
**Programa de Pós Graduação em Enfermagem -
1º semestre - 2021**

**EG 140:Tópicos Especiais II : Developing Scientific Survival Skills for Young Scientists:
Focus on internationalization**

T-22 E-8 L-0 S-0 I-0 C-03 P-1º sem.

Coordenator: Maria Isabel Pedreira de Freitas
Associated Professor - Faculdade de Enfermagem – UNICAMP

Invited Professors :

Prof. Diego Mantovani, PhD, FBSE, Universidade Laval, Canadá

**Profa. Marisa Massumi Beppu : Main Professor - Faculdade de Engenharia
Química – Unicamp**

TARGET PPOPULATION: our graduate students, post-docs and young researchers
(professor within 5 years from enrollment from different institutes of Unicamp,

THE COURSE WILL BE ARTICULATED IN THE FOLLOWING LECTURES, IN REMOTE FORM:

From April 06 to June 27

- *9h00-12h00, presentations and discussion*

Context and Outline

In this 45 hours online & interactive workshop, we propose a graduate workshop designed and developed to give basic advice and offer mentorship to advanced undergraduates, graduates, post-docs and young scientists willing to enter the Global International Market of their discipline. The central theme of this course is that succeeding in Sciences (clinics, applied or natural) requires skills (often referred to as 'soft (or flexible) professional skills') beyond those needed for Sciences (often referred as 'hard (or rigid) professional skills'. The lecture aims at giving basic guidance for personal deepening and completed by further mentorship in a perspective of becoming an independent thinker and an autonomous scientist/worker, able to create and implement an international vision that goes beyond the personal and national boundaries.

The main topics of the sessions will be [1]:

- What are and how to integrate soft skills into professional life, what, when, how?
- The job market, and how benefit from it at local, national, and international levels?
- Seeking/applying to scholarships and funding, and how to afford international experiences in a global market

- Communication skills, including impacts and publications, planning, running and publishing quality papers
- Building your CVs, your works, planning your future CVs, and managing yourself
- The fundamental laws of 'scientific survival' (know yourself, plan ahead, and play chess)
- Ethics in science: From referencing to plagiarism, through ethical experimenting
- Alternative careers to science, but still high science content

Attention

Will be also focused on introducing the audience to the writing of quality papers, including [2]:

- Why do we need to publish and disseminate scientific results?
- When should we start writing a paper?
- Planning, visioning and imagining... it all starts from here.
- Experimenting, discussing and criticizing.
- Writing: alone or in a team effort? One shot or iteratively? English directly or translating?
- Reviewing manuscripts and papers, including our own.
- Criticism and constructive criticism.
- Reading before writing...
- Targeting the audience, and writing for them.

Structure of the course

This is an online course, planned and structured so to satisfy the exigencies of a 30 hours course at Unicamp, Campinas, Brazil, in both Schools, chemical engineering and nursing/nutrition, in collaboration with ULaval Graduate School in Materials and Metallurgy, including Biomaterials. An e-Course provides full flexibility to students to read documents, be challenged by new literature, search online pertinent information, with discipline. Procrastination is the main enemy of e-Courses. Students are required to keep the level, advance the work progressively, but at their own rhythm. Students are invited to block every other day sometime 60 to 120 minutes to work on the proposed documents, and finalize the discussion work that need to be remitted at the latest every two weeks.

This course plan will constitute the main documents for all academic activities, personal works, evaluations, and interactive spaces. Students are requested to read deeply and attentively this plan and access the online documents (a link to a Dropbox will be sent to each one individually).

This e-course is divided into 5 Blocks, where the first one is introductive to Soft Skills. Below, in the planning section of this document, all the required details are provided to students to be able to read, learn, exchange, and prepare a short individual document for each block.

Each Block includes an online folder. Students can find in this block a Masterfile ("read me first") that indicates them what they should read and listen. For each block, some references are also indicate and students are requested to deepen their knowledge and consolidate their critical thinking by reading few papers on pertinent topics. The goal of each block is to allow the student to prepare a few pages discussion work on the proposed block topic, as indicate below in this course plan.

The Masterfile, which is the file that students must read first, contain a number of useful information, including:

- A list of documents to read and study, intended to support the growth and the knowledge acquisition from the students; some documents are presented in pdf format (available on the dropbox) while others directly by links;
- A list of TED, or MOOC, or other youtube video selected for the students, to support in a coherent manner their growth and their critical thinking development;
- A list of documents to deepen their knowledge, synthesis and discussion abilities, or integrative capacity.

References

[1] F. Rosei, T.W. Johnston, "Survival Skills for Scientists", Imperial College Press (2006).
[2] G.M. Whitesides. Whitesides' Group: Writing a Paper. Adv. Mater. 16, 1375 (2004).
A number of pertinent references of reviewed works in the field, as well as TED or MOOC capsules online, as well as suitable links to actualities are provided to students. Students are invited to deepen their knowledge by searching online work and references confirm to their individual expectations.

