Free Courses in English/Spanish at UFV

Term: 2025-1

When will classes take place?

- **March 10 to July 11, 2025**

Who is eligible?

- **Academic mobility:** undergraduate, Master's, or Ph.D. students currently enrolled in any Higher Education Institution - **Brazilian or foreign universities**. (**if you are already selected for an undergraduate/master/doctorate course, but classes have not started yet, please register as a degree holder.**).
- **Degree holders**: individuals holding a bachelor's degree granted by any Higher Education Institution. This category must be the one chosen for candidates who are not currently enrolled in any Higher Education Institution.

If you have any doubts about which category to apply for, write to dri@ufv.br.

- For both categories the courses are free of charge.

Steps for the application process:

1. Between 13 a 28/01/2025 – fill out the application form and upload the required documentation:
   a. For **academic mobility**: https://forms.gle/H17atoX9graWErp17
   b. For **degree holders**: https://forms.gle/LZPPg3gBqHSzHbCr7
2. The coordinator of each course at UFV will evaluate your application, based on your curriculum vitae and transcript of records.
3. Those who have their registration approved, will receive an email message with the access information to the UFV systems to participate in the courses.
4. Classes will start on **March 10**, 2025 (some courses may start later).
5. **Required documents** for all candidates (to be attached to the registration form ***in this sequence***):

1. Copy of National Identity Card (passport preferred for foreign applicants);
2. Copy of birth or marriage certificate (if you do not have this document, **fill the Declaration of personal Information document and stamp it at the Notary Office**) - the registration at UFV, if you are selected, will use exactly the names indicated in your official certificate/declaration;
3. Nomination letter - **mandatory** for Academic Mobility candidates;
4. Copy of the Undergraduate/Bachelor Certificate (if you have it);
5. Copy of the Undergraduate/Bachelor Academic Transcript (if you have it);
6. Copy of the Master's Certificate (if you have a Master's degree);
7. Copy of the Master's Academic Transcript (if you have a Master's degree);
8. Copy of the Doctoral Certificate (if you have a Doctoral degree);
9. Copy of the Doctoral Academic Transcript (if you have a Doctoral degree);
10. Copy of CPF (for Brazilians only or if you already have it);
11. Copy of Voter Registration Card (for Brazilians only);
12. Copy of Military Document (for Brazilian men only);
13. Face photo - recent photo, 3x4 format, with light background.

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 confer a degree**. Students who complete courses will receive either an official transcript of records or a certificate from UFV, depending on their eligibility.

1. Official Transcript of Records

An official transcript for completed courses may allow the credits to be reused later in Master's or PhD programs at UFV. Students in the following categories are eligible to receive an official transcript of records:

1.1) **Exchange Students:** Students from universities with an exchange agreement signed with UFV.
1.2) **Program Participants:** Students participating in programs and associations registered at UFV, such as PILA (https://www.programapila.lat/) or UNITA (https://univ-unita.eu/Sites/).
1.3) **Sponsored Students:** Students receiving financial support from TETFund and participating in the FARA-FAUBAI program.
1.4) **Documented Students:** Students who provide notarized documentation in Brazil.

2. Certificate of Extension Course

All other students will receive a certificate for completing an "extension course." This certificate does not automatically allow for the equivalence of credits toward Master's or PhD programs at UFV. However, equivalence may be requested later if the student is admitted to a Graduate program at UFV. This process may require additional activities or exams.

TAKE CARE TO SELECT ONLY COURSES RELATED TO YOUR AREA OF EXPERTISE.

