

DEBATES ON DIVERSITY IN HISTORY OF SCIENCE AND ITS IMPLICATIONS FOR SCIENCE EDUCATION (MASTED-02-09)				
DEGREE PROGRAM:		Master in integrated STEAM Education (MASTED)		
SEMESTER: Second	TYPE: Basic	CREDITS: 6 ECTS	WORKLOAD: 150 hours	MENTORING: 2 hours/week
LANGUAGE: Portuguese/English friendly				

OBJECTIVES	
General	To recognize science as an activity made by people in different socio-historical contexts, the role of diversity in knowledge production, and the implications of this to contextual approach in science teaching.
Specific	<ul style="list-style-type: none"> • To understand the importance of representativeness in scientific community and science teaching; • To comprehend the role of minority groups in the social production of science; • To recognize the contributions of different societies to the construction of Western Science; • To recognize situations of gender, race, and ethnic prejudice and discrimination through historical case studies; • To elaborate teaching proposals able to promote equity and diversity among students.
SUBJECT MATTER	
It will be presented the contributions of different social groups (women, blacks, Latin-Americans, etc.) and different civilizations and countries to the building of science based on historical case studies. It will be discussed how the acknowledgment and insertion of these contributions in science teaching can promote diversity and representativeness in science teaching, and didactic strategies and obstacles for this insertion.	
COMPETENCES	
<ul style="list-style-type: none"> • C1: Developing knowledge and understanding in scientific community and science teaching. • C2: Developing advanced cognitive and procedural skills associated with knowledge development and creation. • C6: Developing the ability to pay attention to diversity and equality so as to favour the inclusion of all students. • C9: Integrating the theoretical knowledge acquired throughout the course with field practice. • C13: Developing citizenship competence. • C14: Developing advanced digital competences. • C15: Developing digital pedagogy competences to use, plan and implement new technologies. • C17: Embracing complexity in sustainability. 	
LEARNING OUTCOMES	
Knowledge	<ul style="list-style-type: none"> • Knowledge of educational sciences foundations (intercultural, historical, philosophical, psychological, sociological, theories).
Skills	<ul style="list-style-type: none"> • Establishment and development of goals, teaching assessment strategies and feedback that take into consideration and give some answer to the needs of students with different origins, abilities, interests, families and communities. • Ability to reflect on values appropriate to educational activities in multicultural and plural contexts. • Ability to work in interdisciplinary teams or from the same field of knowledge.
Attitudes/values	<ul style="list-style-type: none"> • Development of an epistemological awareness about historical development of science in different contexts. • Development of an epistemological and didactic awareness about science teaching for students from different socio-cultural origins.

	<ul style="list-style-type: none"> Disposition to examining, discussing, questioning one's own science teaching practices and discourses on history of science.
TEACHING METHODS	
Lectures, presentations and debates of pertinent literature and historical case studies. Debates on movies/documentaries and Lectures taken by invited researchers.	
EVALUATION	
Elaboration of teaching proposal and essays; participation and engagement in classroom debates and activities.	
PRECONDITIONS	
None	
DEPARTMENT	Institute of Chemistry
LECTURERS	Letícia dos Santos Pereira Climério Paulo Silva Neto
LITERATURE	<ul style="list-style-type: none"> Harrison, C. E., & Johnson, A. (2009). National identity: the role of science and technology. <i>Osiris</i> (Philadelphia, PA), 24. Lima, B. S. (2011). Quando o amor amarra: reflexões sobre as relações afetivas e a carreira científica. <i>Revista Gênero</i>, 12(1). Kohlstedt, S. G. (1995). Women in the history of science: An ambiguous place. <i>Osiris</i>, 10, 39-58. Lykknes, A., & Van Tiggelen, B. (Eds.). (2019). <i>Women in Their Element: Selected Women's Contributions to the Periodic System</i>. World Scientific. Oreskes, N. <i>Why Trust Science?</i>, 2019. Princeton: Princeton University Press. Pinheiro, B. C. S., & Rosa, K. (2018). <i>Descolonizando saberes: a Lei 10.639/2003 no ensino de ciências</i>. São Paulo: Editora Livraria da Física. Saldaña, J. J. (2007). <i>Science in Latin America: a history</i>. University of Texas Press. Warmager, P., & Heltzel, C. (2007). Alice A. Augusta Ball: Young Chemist Gave Hope to Millions. <i>ChemMatters</i>, 16. Schwartzman, S. (2001). <i>Um espaço para a ciência: a formação da comunidade científica no Brasil</i>. Brasília, Ministério da ciência e tecnologia.