Online Graduate courses in English at UFV

When?

2 August 2021 – 3 December 2021

Application (for exchange students or lecturers):

Steps for the application process:

1. You must be enrolled at a higher education institution, preferably in a graduate program; OR must be a lecturer in a higher education institution.
2. Before **July 22**, fill up the application form, uploading the required documentation:
   a. For exchange students: https://forms.gle/1ztPE4DUBjV11Jcv5
   b. For lecturers: https://forms.gle/Pu6C92Z9xzeHmUaz5
3. Your home university (study abroad office or another representative) must formally nominate you to UFV sending an email message to dri@ufv.br. UFV does not accept "self-nominated" candidates.
4. The coordinator of each UFV requested course will evaluate your application, based on your curriculum vitae and transcript of records.
5. The UFV international office will inform your home university the list of courses you are approved to register for.

MANDATORY: good internet connection to follow the activities!

IMPORTANT: these are individual courses for (virtual) exchange students, open also to lecturers of HEIs. The students will receive official transcripts, but not a degree.

Courses

AREA	CODE	NAME	LECTURERS	
Soil Science	SOL 735	Geosystems, Landscapes and Land Uses in Brazil and West Africa: Convergences and Scenarios	Carlos Schaefer	carlos.schaefer@ufv.br
Biology & Ecology	BIO 610	Cell Biology	Carolina Gonçalves Santos	cgsbio@ufv.br
	BIO 796*	Ecohealth: Population Biology of parasites and hosts applied to Ecology of Diseases	Sérvio Pontes Ribeiro	serviopr@gmail.com
Biochemistry	BQI 700	Structure and Functions of Macromolecules	Gabriela Maitan-Alfenas	gabriela.maitan@ufv.br
			Marisa Alves Nogueira Diaz	marisanogueira@ufv.br
			Andréa Ribon	abribon@ufv.br
			Tiago Mendes	tiagoaomendes@ufv.br
Animal Science	ZOO 765	Molecular Biology Applied to Animal Production	Simone Facioni	sfacioni@ufv.br
Computer Science	INF 600	Research Techniques in Computer Science	Alcione de Oliveira	alcione@ufv.br
Food Science & Technology	TAL 706	Food Carbohydrates and Bioactive Compounds	Frederico Barros	fredbarros@ufv.br
Plant Science	FIT 679	Biotechnology Applied to Plant Breeding	Guilherme Pereira	g.pereira@ufv.br
			Murilo Zerbini	zerbini@ufv.br
Plant Pathology	FIP 650	Plant Disease management	Franklin Machado	franklin.machado@ufv.br
	FIP 704	Methods in Molecular Plant Pathology	Murilo Zerbini	zerbini@ufv.br
Plant Physiology	CBF 770	Plant Stress Physiology	Eduardo Gusmão Pereira	egpereira@ufv.br
Economics	ERU 605	Macroeconomics Theory I	Graziella de Castro	graziella.magalhaes@ufv.br
Entomology	ENT 760	Insect Behaviour	Simon Elliot	selliot@ufv.br
Agricultural Engineering	ENG 795	Ozone and its applications	Ernandes Rodrigues de Alencar	ernandes.alencar@ufv.br

* = BIO 796 will be a condensed course, from August 4 to August 27 (check the timetable on Wednesday and Friday)

Timetable: UTC -03:00

	Monday	Tuesday	Wednesday	Thursday	Friday
8:00h				FIT 679	BIO 796
9:00h	ZOO 765	FIP 650		FIT 679	FIP 650
					BIO 796
10:00h	BIO 610	FIP 650	BIO 610	TAL 706	FIP 650
	SOL735		INF 600	FIT 679	CBF 770
	ZOO 765				
					BIO 796
11:00h	BIO 610		BIO 610	TAL 706	CBF 770
	SOL735		INF 600	FIT 679	FIP 704
	ZOO 765				BIO 796
12:00h					FIP 704
13:00h					
14:00h	BQI 700	ERU 605	BQI 700	ERU 605	ENT 760
	SOL735		ZOO 765		BIO 796
			ENT 760		
			BIO 796		

15:00h	BQI 700	ERU 605	BQI 700	ERU 605	ENT 760
	SOL735		ZOO 765		BIO 796
			ENT 760		
			BIO 796		
16:00h			BIO 796		BIO 796
17:00h			BIO 796		BIO 796

TOPICS

SOL735 - Geosystems, Landscapes and Land Uses in Brazil and West Africa: Convergences and Scenarios (45h)

1. The physical environment of Brazil and West Africa - the Gondwana connection (10h).
2. Geomorphology, soils and landscapes in West Africa (4h).
3. Geomorphology, soils and landscapes in Brazil (6h).
4. The Human and social dimensions of West African and Brazilian societies (10 h).
5. Agricultural traditions in both margins of the Atlantic: the globalization of Tropical Plants (10 h).
6. Present and Future of Brazil and Africa interplays (5 h).