Remote Courses:

CODE	NAME	LECTURERS	E-MAIL
ARQ 627	Energy Efficiency in the Built Environment	Joyce Correna Carlo	joycecarlo@ufv.br
BAN 664	Phenotypic Plasticity In The Evolutionary	Amanda Ferreira e Cunha	amanda.cunha@ufv.br
BAN 793	Use Of Statistical Software In Zoological Data Analysis (**Taught in Spanish**)	Luis Viteri Jumbo	luis.jumbo@ufv.br; luis.viteri@mail.uft.edu.br
BAN 773	Social Insects	Maria Augusta Lima Siqueira	maugusta@ufv.br
BVE 612	Plant Anatomy	Edgard Augusto De Toledo Picoli	epicoli@ufv.br
BQI 762	Structural Bioinformatics	Pedro Reis	pedro.reis@ufv.br
CBF 770	Plant Stress Physiology	Eduardo Gusmão Pereira	egpereira@ufv.br
CIV 642	Biological Wastewater Treatment Processes	Ann H. Mounteer	ann@ufv.br
CIV 660	Science And Technology Of Building Materials	José Maria Franco De Carvalho	josemaria.carvalho@ufv.br
ELT 651	Image Processing And Applications	Alexandre Brandão	alexandre.brandao@ufv.br
ENT 662	Insect Physiology	Eugênio E. Oliveira	eugenio@ufv.br
FIT 632	Plant Cell And Tissue Culture	Sergio Y. Motoike and Edgard Picoli	motoike@ufv.br
FIT 643	Coffee Mineral Nutrition And Fertilization (**Taught in Spanish**)	Herminia E. Prieto Martinez	herminia@ufv.br
FIT 664	Homeopathy In Agriculture	Vicente Wagner Dias Casali	vwcasali@ufv.br
FIT 666	Epigenetics And Plants	Vicente Wagner Dias Casali	vwcasali@ufv.br
FIT 677	Breeding Medicinal And Aromatical Plants	Vicente Wagner Dias Casali	vwcasali@ufv.br
FIT 678	Genetic Data Analysis For Plant Breeding	Guilherme Da Silva Pereira	g.pereira@ufv.br
LET 635	Gender And Cultural Studies	Iara Christina Silva Barroca	iarabarroca@ufv.br
NUT 642	Nutritional Epidemiology	Juliana Farias de Novaes	jnovaes@ufv.br
SOL 649	Soil Management in the Tropics	Teogenes Senna de Oliveira, Igor de Assis Silva, Raphael Bragança	igor.assis@ufv.br; raphael@ufv.br

		Fernandes and Richard Willian Bell	
ZOO 792	Special Topics In Animal Reproduction	Yamê Fabres Robaina Sancler Da Silva	yame@ufv.br

Remote courses Timetable: UTC -03:00

REMOTE COURSES 2025-1					
	Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
8:00h	FIT 632 SOL 649	BQI 792	CIV 660 CIV 642	ZOO 792	SOL 649
9:00h	FIT 632 ELT 651 SOL 649	BQI 762	CIV 660 CIV 642 BAN 664	ZOO 792	SOL 649 BAN 664
10:00h	ELT 651	BQI 762 FIT 678 FIT 643	CIV 660 FIT 678 CIV 642 BAN 664	ZOO 792	SOL 649 CBF 770 BAN 664
11:00h	ELT 651	BQI 762 FIT 678 FIT 643	CIV 660 FIT 678 CIV 642 BAN 664	ZOO 792	CBF 770 BAN 664
12:00h					
13:00h					
14:00h		BAN 773 ENT 662	ARQ 627 FIT 632	BIO 747 NUT 624	LET 635 ENT 662 BAN 773
15:00h		BAN 773 ENT 662	ARQ 627 FIT 632	BIO 747 NUT 624	LET 635 ENT 662 BAN 773
16:00h			ARQ 627	BIO 747 NUT 624	LET 635
17:00h			ARQ 627	BIO 747 NUT 624	LET 635

18:00h	BAN 793	BAN 793		BAN 793	
19:00h	BAN 793	BAN 793		BAN 793	

OBS: Courses that are not included in the timetable are because they will be defined later by the Professor after discussion with registered students.

