

Online Courses in English at UFV

Term: 2022-2

When will classes take place?

- September 5 - December 17, 2022

What are the costs involved?

- The courses are **free of charge** for the selected candidates

Who is eligible?

- **Academic mobility**: undergraduate, Master's or Ph.D. students currently enrolled in any Higher Education Institution.
- **Diploma holders***: individuals holding a bachelor's degree granted by any Higher Education Institution.

***Note: if you are already selected for a master/doctorate course, but classes have not yet started, please register as a diploma holder.**

Steps for the application process:

1. Before **July 29**, fill up the application form, uploading the required documentation:
 - a. For **academic mobility** students: <https://forms.gle/VVqUepnRiS9QJGtH6>
 - b. For **diploma holders**: <https://forms.gle/AVsQyUyHZ9XrPxKZ6>
2. The coordinator of each UFV requested course will evaluate your application, based on your curriculum vitae and transcript of records.
3. Until **August 15**, the UFV international office will inform you the list of courses you are approved to register for.
4. Classes will start on **September 5**, 2022.
5. **Required documents** for all candidates (to be attached to the registration form):
 - a) Copy of the Diploma and Academic Transcript of the Undergraduation;
 - b) Copy of the Master's Diploma and Academic Transcript (if you already have it);
 - c) Copy of the Doctoral Diploma and Academic Transcript (if you already have one);
 - d) Copy of birth or marriage certificate (if you do not such a document, **fill in the document below and stamp it at the Notary Office**):
<https://www.dri.ufv.br/english/wp-content/uploads/Name-declaration.pdf>
 - e) **Nomilnation Letter - mandatory for Academic Mobility candidates**. Use the template:
https://www.dri.ufv.br/english/wp-content/uploads/Nomination-letter-template-2022_2.pdf
 - f) Copy of National Identity Card (passport preferred for foreign applicants);
 - g) Copy of CPF (for Brazilians only);
 - h) Copy of Voter Registration Card (for Brazilians only);
 - i) Copy of Military Document (for Brazilian men only).

IMPORTANT :

- **Good internet connection** is mandatory to follow the activities!
- For academic mobility, one of the required documents is an official nomination from the home institution. **“Self-nominated” candidates are not accepted for academic mobility.**
- **The program does not provide a degree** - students who conclude courses will receive only an official transcript of records from UFV.

Courses

CODE	NAME	LECTURERS	
ARQ 796 ¹	<u>Special Problems - III: CFD Simulation with OpenFOAM</u>	Joyce Carlo (coordinator) Nayara Marques Sakiyama (UFVJM)	joycecarlo@ufv.br
AGF 645 (T1) ²	<u>Design and Analysis of Experiments</u>	Lessando Gontijo	lessandomg@ufv.br
BIO 610 (T2)	<u>Cell Biology</u>	Carolina Gonçalves Santos	cgsbio@ufv.br
ENG 790 (T1) ³	<u>SPECIAL TOPICS I : Compost barn: an alternative housing system for dairy cows</u>	Ilda Ferreira Tinoco (coordinator) Matteo Barbari Lorenzo Leso Rafaela Andrade	iftinoco@ufv.br
ENG 794 (T1) ³	<u>SPECIAL PROBLEMS I: Life cycle assessment (lca) as a sustainable methodology applied to the egg production system</u>	Richard Stephen Gates (coordinator) Nathan Pelletier	rsgates@iastate.edu
ENT 602 ⁴	<u>Scientific Writing</u>	Simon Luke Elliot	selliot@ufv.br
ENT 669 (T1) ⁵	<u>Insecticide (Eco)Toxicology</u>	Raul Narciso C. Guedes	guedes@ufv.br
FIP 602	<u>Plant Disease Epidemiology</u>	Emerson Medeiros Del Ponte	delponte@ufv.br
FIT 679 (T2)	<u>Biotechnology Applied to Plant Breeding</u>	Guilherme da Silva Pereira	g.pereira@ufv.br
GEO 791 (T1)	<u>Paleopedology</u>	José João Lelis Leal de Souza	jjlelis@ufv.br

