	UNIVERSIDADE FEDERAL DE SANTA CATARINA **CENTRO DE CIÊNCIAS AGRARIAS** **PROGRAMA DE PÓS-GRADUAÇÃO EM RECURSOS GENÉTICOS VEGETAIS**	
	In cooperation with **UNIVERSITY OF COSTA RICA** **FOOD SECURITY CENTER** **UNIVERSITY OF HOHENHEIM, GERMANY**	

COURSE SYLLABUS

I. IDENTIFICATION OF THE COURSE:

CODE	NAME OF THE COURSE: *Special Topics in Plant Genetic Resources*	Mean weekly equivalent of class hours / semester		Total semester class hours
RGV 410039	***Neglected & Underutilized Food Tree Species: Identification, Preservation and Promotion***	Theoretical 2 h	Practical --	30 h

II a. TIMELINE

THEORETICAL CLASSES	PRACTICAL CLASSES
Concentrated 19-22 November 2018 (Mon to Thu) 8:00-10:00h, 10:30-12:00h, 14:00-15:15h, 15:45-17:00h Sala RGV204, Prédio da Fitotecnia (FIT), CCA, Itacorubi	Fri 23 November Field visit to Antônio Carlos (SC) all day Fri

II b. FACULTY RESPONSIBLE FOR THE COURSE

Prof. Dr. Ir. ACHILLE Ephrem Assogbadjo (Faculty of Agronomic Sciences, University of Abomey-Calavi, Benin) and Prof. Dr. ILYAS Siddique (RGV/PGA, UFSC, Brazil)

III. PREREQUISITES: Fluency in English

CODE	NAME OF COURSE(S)
Not applicable	Not applicable

IV. POSTGRADUATE PROGRAMS FOR WHICH THE COURSE IS OFFERED

Open to all programs and individuals interested in environmental, agrarian, biological and related sciences, as well as professors and technical staff

V. COURSE SYNOPSIS

- Characteristics and potential contributions of the Neglected and Underutilized Species (NUS).
- Areas of intervention and new strategies to promote use of NUS.
- Stakeholder involvement.
- Criteria and methodologies for prioritized conservation and improvement.
- Challenges and Strategies in Promoting Conservation and Use.
- Research contributions.
- Value Chain Development (VCD).

VI. AIM

Development of strategies for identifying and selecting potential neglected and underutilized food tree species that can be valorized to improve wellbeing and food security.

VII. COURSE STRUCTURE

Day 1 (Monday, 19th Nov. 2018)

- ✓ **General introduction**
  - What are neglected and underutilized species (NUS)?
  - What are the characteristics of the underutilized species available in the local context? Available skills and knowledge, domestication status, status of the species, functions of the species, adaptive value of the species; etc.
  - How diverse are the NUS?
  - What underutilized species can offer? Importance?
  - What are the inherent strengths and weaknesses of the respective species for a particular objective? i.e. What are the limitations on use of the NUS?
  - What are the main opportunities for and threats to their promotion with regard to the objectives?
  - What are the main intervention areas to build on the strengths and opportunities, and to overcome the weaknesses and threats?
  - What are the new strategies to promote use of the NUS? (Access, conservation and improvement ; Post-harvest handling and processing; Policy and legislation; Awareness creation and lobbying; Marketing; Capacity building; Information generation and management; Inter-sectoral interventions;
  - Which stakeholders/actors need to be involved in the implementation of the strategic elements?

16:30-18:00h in Auditório do Bloco B, FIT, CCA:

Postgraduate Research Seminar in Plant Genetic Resources by Prof. Dr. Achille: "***Plant Genetic Resources: State, Importance, Threats, Conservation and Perspectives***"

Day 2 (Tuesday, 20th Nov. 2018)

- ✓ **New approaches for establishing conservation priorities for most important NUS**
  - Criteria
  - Methodological tools for selecting the priority species
  - Case study of CWR and NTFPs in Benin
- ✓ **Conservation of neglected and underutilized species**
  - How to identify the genetic variation within the species?
    - Morphological approaches
    - Molecular genetic approaches
    - Ecological approaches
    - Ethnobotanical approaches
  - How to identify and select useful traits for the NUS improvement?
  - How to secure the genetic resource base of neglected and underutilized species?
  - Multicriteria approaches for conserving gene and species diversity *in situ* and *ex situ*
  - Case study of baobab species (*Adansonia digitata* L.) in West Africa