In-person courses : Regarding registration in this modality, follow the guidelines for In-person mobility on the page:
https://dri.ufv.br/en/information-for-foreign-students-3/

CODE	NAME	LECTURERS	E-MAIL
AGF 613	Soil Organic Matter	Dener Márcio da Silva Oliveira	dener.oliveira@ufv.br
BIO 250	Cellular Immunology (undergraduate level)	Leandro Licursi de Oliveira	leandro.licursi@ufv.br
BAN 773	Social Insects	Maria Augusta Lima Siqueira	maugusta@ufv.br
BIO 650	Cellular Immunology (graduate level)	Leandro Licursi de Oliveira	leandro.licursi@ufv.br
BIO 747	Quantitative Genetics II	Kaio Olimpio das Graças Dias	kaio.o.dias@ufv.br
BVE 630	Methods in Taxonomy and Botanical Nomenclature	Pedro Bond Schwartsburd	pedro.schw@ufv.br
CBF 641	Conservation and Management of Natural Ecosystems	Leonardo Esteves Lopes	leonardolopes@ufv.br
ENF 316	Special Topics III - Forest Data Analysis (undergraduate level)	Diogo Nepomuceno Cosenza	diogo.cosenza@ufv.br
ENF 792	Special Topics III - Forest Data Analysis (graduate level)	Diogo Nepomuceno Cosenza	diogo.cosenza@ufv.br
FIP 300	Plant Pathology I	Eduardo S. G. Mizubuti	mizubuti@ufv.br
FIT 682	Landscape Architecture and People-Environment Relations	Affonso H. L. Zuin	zuin@ufv.br
INF 100	Introduction to Programming	Vladimir Oliveira Di Iorio	vladimir@ufv.br
LET 790	Emotional literacy in language teaching and learning	Ana Maria Ferreira Barcelos	anamfb@ufv.br
NUT 642	Nutritional Epidemiology	Juliana Farias de Novaes	jnovaes@ufv.br
TAL 629	Food Packaging: Focus on the science of polymer material	Taíla Veloso de Oliveira	taila.oliveira@ufv.br
ZOO 660	Animal Breeding I	Renata Veroneze	renata.veroneze@ufv.br

In-person courses Timetable: UTC -03:00

IN-PERSON COURSES 2025-1					
	Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
8:00h	LET 790	BIO 250 NUT 642 BVE 630 BIO 650	AGF 613	ENF 792 ENF 316	
9:00h	LET 790	BIO 250 NUT 642 BVE 630 BIO 650	AGF 613	ENF 792 ENF 316	
10:00h	LET 790	BIO 250 NUT 642 BVE 630 BIO 650	AGF 613		
11:00h		BIO 250 NUT 642 BVE 630 BIO 650	AGF 613		
12:00h					
13:00h					
14:00h	ENF 792 ENF 316 FIP 300			BIO 747 NUT 624	
15:00h	ENF 792 ENF 316 FIP 300			BIO 747 NUT 624	
16:00h				BIO 747 NUT 624	
17:00h				BIO 747 NUT 624	

OBS: Courses that are not included in the timetable are because they will be defined later by the Professor after discussion with registered students; LET 790 - classes will start in April; BAN 773 will only be offered if there are a minimum of 5 students.

TOPICS

CODE / NAME	TOPICS
AGF 613 Soil Organic Matter	Soil organic matter (SOM) dynamics, SOM: quantification and composition, greenhouse gases emissions in agriculture and mitigation strategies.
ARQ 627 Energy Efficiency In The Built Environment	Introduction. State of the art in energy efficiency. National and international regulations and standards. Energy efficiency variables and external factors. Energy audits and commissioning. Energy efficiency assessment methods. Energy efficiency in the design process.
BAN 664 Phenotypic Plasticity In The Evolutionary	This course aims to bring students close to recent advances on concepts in the evolutionary theory, through the comprehension of the sources of variation in a historical perspective. In this context, the role of phenotypic plasticity in micro and macroevolutionary processes will be a central theme, although other aspects relevant to phenotypic evolution will also be considered. This course is structured in interactive classes, based on the reading and discussion of scientific literature. By the end of the course, it is expected that the participants are able to relate their research project to the discussions, considering their research in a wider context. Main Topics: 1. The origin of variations and adaptive evolution: historical perspective 2. Phenotypic plasticity and microevolution 3. Phenotypic plasticity and macroevolution
BAN 773 Social Insects	Solitary insects, social insects and degrees of sociality; Presocial and eusocial insects; Communication and foraging in social insects; Defense strategies in social insects; Caste determination; Biology and ecology of social wasps; Biology and ecology of social bees; Biology and ecology of ants; Biology and ecology of termites; Evolution of sociality.
BAN 793 Use Of Statistical Software In Zoological Data Analysis	Uses of software in statistical analysis. Interpretation and writing of statistical results for publications with a high impact factor. Illustration of the results for publication in international journals with a high impact factor. Uses of software in statistical analysis. Interpretation and writing of statistical results for publications with a high impact factor. Illustration of the results for publication in international journals with a high impact factor.

