



UNIVERSITY OF JAMMU

(NAAC ACCREDITED 'A' GRADE UNIVERSITY)
(Baba Sahib Ambedkar Road, Jammu-180006 (J&K))

Academic Section

Email: academicsectionju14@gmail.com

CORRIGENDUM

Please read

Semester IV Course No. PSCHTE409 Title: Chemistry of Natural Products

Instead of

Semester IV Course No. PSCHTE409 Title: Chemistry of Natural Products and
Molecular Rearrangements

as already notified vide notification No. F.Acd/II/19/7795-7800 dated 05.02.2020 in the Syllabi and Courses of Study of the subject of **Chemistry** of Master Degree Programme of **semester IVth** under the **Choice Based Credit System** (as given in the annexure) for the examination to be held in the year **May 2022, 2023 and 2024**.

Sd/-

DEAN ACADEMIC AFFAIRS

No. F. Acd/II/23/8206-8216

Dated: 11-8-2023.

Copy for information and necessary action to:

1. Dean, Faculty of Science
2. Convener, Board of Studies in **Chemistry**
3. Sr. P.A. to the Controller of Examinations
4. All members of the Board of Studies
5. Confidential Assistant to the Controller of Examinations
6. I/C Director, Computer Centre, University of Jammu
7. Deputy Registrar/Asst. Registrar (Conf. /Exams. P.G)
8. Incharge, University Website for Uploading of the notification

Sumitashamo
11/8/23
Deputy Registrar (Academic)

KS 11/8/23
Rab 11/8/23
NO 11/8/23

Course No.: PSCHTE409
Title: Chemistry of Natural Products
Credits: 04
No. of hours: 60

Course Category: PSEC

Maximum Marks: 100

Course Outcome: This course is aimed to deliver the knowledge about the natural products like terpenoids, carotenoids, alkaloids, steroid, plant pigments and marine natural products.

Unit-I

Terpenoids and Carotenoids (12 hrs)

Classification, Occurrence and isoprene rule, Structure determination, Stereochemistry and synthesis of the following representative molecules:

α -Terpineol, Menthol, Farnesol, Santonin, β -Carotene and Squalene.

Unit-II

Alkaloids (12 hrs)

Definition, Physiological action, Occurrence and isolation, Structure elucidation and synthesis of Quinine, Morphine and Atropine.

Unit-III

Steroids (12 hrs)

Occurrence, Basic skeleton, Diel's hydrocarbon and stereochemistry, Isolation, Structure determination and synthesis of Cholesterol, Testosterone, Estrone, Progesterone.

Unit-IV

Plant Pigments (12 hrs)

Occurrence and general methods of structure determination of anthocyanins, Flavones & isoflavones, Synthesis of Apigenin, Quercetin, Cyanidin and Cyanin, Biosynthesis of flavonoids: Acetate pathway and Shikimic acid pathway.

Unit-V

Marine natural products (12 hrs)

General introduction, Isolation of marine natural products, Detailed study of following marine natural products:

Marine toxins (Saxitoxin and Tetrodotoxin), Nucleosides (pyrimidines and purines D-arabinosides and pyrimidines and purines 1- β -D-ribosides).

BOOKS RECOMMENDED

1. Natural Products: Chemistry and Biological Significance, J. Mann, R.S. Davidson, J.B.Hobbs, D.V. Bantrophe and J.B. Harborne, Longman, Harlow, Essex, England (1994).
2. Organic Chemistry, Vol.2, I.L. Finar, Longman.
3. Chemistry, Biological and Pharmacological Properties of Medicinal Plants from the Americas, Ed. Kurt Hostettmann, M.P. Gupta and A. Marston, Harwood Academic Publishers.
4. Introduction to Flavonoids, B.A. Bohm, Harwood Academic Publishers.
5. New Trends in Natural Product Chemistry, Atta-ur-Rahman and M. I. Choudhary, Harwood Academic Publishers.

27/5/24
SL

Syllabus for the examination to be held in May 2022, May 2023 & May 2024

6. Chemistry of Natural Products, S.V. Bhat, B.A. Nagasampagi and M. Sivakumar, Narosa Publishing House, New Delhi.
7. Bioactive Marine Natural Products, D. S. Bhakuni and D. S. Rawat, Anamaya Publishers, New Delhi (2005).

PATTERN OF EXAMINATION

There shall be two **Minors (I & II)** and one **Major** tests in each theory course. Each Minor test shall have marks weightage of 20% and its duration will be of 1½ hour. The Major test shall have marks weightage of 60% and its duration will be of 03 hours. **Minor-I** will be held after 3-4 weeks on completion of 20% of the prescribed syllabus. **Minor-II** will be held after 8-9 weeks on completion of 21% to 40% of the prescribed syllabus.

The major test will be held at the end of semester on completion of 41% to 100% of the syllabus. This test will have seven questions (each of twelve marks). The students have to attempt five questions in all. Question no. 1 (short answer type) will be compulsory and will be set out from 40% of syllabus covered in Minor I & II. The remaining six questions will be from across the syllabus of 41% to 100% i.e. beyond Minor I & II. The student has to attempt any four questions out of six questions.

NOTE: Candidates who have appeared in Minor Tests and failed to get the minimum required marks i.e. 14 out of 40 will not be allowed to take Major Test. Such candidates shall have to re-appear in the Minor Test/s only once in which he/she has failed, to be conducted at least fifteen days before the Major Test.

Handwritten notes and signatures:

- A large circle with '14' inside and an arrow pointing to the right.
- The word 'page' written vertically.
- The word 'index' written in a cursive style.
- The word 'S. K. Me' written in a cursive style.
- The word 'Hug' written in a cursive style.
- The word 'M.P.R.' written in a cursive style.