Day 3 (Wednesday, 21st Nov. 2018)

- ✓ **Challenges and Strategies in Promoting Conservation and Use of Neglected and Underutilized Crop Species**
  - Trends In The Use Of Plant Genetic Resources
  - Challenges And Opportunities
    - Development of New Markets and New Uses
    - Concern on Environmental Change and Ecosystem Stability
    - Concern Over Food Security and Nutrition
    - Strategy For The Promotion Of Neglected And Underutilized Crop Species
    - Case study of baobab and tamarind in West Africa

- ✓ **Research approaches to enhance the contribution of neglected and underutilized species to food security, and to incomes of the rural poor**
  - Increasing the demand and use of neglected and underutilized species through development and application of appropriate processing technologies, commercialization and marketing strategies;
  - Enhancing the genetic diversity, improving the quality, and increasing the availability of germplasm of the most promising species and varieties;
  - Securing the genetic resource base and expanding the distribution of priority crops through development and application of integrated conservation strategies.

Day 4 (Thursday, 22nd Nov. 2018)

- ✓ **How to Promote Value Chains of Neglected and Underutilized Species for Pro-Poor Growth and Biodiversity Conservation**
  - Underutilized species – striving for social, environmental and economic impacts (definition of value chain ; objective and impact of NUS-VCD; challenges in NUS-VCD)
  - Promoting value chains of neglected and underutilized species – drivers fostering and hampering the utilization of biodiversity
  - Basic concepts for value chain development of neglected and underutilized species (Biodiversity conservation – maintaining NUS; Pro-poor growth – combining VCD and the Sustainable Livelihood Framework; VCD – applying a holistic approach for market access; Sustainable development – building structures and developing capacities for NUS-VCD)
  - Building structures and developing capacities for NUS-VCD principles, methodologies and tools
  - Recommendations for the facilitation of NUS-VCD
- ✓ **Student research seminars** (in-course assessment):
  - 11-12h: Group 1
  - 14-15h: Group 2
  - 15-16h: Group 3
  - 16-17h: Group 4
- ✓ **Course evaluation by participants**

Day 5 (Friday, 23rd Nov. 2018)

- ✓ **Field visit to Antônio Carlos** (SC, some 40km from Florianópolis) to the diverse Rare Fruit Collection of the late Anestor Mezzomo and Rosmari Rudolf Mezzomo.

VIII. TEACHING METHODS / PROGRAM DEVELOPMENT

English as Course Language: The entire course (including assessment) is performed in English. Therefore **fluency in English is required as a condition of enrollment**.
Total duration: 5 days, field visit included (to be confirmed)
Methodology: Lectures; Group discussion; Student research seminars; Field Visit; Practical exercises; Interactive exchanges

IX. ASSESSMENT

Research Seminars presented by groups of students based on reviews of the recent scientific literature:

- Group 1: **Status** of PGR/NUS in Brazil: Biodiversity, threats, conservation issues
- Group 2: **Approaches to prioritize** species for conservation in Brazil/South America
- Group 3: Development of **conservation strategies** of two high-priority species in Brazil
- Group 4: **Promotion** of two promising species from Brazil: What to do and how to proceed?

X. NEW ASSESSMENT

Not applicable

XII. PRACTICAL TIMELINE

Day 5	Field Trip: See VII. COURSE STRUCTURE

XIII. BASIC BIBLIOGRAPHY

Baldermanna, S., Blagojevica, L., Fredea, K., Klopsch, R., Neugart, S., Neumann, A., Ngwene, B., Norkeweita, J., Schroter, D., Schroter, A., Schweigert, J., Wiesner, M., & Schreiner, M. (2016) Are neglected plants the food for the future? ***Critical Reviews in Plant Sciences*** 35:106-119.

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Padulosi, S., Thompson, J., Rudebjer, P. 2013. ***Fighting poverty, hunger and malnutrition with neglected and underutilized species (NUS): Needs, challenges and the way forward***. Bioversity International, Rome.

XIV. COMPLEMENTARY BIBLIOGRAPHY

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