SOL 792 (T1)	<u>Soil Classification Systems</u>	José João Leis Leal de Souza	jjlelis@ufv.br
TAL 706 (T1)	<u>Food Carbohydrates and Bioactive Compounds</u>	Frederico Barros	fredbarros@ufv.br
VET 750 ⁶	<u>Foodborne pathogens and diseases</u>	Luís Augusto Nero	nero@ufv.br
ZOO 792 7	<u>Animal Breeding and Genetics</u>	Simone Facione Guimarães (coordinator) Renata Veroneze Daniele Marques	sfacioni@ufv.br

Timetable: UTC -03:00

	Monday	Tuesday	Wednesday	Thursday	Friday
10:00h	BIO 610		BIO 610	TAL 706	FIP 602
	FIT 679	FIT 679	GEO 791		
11:00h	BIO 610		BIO 610	TAL 706	FIP 602
	FIT 679	FIT 679	GEO 791		
12:00h					
13:00h					
14:00h	ENT 602		ENT 602		
	SOL 792		SOL 792		
15:00h	ENT 602		ENT 602		
	SOL 792		SOL 792		
16:00h	ENT 602		ENT 602		
17:00h	ENT 602		ENT 602		

OBS:

1. For **ARQ 796** the timetable will be defined soon. Classes will be Monday or Wednesday morning.
2. For **AGF 645** the timetable will be defined later by the lecturer after discussing with the students enrolled.
3. For **ENG 790** and **ENG 794** the timetable will be defined later. These are condensed courses whose classes will start only in October 2022 (the precise starting date will be defined in July). Weekly classes: 2 days x 4 hours or 3 days x 3 hours. Remaining 6-7 hours for practical exercises.

4. **ENT 602** will have 4 hours in average weekly. The timetable is registering 8 hours because some weeks may have more activities than others.
5. For **ENT 669** the timetable will be defined later. Weekly classes: 4 days x 50 min.
6. For **ZOO 792** the timetable will be defined later; it will be 3 hours a week for 15 weeks. This course is offered under an initiative of cooperation with the National Animal Genetic Resources Centre and Data Bank (NAGRC&DB, Uganda), so candidates of that institution have priority in the selection process.
7. For **VET 750** the timetable will be defined later

All the courses (except ENG790 and ENG794) will take place from **September 5 to December 17, 2022**.

TOPICS

CODE / NAME	TOPICS
ARQ 796 Special Problems – III: CFD Simulation with OpenFOAM	<ol style="list-style-type: none"> 1. Introduction to CFD <ol style="list-style-type: none"> 1.1. Fluid Mechanics Equations 1.2. Fundamentals of Finite Volumes 2. OpenFOAM <ol style="list-style-type: none"> 2.1. Usage of OpenFOAM 2.2. Mesh basics 2.3. Boundary Conditions 2.4. Solution Algorithms 3. Ventilation <ol style="list-style-type: none"> 3.1. Domain types 3.2. Turbulence models 3.3. Calculation Methods 4. Interoperability with Rhino/Grasshopper. <ol style="list-style-type: none"> 4.1. Ladybug Tools 4.2. Butterfly 5. Simulation Setup <ol style="list-style-type: none"> 5.1. Writing the files with Butterfly 5.2. Using OpenFOAM 6. Parallelization <ol style="list-style-type: none"> 6.1. Parallel programming concepts 6.2. Domain decomposition for parallel simulation 6.3. Using OpenFOAM in parallel 7. Post-processing <ol style="list-style-type: none"> 7.1. Using paraView 7.2. Performance metrics and Object functions
AGF 645 Design and Analysis of Experiments	<ol style="list-style-type: none"> 1. Basic concepts in statistics. 2. Basic principles in experimentation. 3. Experimental designs. 4. Parametric and non-parametric analyses.
BIO 610 Cell Biology	<ol style="list-style-type: none"> 1. General cell features. 2. Cell membrane. 3. Cytoskeleton. 4. Mitochondria. 5. Peroxisome. 6. Chloroplast. 7. Intracellular compartments. 8. Intracellular traffic. 9. Nucleus. 10. Cell cycle.
ENG 794 SPECIAL PROBLEMS I – life cycle assessment (lca) as a sustainable methodology applied to the egg production system	<ol style="list-style-type: none"> 1. Life Cycle Thinking (LCT) and its importance in the context of sustainability management. Life Cycle Assessment (LCA) definition. 2. History and LCA iscovery. 3. LCA methods and how to apply them to egg production. 4. Showcase of some egg industry model development work. 5. Assessment of green technologies, and development of the NEST platform. 6. Net Zero research program.
ENG 790	<ol style="list-style-type: none"> 1. Design and management of modern compost barns.