BIO 250 **Cellular Immunology**	Cells and tissues of the immune system; Basic protocols in immunology; The MHC; The T cell; Cellular immune response; Mechanisms of cellular immunity; Immunology and disease; Highlight in immunology.
BIO 747 **Quantitative Genetics II**	Molecular markers Resemblance between relatives Linear mixed model Single-environment trial analysis Multi-environment trial analysis Genomic Selection
BIO 650 **Cellular Immunology**	Cells and tissues of the immune system Basic protocols in immunology The MHC The T cell Cellular immune response Mechanisms of cellular immunity Immunology and disease Highlight in immunology
BQI 762 **Structural Bioinformatics**	Structure of biomolecules. Structural databases. Visualization of biomolecular structures. Molecular modeling. Protein-ligand docking. Molecular dynamics simulations. Three-dimensional evolution. Structural bioinformatics in biotechnology.
BVE 612 **Plant Anatomy**	Light microscopy and electron microscopy Plant cells and tissues Organization of the plant body
BVE 630 **Methods In Taxonomy And Botanical Nomenclature**	Taxonomic Methodology Botanical Collections Botanical Nomenclature History of Botany in Brazil
CBF 641 **Conservation And Management Of Natural Ecosystems**	Introduction to and history of Conservation Biology; Ecosystem services and its valuing; Habitat disturbance, loss, and fragmentation; Fire and biodiversity; Overharvesting of natural resources; Invasive species and its impacts upon the biological communities; Global climate changes; Extinctions and how to prevent them; Conservation and management of ecosystems;

	Local people and their importance for conservation; Conservation and management: from theory to practice.
CBF 770 **Plant Stress Physiology**	Plant stress responses. Metabolic adjustments and antioxidant metabolism. Light stress and thermal stress. Water stress and salinity. Nutritional stress and resistance to trace metals. Environmental pollution stress.
CIV 642 **Biological Wastewater Treatment Processes**	Wastewater characterization and applicability of biological processes. Classification of biochemical operations, microorganisms and biological reactors. Microbial ecology and bioenergetics of biological treatment processes. Biological treatment modeling: process kinetics and reactor hydraulics. Treatability studies. Conventional treatment processes: anaerobic reactors, stabilization ponds, activated sludge and variants, biological filters. Physical, chemical and microbiological monitoring of biological treatment.
CIV 660 **Science And Technology Of Building Materials**	Introduction to Science and Technology of Building Materials; Bonding. The Architecture of Solids. Development of Microstructure. Surface Properties. Response of Materials to Stress. Failure and Fracture. Rheology of Fluids and Solids. Particulate Composites. Aggregates. Portland Cement-based Composites. Organic Binders-Based Composites. Advanced Characterization Techniques.
ELT 651 **Image Processing And Applications**	Fundamentals of Digital Images. Image Enhancement Techniques. Image segmentation. Color Image Processing. Morphological Processing. Applications.
ENF 316 **Special Topics III - Forest Data Analysis (undergraduate level)**	Através dessa disciplina o estudante será capaz de: • Utilizar planilhas eletrônicas para tabular e manipular dados florestais • Construir algoritmos para analisar dados florestais de maneira automática e reprodutível • Realizar análise exploratória de dados para extrair informações facilmente interpretáveis • Diagnosticar e solucionar problemas de análise de dados florestais