Evaluation

The evaluation includes a discussion work to be sent to the section responsible, in pdf format, by and not later midnight of the latest day of the deadline mentioned in the above planning Table. Those students that would like to follow the course at accelerate speed, are invited to do so, and remit their work in advance. They will be assigned the next block work. Five (5) discussion works (10 % of the final score) will totalise 50% of the final score. A final assignment, under the form of a video report, or interview or other means (they will agreed with each student during the course length) will value 50% of the final score. The final scores will be available 10 working days after the remittal from the students of the last work.

Multicultural and Transversal Team Work (MTTW) is encourgaed (but not obliged) for the last assignement (40% of the final score). By MTTW we intend that a team of students can be formed, all students from different faculties. The score of the last assignement will be unique for all the team members.

Program schedule

The following is the program schedule. This schedule will be update regularly.

Legend: W-Works requested by students. Documents and clear instruction on what to do and how to remit will be provided; A-Availability by e-meeting of DM (and theme); E-Evaluation to be remitted by students.

When *	What	Deadlin e	Comments
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Week 13	The fundamental of 'soft skills' DM & MIP	April 4	Please complete the biosketch SSI form provided and send to DM 2 hours availability by GoToMeeting DATE AND HOURS TO BE FIXED** (all professors), join online*** at : https://global.gotomeeting.com/join/505195269 (to be updated)
Week 14-15	'Internationalization'. The fundamental laws of 'scientific survival' DM & MIP	From 5 to 18 April	W -Lectures to be done, synthesis, researches, integration (docs online) A -2 hours availability by GoToMeeting DATE AND HOURS TO BE FIXED** (DM), join online*** at : https://global.gotomeeting.com/join/505195269 (to be updated) Topic: soft skills, eCourse, questions? E -Two pages work to remit by Sunday 18 April (10% of the final score)
Week 16-17	Writing in science. Ethics in research, and the art of looking deeply into the mirror. DM&MI	From 19 to 2 May	W -Lectures to be done, synthesis, researches, integration (online) A -2 hours availability by GoToMeeting DATE AND HOURS TO BE FIXED**, join at: https://global.gotomeeting.com/join/537023045 (to be updated) Topic: internationalisation, with international graduates from ULaval E -Two pages work to be remitted by Sunday May 2nd (10% of the final score)
Week 18-19	Scientific career and beyond. How to plan, and why to keep doors open and prepare your self-confidence DM&MI	From 3 to 16 May	W -Lectures to be done, synthesis, researches, integration (online) A -2 hours availability by GoToMeeting DATE AND HOURS TO BE FIXED**, join at: https://global.gotomeeting.com/join/266948445 (to be updated) Topic: applying soft skills, play chess, project management, planning E -Two pages work to be remitted by Sunday May 16 (10% of the final score)
Week 20-21	Indicators and ranking. Critical thinking and deep analyses. MMB & MI	From May 17 to May 30	W -Lectures to be done, synthesis, researches, integration, (online) A -2 hours availability by GoToMeeting DATE AND HOURS TO BE FIXED**: https://global.gotomeeting.com/join/487019733 Topic: from school to work, how and when? E -Two pages work to be remitted by Sunday 30 May (10% of the final score)

Week 22-23	Biometry and scientific indicators of performance. Why and how? Is it worth? MMB &MI	From May 31 to June 13	<p>W-Lectures to be done, synthesis, researches, integration (docs available on May 22)</p> <p>A-2 hours availability by gotomeeting on June 2 (DM) 15h00-17h00</p> <p>https://global.gotomeeting.com/join/203680381</p> <p>also by phone: +1 647 497 9391, access code 203680381#</p> <p>Topic: Ethics, emotional intelligence, conflict management, team work management</p> <p>E-two pages work to remit by June 7 (10% of the final score)</p>
Week 24-25	Integrative work/research presented by video (all professors)	By June 20, midnight	E-50% of the final score, more details in class during the first meeting

*week refer to the sequential number of weeks, as of solar calendar

**between all the registered students, a doodle will be sent to find the suited time for all participants

***good wi-fi, head-set and camera will improve the quality.

INDICATIONS AND REQUIREMENTS FOR THE DISCUSSION WORKS

Objective: Sensibilize the students to read, understand, integrate, synthesize works published in the literature, so as to allow themselves to grow, develop and consolidate critical thinking. Depending on the level of evolution of each student, this work is expected to witness the ability of the student to develop a critical idea on the topic.