<p>SPECIAL TOPICS I – Compost barn: an alternative housing system for dairy cows</p>	<ol style="list-style-type: none"> 2. Up to date research results concerning this housing system and its effects on cow welfare and productivity. 3. Other alternative housing systems for dairy cows. 4. Practical exercises concerning the design principles, environmental control solutions, management practices and the choice of bedding materials for compost barns under different geographic and climatic conditions.
<p>ENT 602 Scientific Writing</p>	<ol style="list-style-type: none"> 1. What is a scientific paper? 2. Structure of a paper. 3. Ethics in the publication of papers. 4. Importance of Reading. 5. Literature review and citation. 6. Preparation of the manuscript. 7. Critical iscover. 8. Which iscov to choose. 9. How to submit. Peer review. 10. How to structure phrases in a paper. 11. What to avoid and what to embrace. 12. Principles of clear and effective writing. 13. Writing with strong and active verbs. 14. How to construct an effective paragraph (organized and concise). 15. Use of varied resources in writing. 16. Review of writing. 17. Title and Abstract: equilibrium and elegance. 18. Introduction: essential and dispensable parts. 19. Material and methods: the importance of precision and detail. 20. Results: simple, direct and precise writing. 21. Discussion: arguments, limitations and implications of the study.
<p>ENT 669 Insecticide (Eco)Toxicology</p>	<ol style="list-style-type: none"> 1. Introduction: Subject importance. 2. Toxicology: Scope & definitions. 3. Toxicological assessment: Dose-response, hormesis, tests and parameters. 4. Insecticide classification and characterization. Insecticides in the environment: Entry routes, iscover, transformation. 5. Insecticides in organisms: Penetration and storage, iscover (plants), transformation, modes of action, interactive effects, biomarkers and biomonitoring. 6. Insecticides in populations: population dynamics & insecticide resistance. 7. Insecticides in communities: changes, measurement and interpretation of ecological impacts. 8. Ecological risk assessment.
<p>FIP 602 Plant Disease epidemiology</p>	<ol style="list-style-type: none"> 1. History and concepts in Botanical Epidemiology. 2. Plant disease assessment and quantification. 3. Temporal dynamics and analysis of epidemics. 4. Pathogen dispersal, disease gradients and patterns. 9. Yield loss assessment. Risk assessment and disease forecasting.
<p>FIT 679 Biotechnology Applied to Plant Breeding</p>	<ol style="list-style-type: none"> 1. Introduction to biotechnology; 2. Identification of molecular markers; 3. Application of molecular markers; 4. Gene iscovery and validation; 5. Transgene and gene editing; 6. Molecular breeding
<p>GEO 791 Paleopedology</p>	<ol style="list-style-type: none"> 1. Soil formation factors. 2. Soil properties. 3. Mineralogy of soils. 4. Micromorphology of soils. 5. Dating methods for geoscientists. 6. Soil genesis in tropical areas.
<p>SOL 792 Soil Classification Systems</p>	<ol style="list-style-type: none"> 1. Soil description in the field. 2. Auxiliary analyzes. 3. Diagnostic horizons and properties of World reference Base for soil Resources and Soil Taxonomy. 4. Soil classification.
<p>TAL 706 Food Carbohydrates and Bioactive Compounds</p>	<ol style="list-style-type: none"> 1. Monosaccharides. 2. Carbohydrate reactions. 3. Starch. 4. Carbohydrate nutrition and dietary fiber.

5. Bioactive compounds.
6. The protective effect of foods containing bioactive compounds on chronic noncommunicable diseases.

VET 750

Foodborne pathogens and diseases

1. Epidemiology of foodborne diseases.
2. Characterization of foodborne pathogens and diseases.
3. Detection and enumeration of foodborne pathogens.
4. Impacts of foodborne diseases.
5. Prevention of foodborne diseases.
6. Trends in food safety.

ZOO 792

Animal Breeding and genetics

1. Definition of animal breeding
2. How can animal breeding help in animal production?
3. Genetic parameters in animal breeding
4. Correlation, inbreeding and crosses
5. Genetic and Genomic Evaluation
6. Genomics applied to animal breeding
7. Breeding and genomics applied to the main livestock species: Cattle (beef and milk), pigs, poultry, horses.