

Federal University of Pará – Pará State - Brazil
Postgraduate Program in Food Science and Technology
Clean Technologies in Food Processing
2024

Subject to be offered remotely, weekly during an academic semester
(45 h, 3 hours by week) – August to December or according interest
Opened to international students

Professors

Prof^a. Edna Regina Amante (e.amante@ufsc.br) – Federal University of Pará

Prof^a. Luiza Helena Meller da Silva (lhmeller@ufpa.br) – Federal University of Pará

Invited professors: Prof. Dr. Daniel Granato – University of Limerick
(granatod@gmail.com)

Prof. Dr. Dimitris Charalampopoulos – Reading University
(d.charalampopoulos@reading.ac.uk)

Prof. Dr. Fernando Caixeta Lisboa – Instituto Federal de Educação, Campus Uberlândia
(fernandocaixeta@iftm.edu.br)

Prof. Dr. Neethu Hari – Kerala University (neethuharisharon@gmail.com)

Concepts and procedures that allow the use of clean technologies as a tool for minimizing waste, generating new products and valuing agro-industrial waste. Product lifecycle analysis. Multidisciplinary integration towards the generation of ecologically correct raw materials and processes.

Program

1 Introduction (6 hours/class)

Clean technologies and their relationships with the professional individual shaped for ecologically correct procedures. Concepts and procedures involved related to the sustainable environmental goals.

Proposals for case studies for each student (50% of concept) – 1 hour

These case studies will be related to specific regional problems of wastes and wastewater from agroindustry of several scales (familiar, median and big industries, according each region of the students of this class)

Professor Daniel Granato - 2 hours.

2 Food processing under the concepts and procedures of clean technologies: food of plant and animal origin, and biotechnological processes (12 hours)

Professor Dimitris Charalampopoulos – 2 hours

Professor Neethu Hari – 2-3 hours – environmental perspectives on biodegradable food packages.

Cases studies definition – 1 hour

Explanation about manuscript about each regional environmental problem that can be treated on Cleaner Technology concept.

3 Relations between characterization of raw materials and generation of new products (3 hours)

4 Aspects related to the use of agro-industrial by-products and residues: toxicity, pre-processing, composition (6 h)

5 Effects of the use of Clean Technologies on society, economy and environment (3 h)

6 Circular economy, carbon credit, reverse logistics and green economy in Clean Technologies (3 h).

Prof. Dr. Fernando Caixeta Lisboa (2h)

7 Waste minimization and valorization – models for the valorization of raw materials and waste minimization (6 h).

8 Evaluation (6 hours)

Case studies presentation (25%) – workshop on Clean Technology in Food Processing

Case studies manuscript (50%)

Colaboration and participation (25%)

References

Current articles relevant to the themes addressed in each topic, selected dynamically, according to current themes, of interest to the class, from other countries and Amazonian regional cultures.