Requirements

After reading the suggested literature, listening the suggested video, and making a personal research (database privileged, if you do not know how to search on database, please let DM and Marisa Masumi Beppu or Maria Isabel Pedreira know, they will indicate how to access peer-reviewed literature), each student is individually required to i) synthesize the global information; ii) integrate different info sources; iii) develop a critical thinking by challenging each document and cross checking them; and iv) produce a two page report. This report will:

- Contain 2 pages maximum, simple interline, police Calibri, dimension 11, not including the first page (**generally containing title, name, first name, date, and other general information about the work and the student), the references and the annexes.**

Includes:

- The context, the pertinence, the impact and the originality of the topic;
- A section where a synthesis on the main important features and strategies are listed and explained. Please do not cut and paste any figures, illustrations, or other sections from articles and documents you read and consult. Instead, please use a maximum of Tables, organigrams, sketches, or illustrations.
- A critical section, where you challenge what you learned with your life and professional experience, and where you list actions that you might be able to implement on your professional life, based on what you learned and how you analyse and integrate it. Consulting databases such as Medline, Engineering Village, PubMed, and others is strongly encouraged.
- A schematic section listing an action plan, with a contingency plan for implementing what you learned in your everyday professional life.

Please remind that to be effective, while following and developing this course, you should apply what you read and listen to your own working life, professional experiences, and if you did not work yet deeply, apply this just to your team work, master research, doctoral experimental life, or generate a thinking on your past trainings/experiences.

The evaluation of the discussion work will be based on:

- 40% synthesis and integration, i.e. the ability to resume, condensate, integrate different information, acting transversal, and extracting the juice from the documents to read or to listen;
- 30% on thoughts, challenging, and questioning, i.e. the ability to apply what you read to your field, domain, work, everyday life;
- 30% on critical thinking, i.e. the ability to do not assume as true what is written or mentioned, but to validate, verify, and transversally integrate.

Instructor

DM, Diego Mantovani, PhD, FBSE, FASM, FAIMBE
 Full Professor, Dept Min-Met-Materials Eng.
 Director, Lab Biomaterials and Bioengineering
 Holder, Canada Research Chair Tier I
 Senior Scientist, Regenerative Medicine, CHU de Québec Research Center
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Biosketch: Diego Mantovani is the Director of Laboratory for Biomaterials and Bioengineering at Laval University, in Canada. Within his team, works focus on surface modifications by plasma, thin polymer functional films, cell-materials interactions, degradable metals, and scaffolds and bioreactors for the regeneration of cardiovascular

tissue. Since 2012, he is the holder of the Canada Research Chair Tier 1 in Biomaterials and Bioengineering for the Innovation in Surgery and 2013-2018 Adjunct Director of the Regenerative Medicine Division of the CHU of Québec city. He has authored more than 350 original articles (including Nature Cardiology, Nature Protocols, Langmuir, PNAS, Materials Today, Acta Biomaterialia, Biomaterials, Macromolecular Bioscience, Annals of Biomedical Engineering and others) holds 4 patents, and presented more than 270 keynotes, invited and seminar lectures worldwide in the field of advanced materials for biomedical and health applications. His works has been cited some 9000 times and his H-factor is 47. He was president of the Canadian Society for Biomaterials (2008-2009), elected member of the Executive Committee of World Biomaterials Congress in 2016 in Montreal, Canada and Chair of the International Symposium on Surfaces and Interfaces for Biomaterials in 2013. In 2009, he founded with Prof. Frank Witte (Berlin Charité Medical School) the Biometal Annual Conferences series devoted to Biodegradable Metals for Biomedical Applications. In 2012, he was elected Fellow of the World Biomaterials Science and Engineering Society, and in 2019 Fellow of the American Society for Materials Intl. Since 2012 he was invited to participate in Health Canada medical devices and since 2013 ASTM and FDA panels for degradable metals regulatory processes. In 2016, he was the Chair of the 10th World Biomaterials Congress bringing together in Montreal some 4000 specialists in the field from some 67 countries. Six special issues in leading journals were issued from International Symposia he chaired. He was invited professor in Medical, Engineering, Clinical centers in several Universities worldwide including Sichuan University, Ecole Nationale Supérieure de Chimie de Paris, University Paris XIII, University Paris VI, University Bordeaux, Berlin Charité, University of Namur, The University of Hong Kong, University of Oklahoma, University of Buenos Aires, University of Campinas (Science without Borders, CNPq), Instituto Balseiro, University of Rome La Sapienza, Polytechnic of Milan, University of Novara, University of Cergy-Pontoise, University of Torun, University of Ankara, The University of Oxford, and Vellore Institute of Technology. He collaborates on regular basis with BioPark, Toledo, Parana, Brazil, where he chaired the Biomaterials activities in R&D&I. He is member of the advisory board of three medical devices consortia in the Americas, Europe and Asia, on an exclusive and unique basis (by theme).

March, 10, 2021