BIO 610 – Cell Biology (60h)

1. The main characteristics of the eukaryotic cells.
2. Structure and transport across membranes.
3. Structure and energy conversion in mitochondrion and chloroplast.
4. Compartments and protein sorting.
5. Nucleus.
6. Cytoskeleton.
7. Cell cycle.

BIO 796 – Ecohealth: Population Biology of parasites and hosts applied to Ecology of Diseases (45h)

1. Advances of Ecology of Diseases and Ecohealth: concepts and state
2. of art. Natural selection and evolution of genetic variability in response to diseases.
3. Regulatory factors of population growth: natural enemies and control of pests and vectors.
4. The dynamics of populations in parasite-host / predator-prey models.
5. Pandemics and Emergence of Infectious Diseases in a changing global environment.
6. Microbiota on insect hosts and invasive pathogens on mutualistic microbiotas.

BQI 700 – Structure and Functions of Macromolecules (60h)

Structure, functions, properties and methods of analysis of carbohydrates, lipids and membranes, nucleic acids, proteins and enzymes, including extraction techniques, chromatographic analysis and genetic engineering.

ZOO 765 – Molecular Biology Applied to Animal Production (75h)

1. Introduction to Molecular Biology.
2. Structure and function of nucleic acids.
3. DNA replication, transcription and translation.
4. “Omics” in animal production.
5. Use of biomarkers in animal production.
6. Genomic markers in animal production.
7. Phenotypic analysis of gene expression in animal production.
8. Non-Mendelian pattern of generation in animal production.
9. Genotype x environment interaction.
10. Genetically modified animals

INF 600 – Research Techniques in Computer Science (30h)

1. Notions of scientific methodology.
2. Computing research.
3. Computing research project.
4. Conducting computer research.
5. Presentation of research results.
6. Financing source.
7. Ethics in computer research.

TAL 706 - Food Carbohydrates and Bioactive Compounds (30h)

1. Carbohydrate reactions.
2. Starch.
3. Carbohydrate nutrition and dietary fiber.
4. Bioactive compounds.
5. The protective effect of foods containing bioactive compounds on chronic noncommunicable diseases.
6. Seminar presentations.

FIP 650 - Plant Disease Management (90h)

1. Concepts and definitions of plant disease control;
2. Epidemiological aspects of plant disease control;
3. Principles of plant disease control (exclusion, eradication, therapy, immunization, protection, avoidance);
4. Control methods (cultural, physical, resistance, biological and chemical);
5. Epidemiological implications of control measures;
6. Importance of decision making in plant disease management;
7. Integrated plant disease management.

FIP704 - Methods in Molecular Plant Pathology (60h)

Program:

1. Structure and function of macromolecules.
2. Nucleic acid replication and protein synthesis.
3. Recombinant DNA techniques.
4. Basics of bioinformatics.
5. Diagnosis of phytopathogens using molecular techniques.
6. Molecular markers.
7. Plant transformation for resistance to phytopathogens.
8. Genomics of phytopathogens.

ERU 605 - Macroeconomic Theory I (60h)

1. *State-of-the-Art* modern macroeconomics
2. Dynamic methods in macroeconomics
3. Exogenous growth models
4. Endogenous growth models
5. Stochastic growth models

CBF 770 – Plant Stress Physiology (45h)

1. Plant stress responses.
2. Metabolic adjustments and antioxidant metabolism.
3. Light stress and thermal stress.
4. Water stress and salinity.
5. Nutritional stress and resistance to trace metals.
6. Environmental pollution stress.

FIT 679 – Biotechnology Applied to Plant Breeding (60h)

1. Introduction to biotechnology.
2. PCR-based molecular markers. Microsatellite markers.
3. Sequencing-based molecular markers.
4. Molecular markers applied to assisted backcrossing, diversity estimation, and heterotic pool formation.
5. Marker-assisted selection.
6. Identification of genes of interest.
7. Transgenics.
8. Doubled haploids.
9. Available tools for the modern breeder.

ENT 760 – Insect Behaviour (45h)

1. Introduction to Insect Behaviour
2. Insects, Animals or Organisms?
3. Evolution.
4. Proximal and Distal Explanations.
5. Hypotheses and Assumptions.
6. Experimentation.
7. Control of Behaviour
8. Organization of behaviours.
9. Foraging and Optimization
10. Learning
11. Victim-Enemy Behaviour
12. Nutritional Ecology
13. Senory Organs and Nervous System
14. Communication and signals

15. Accoustic communication
16. Semiochemicals
17. Reproduction
18. Dispersal
19. Haemotophagy in Insects
20. Life in Groups

ENG 795 – Ozone and its applications (30h)

1. Origin, nature, and generation.
2. Gaseous and aqueous ozone.
3. Ozone in the control of microorganisms and insects.
4. Ozone in the degradation of mycotoxins and pesticides.
5. Applications of ozone in food processing.
6. Health and safety aspects of ozone processing.
7. Ozone regulation.