ENF 792 **Special Topics III - Forest Data Analysis (graduate level)**	Através dessa disciplina o estudante será capaz de: • Utilizar planilhas eletrônicas para tabular e manipular dados florestais • Construir algoritmos para analisar dados florestais de maneira automática e reprodutível • Realizar análise exploratória de dados para extrair informações facilmente interpretáveis • Diagnosticar e solucionar problemas de análise de dados florestais
ENT 662 **Insect Physiology**	01. Size, scale and morphological adaptations 02. Embryonic and post-embryonic development 03. Tegument and Metamorphose (and its hormonal regulation) 04. Diapause and biological rhythms 05. Reproductive system 06. Sensory systems 07. Locomotion (including muscles physiology) and nervous system. 08. Insect flight and migratory movements 09. Insect nutrition and digestive system 10. Hemolymph, circulatory and immunological systems 11. Gas exchange (respiration) and temperature control systems 12. Excretory system
FIP 300 **Plant Pathology I**	Concepts, Importance, and symptomatology of plant diseases. Etiology. Mycology, phytopathogenic fungi, and fungal diseases. Epidemiology. Variability of phytopathogens. Plant-pathogen interaction. General principles and practices for plant disease control. Fungicides.
FIT 632 **Plant Cell And Tissue Culture**	Plant, cell, tissue and organ cultures: definition, history and applications. Organization of a plant tissue culture laboratory. Plant tissue culture media – inorganic components. Plant tissue culture media – organic components. Morphogenesis in plant tissue culture. Applications of plant tissue culture techniques – micropropagation. Clonal variations in plant tissue culture. Applications of plant tissue culture techniques – clonal cleanse and rejuvenation. Applications of plant tissue culture techniques – Embryo rescue and synthetic seeds. Applications of plant tissue culture techniques – conservation of crop genetic resources. Applications of plant tissue culture techniques – plant genetic transformation Applications of plant tissue culture techniques – double haploid technology
FIT 643 **Coffee Mineral Nutrition And Fertilization** (SPANISH)	General aspects of coffee crop. Mineral nutrients and their importance to coffee production. Soil analysis: Sampling and results interpretation. Soil amendment needs to coffee crop. Coffee crop fertilization. Mineral nutrition diagnosis of coffee plant.

	Plant mineral nutrition & coffee quality.
FIT 664 **Homeopathy In Agriculture**	Historic Fundamentals and Applications Homeopatic Pharmacopoeia Agroecosystems and Homeopathy Technological Clinic Repertorization Crop Management Isopathic Solutions Experimental Results
FIT 666 **Epigenetics And Plants**	History and Fundamentals DNA methylation Epigenetic Determinations Histone Variants Epigenetic Systems of Inheritance Epigenetic Markers Variability and Epigenetics Epigenetic Regulation in Plants
FIT 677 **Breeding Medicinal And Aromatical Plants**	Priorities in Breeding Programs Theoretical Reference Pharmaco-Active Natural Products Genetic Resources Reproduction Systems Breeding Methods Studies on Inheritance Experimental Techniques Experiences in Breeding Programs
FIT 678 **Genetic Data Analysis For Plant Breeding**	Introduction to genetic data analysis Molecular markers Mapping populations Linkage map QTL mapping Genetic data analysis of outcrossing species Genome-wide association studies Genomic selection Genetic data analysis of autopolyploid species
FIT 682 **Landscape Architecture And People-Environment Relations**	Landscape Architecture. Theoretical Foundations of Landscape Composition. People-Environment Relations and Environmental Perception. Environmental, Technical, and Technological Aspects in the Planning, Implementation, and Maintenance of Landscape Interventions. Research in Landscape Architecture and Environmental Psychology.

