Curriculum - Academic Year 2018-19
Characteristics of the Course Units

Name	*Model planning and validation (Design Of Experiments)*
ECTS credits	*4*
Year / Semester	*III /1°*
Specific learning outcomes	*On successful completion of this module students should be able to:* 1. *appreciate the advantages and disadvantages of a design for a particular experiment* 2. *construct optimal or good designs for a range of practical experiments* 3. *describe how the analysis of the data from the experiment should be carried out.* 4. *apply the basics of statistical inference (estimation, testing, confidence regions) in the course setting,* 5. *make use of the basics of the Design of Experiments such as randomization and blocking,* 6. *identify common and important types of experimental designs,* 7. *choose an appropriate design in a given research setting,* 8. *perform a correct statistical analysis of different types of designs* 9. *interpret the model and report the findings scientifically*
Contents	– Fundamental of design of experiments, – *Two level full factorial design,* – *Two level fractional factorial design,* – *Response surface methodology and optimisation*
Teaching and learning methods	*Face to face, 56 hours*
Teaching techniques	*Lectures, 24 hours* *Practical classes, 32 hours*
Assessment methods	*Written.* *A written tests and a final-term written exam are foreseen.* *The written tests and a final –term writen exam consists of exercise problems to be solved, which are similar to those presented during exercise sessions.*
Assessment criteria	*In the written tests, students should demonstrate their ability to interpret and analyse Two level full and fractional factorial designs* *In the final term test, students will be required to solve a problem related to a complex system.*
Assessment metrics	*Attribution of a final grade*
Criteria of attribution of the final grade	*The final grade will be determined according to the following rules:* - *written tests: 20%* - *Final term written test: 80%*
Preparatory course units	*N.A.*

Didactic material	*Zivorad.R.Lazic, "Design of experiments in chemical engineering, 2004, Wiley-VCH Walter Tinsson, " Plan d'expérience: constructions et analyses statistiques, 2010, Springer Jiju Antony, Design of experiments for engineers and scientists, 2003, Butterworks Heinemann,*