

Detailed teaching program.

Lesson 1 a. Guidelines to writing a scientific paper in chemistry: an overview of the course and the requirements.

b. An overview of the structures and moves of each of the components of an academic research paper.

Lesson 2 a. Analyzing and eliciting the structure and moves of the Materials and Methods section.

b. Focus on the passive tense, in particular the past tense of the passive form.

c. Students receive a booklet compiled by this lecturer of examples of well written and published Materials and Methods components as well as key guidelines on grammar and style in this component. The booklet is also uploaded onto the Moodle.

Lesson 3. a Analyzing and eliciting the structures and moves of the Introduction component.

b. The students focus on the model of the Introduction and are required to find academic articles and identify the structure and moves and compare them to the model provided.

c. Students receive a booklet compiled by this lecturer of examples of well written and published Introduction components as well as key guidelines on grammar style and useful vocabulary for this component.

d. The student is given the dates of submission of each of the components of the research article in this order: materials and methods, introduction, results, discussion, abstract and title and final paper.

Lesson 4 a. Further focus on the introduction section in particular the literature review-comparing literature reviews for purpose of eliciting useful writing guidelines.

b. Peer Review. Students look at draft 1 of the work submitted by their peers on the materials and methods section and share comments.

Lesson 5 a. Grammar, Writing Style and Language Skills. The focus is on active and passive voice, clarity, concise language and punctuation.

b. Students receive a booklet compiled by this lecturer of examples of style and writing guidelines (The ACS Style Guide is used as a key reference throughout the course)

c. Students discuss style and in groups edit examples of poor academic writing using their booklets for reference.

Lesson 6 a. Students receive a booklet of useful vocabulary, strong verbs and concise terms. Focus is on reducing jargon and wordy phrases.

b. In groups students compare poorly written and well written components of an academic research paper focusing on grammar, clarity and concise writing.

Lesson 7 a. Analyzing and eliciting the moves of the Results section.

b. Students receive a booklet compiled by this lecturer with examples and guidelines of the results component.

c. Focus on grammar and the past tense

Lesson 8 a. Analyzing and eliciting the moves of the Discussion section.

b. Students receive a booklet compiled by this lecturer of examples of well written and published discussion components as well as key guidelines on grammar style and useful vocabulary for this component.

c. In groups students compare poorly written and well written discussion components in an academic research article.

Lesson 9 a. Peer Review. Students share draft 1 of work submitted by this stage: materials and methods the introduction and the results and discussion components.

b. Students compile their own lists of useful phrases and vocabulary elicited from well written academic research papers referring to the booklets supplied throughout the course and their own search of well written and published material on research close to their own research paper.

Lesson 10

a. Analyzing and eliciting the structure of the Abstract.

b. Comparing abstracts from academic research papers and eliciting the model for the abstract

c. Focusing on useful phrases to use in the abstract and avoiding wordy and unclear style and writing.

d. Students receive a booklet compiled by this lecturer of examples of well written and published abstracts in academic research papers.

Lesson 11

- a. References and reference managers: guidelines from academic scientific papers.
- b. Analyzing and eliciting the rules for writing the title of the academic research paper.

Lesson 12 Conclusions, Limitations and Future Research: comparing academic scientific papers with the purpose of eliciting guidelines for concluding the abstract and discussion components in particular.

Lesson 13 a. Presentation skills- elevator pitch. Preparing the students with key vocabulary, good grammatical phrases, and good presentation cues to help the student present their final papers to the class.

b. Students watch TED talks on scientific topics to elicit good presentation skills.

c. Students submit their final academic scientific research paper.

Lesson 14 a. Each student presents the final academic research paper to the class. The student is encouraged to not use any technical tools for the presentation –but rather to motivate and get the interest of the audience.

b. Each student has a personal interview to share feedback and receive the final class grade which is based on continual assessment.

C. Prerequisites:

The Chemistry Department of the University encourages PhD students who are writing their papers in English to register for this course on writing skills.

D. Course Requirements:

Mandatory attendance 90% of the course

The student must submit the required tasks every class lesson and every homework task required each week.

All classwork, homework and bonus work is graded weekly and points awarded for the submitted tasks.

The student is required to write at least 1 draft of each component of the academic research scientific paper

The student must submit the final paper on time –before presenting the paper to the class.

The students must give a short presentation of the completed research paper to the class in a clear, concise and motivational way.

The student is expected to actively participate in each of the classes and show effort by completing all the tasks at the given date.

E. Final Grading:

The final grading is composed of the following elements:

Attendance is mandatory

80% submitting classwork, homework and all the drafts satisfactorily and on time.

10% presentation of the final academic research paper

5% sharing and discussing work in progress during class and online

5% handing in the complete academic scientific research paper on time.

F. Bibliography

Textbooks and other suggested books.

The ACS Style Guide

Effective Communication of Scientific Information

Anne M, Coghill

Lorrin R. Garson

Editors

Oxford University Press

Science Research Writing

For Non-Native Speakers of English

Hilary Glasman-Deal

Imperial College Press