INF 100 **Introduction To Programming**	Elements of an algorithmic language. Basic commands of the language. Algorithms vs. programs. Structured data types. Subprograms. Basic programming techniques.
LET 635 **Gender And Cultural Studies**	Genders and sexualities are powerful organizing forces: they shape identities and institutions, nations and economies, cultures and political systems. Careful study of gender and sexuality thus explains crucial aspects of our everyday lives on both intimate and global scales. Scholarship in Women's, Gender, and Sexuality Studies is interdisciplinary and wide ranging, drawing on history, literature, cultural studies, social sciences, and natural science to study genders and sexualities as they intersect with race, ethnicity, class, nationality, transnational processes, disability, and religion.
LET 790 **Emotional Literacy in Language Teaching And Learning**	Origins and history of emotional literacy. Definition of emotional literacy. Different approaches to emotional literacy. Emotional literacy frameworks. Emotional literacy in practice in language teaching/learning.
NUT 642 **Nutritional Epidemiology**	Sources of error in food consumption evaluation: systematic and aleatory errors Development of the Food Frequency Questionnaire Minimizing errors in measuring dietary intake Implications of total energy intake for epidemiological analysis Evaluation and control of underreporting of energy intake in epidemiological studies Assessment of dietary patterns Use of biochemical markers to assess food intake Critical analysis of computer programs in dietary assessment Critical analysis of the Food Guide for the Brazilian Population Other relevant indicators in nutritional epidemiology studies Overview of Nutritional Epidemiology
SOL 649 **Soil Management in the Tropics**	The Natural environment of the Tropical soil mineralogy; Tropical soil Physics; Soil acidity; Organic Carbon; Soil Fertility; Soil-surface and subsoil constraints in crop lands; Soil management in rice cultivation; Soils and slash-and-burn Agriculture; Soil management in perennials and annuals crops; Soils and livestock-based tropical systems; Soils and tropical tree-based systems; Soil-surface and subsoil constraints; Natural reversion or not- reversion of the degradation; Restoration of drastically altered soils - desertification, salinization, and

	natural and anthropogenic disasters.
TAL 629 **Food Packaging: Polymeric Science Focus"**	Teoric Unity Polymer Science Sustainable Polymers Other conventional Materials Active, Smart and Intelligent Materials
ZOO 660 **Animal Breeding I**	Genetic constitution of a Population Changes of gene frequency Quantitative traits: Average gene effect, breeding value and deviation from dominance Variance components Resemblance between relatives Heritability Inbreeding and crossbreeding Selection response Traits correlation and correlated response Selection methods

ZOO 792
Special Topics In Animal Reproduction

Course Syllabus: ZOO 792 - Special Topics in Animal Reproduction

Course Coordinator:
Professor Yamê Fabres Robaina Sancler da Silva
Email: yame@ufv.br

Objective:
To provide professionals with an in-depth understanding of the reproductive processes in domestic animals, emphasizing physiological and biotechnological advancements in animal reproduction. The course aims to develop skills for practical applications and scientific research in this field.

Course Outline:

1. Reproductive Physiology: From Basic to Advanced Knowledge:
- Reproductive endocrinology in males and females;
- Factors influencing puberty, cyclicity, and seasonality;
- Hormonal regulation and neuroendocrine interactions.

2. Reproductive Biotechniques:
- Collection, processing, and cryopreservation of semen and oocytes;
- Artificial insemination in different species;
- Embryo transfer and associated techniques;
- In vitro embryo production.

3. Emerging Biotechnologies:
- Genetic editing and cloning;
- Use of stem cells and other biomaterials in animal reproduction.

4. Gestation, Parturition, and Neonatology:
- Fertilization in different species: from capacitation to embryonic development;
- Scientific research on gestation, peripartum, postpartum, and puerperium;
- Scientific research applied to neonatology.

5. Applied Scientific Methodology:
- Planning and conducting experiments in animal reproduction;
- Statistical analysis and interpretation of reproductive data;
- Scientific writing and publication of academic articles.

Methodology:
- Lectures, seminars, and group discussions. Students will be encouraged to develop projects integrating theoretical and practical concepts of animal reproduction.

Evaluation Criteria:
Class participation, thematic seminars, practical reports, theoretical exams, and a final project.

	Workload: 4 hours per week 60 hours per semester Credits: 4 Target Audience: Students in Animal Science, Veterinary Medicine, or related fields.