



**PROGRAMS AND BIBLIOGRAPHY**

<b>Subject</b>	
<b>Code</b>	<b>Name</b>
QO855	Natural Product Chemistry

<b>Vector</b>
OF:S-5 T:002 P:000 L:000 O:000 D:000 HS:002 SL:002 C:002 AV:N EX:S FM:75%

<b>Pre requirement</b>
QO321 *QO521

<b>Summary</b>
Introduction to the natural product chemistry and general considerations. Extraction and isolation methods. Primary and secondary metabolism. Biochemical reactions and organic reaction mechanisms. Elucidation of metabolic sequences. Chemical ecology and plant-plant relationship. Insect plant relationship. Animal-animal relationship. Carbohydrates. Shikimic acid pathway. Polyketide pathway and mevalonic acid pathway. Terpenes and. Alkaloids

<b>Program</b>
1-The natural products origin.. Analysis of PN.Phenylpropanoids. Flavonoids. Anthocyanins. Flavonoids and flavones. Xanthonessand stilbenos. Tannins. Quinones. Terpenoids. Essencial oils. Diterpenes. Triterpenes. Carotenoids. Organic Acids, Lipids. Polyacetylenes. Sulfur compounds. Alkaloids
2. Chemical ecology definition and evolution. Animal –plant relationship. Plants Chemical defenses .Feromones Plant- plant and plan-microorganisms relationship. Insect plant relationship. Animal-animal relationship. Carbohydrates. Shikimic acid pathway. Polyketide pathway and mevalonic acid pathway. Terpenes and. Alkaloids Primary and Secondary Metabolism.
3- Mass spectrometry applied to Natural ProductsNMR applied to Natural products Absolute Configuration methods

<b>Bibliography</b>
<b>1-Kurt B G. Torsell “ Natural Product Chemistry a mechanistic, biosynthetic and ecological approach”</b>
2-Paul M. Dewick “Medicinal Natural Products: A Biosynthetic Approach” 3ª ed. John Wiley & Sons, Ltd. 2009.

3-J.Mann "Chemical Aspects of Biosynthesis" Oxford University Press, 2002.

4) Natural Products Reports: A critical review journal which stimulates progress in all areas of natural products research. --

#### Evaluation criteria

FOR GRADING POLICY, SEE: REGIMENTO GERAL DE GRADUAÇÃO, SEÇÃO I – NORMAS GERAIS, CAPÍTULO V – DA AVALIAÇÃO DO ALUNO NA DISCIPLINA. STUDENTS ARE REQUIRED TO ATTEND 75 % OF THE LECTURES. FOR FURTHER DETAILS, SEE: REGIMENTO GERAL DE GRADUAÇÃO, CAPÍTULO VI, SEÇÃO X, ARTIGO 72.

#### ASSESSMENT

##### GRADING SCHEME

Final grade will be calculated according to the following process:

1. All the scores on each assignment will be 0-100 scale
2. The lowest homework score and the lowest paper analysis score will be canceled
3. The average of the remaining assignments according to the following weights:
  - Test 1 25%
  - Test 2 25%
  - Paper analysis: 20%
  - Class participation (discussions + news): 15%
  - Presentation + paper: 15%
4. The final average will be converted to a letter grade according to the following scheme:
  - 90-100 ⇒ A
  - 80-89 ⇒ B
  - 70-79 ⇒ C
  - 60-69 ⇒ D
  - 0-59 ⇒ R (failing grade)