

**The University of Jordan**

**Accreditation & Quality Assurance Center**

**Selected Topics in Chemistry of Natural Products**

**1211522**

**COURSE Syllabus**

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| **1** | Course title | Selected Topics in Chemistry of Natural Products |
| **2** | Course number | **1211522** |
| **3** | Credit hours (theory, practical) | 2 |
| Contact hours (theory, practical) | 2 |
| **4** | Prerequisites/corequisites | **Phytochemistry-2 (1201425)** |
| **5** | Program title | Pharmacy |
| **6** | Program code | - |
| **7** | Awarding institution | The University of Jordan |
| **8** | Faculty | Pharmacy |
| **9** | Department | Pharmaceutical Sciences |
| **10** | Level of course | Undergraduate |
| **11** | Year of study and semester (s) | Fourth / fifth year (elective course) |
| **12** | Final Qualification | Pharmacy BSc |
| **13** | Other department (s) involved in teaching the course | N/A |
| **14** | Language of Instruction | English |
| **15** | Date of production/revision | 4th June 2017 |

16. Course Coordinator:

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| Dr Mayadah Shehadeh  Office no.: 207 extension building  Office hours: Check Office Posting  e-mail: [m.shehadeh@ju.edu.jo](mailto:m.shehadeh@ju.edu.jo)  Website: <http://eacademic.ju.edu.jo/m.shehadeh/default.aspx> |

17. Other instructors:

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| *Office numbers, office hours, phone numbers, and email addresses should be listed.*  **N/A** |

**18. Course Description:**

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| This course introduces students to phytomedicine, folk medicine and research trends in the field of phytopharmaceuticals. Students will acquire knowledge about the appropriate use of natural products and the principles of integrative medicine . The course highlights the role of pharmacist in delivering information and advice for patients regarding phytopharmaceuticals, world health organization-recognized traditional and complementary therapies and phytomedicine. |

19. Course aims and outcomes:

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| A- Aims:   1. Understanding the importance of the medicinal plants on human health and economy 2. Acquainting knowledge of the most important medicinal plants with special emphasis on phytopharmaceuticals 3. Appreciation of the group working acquainted viapresentation and discussion. This course is intended to introduce pharmacy students to the concept of complementary medicine and the different types of medicines commonly used by patients and complementary therapies recognized by international health authorities with emphasis on nutraceuticals and phytopharmaceuticals. The course highlights the role of pharmacist in delivering information and advice for both patients and health care providers either in community or clinical setting. Lectures will focus on the concept of holistic approach of homeopathy, aromatherapy, rational phytotherapy, ayurvedic medicine, chiropractic, reflexology and traditional Chinese medicine including acupuncture and Chinese traditional herbal medicine.   B- Intended Learning Outcomes (ILOs):  Upon successful completion of this course students will be able to: |
| 1. Know the concept of holistic approach and its impact on patient disease and treatment plan |
| 2. Know the importance and value of pharmacist in patient education and counselling on CAM |
| 3. Recognize which and when to use different complementary modalities in diseases |
| 4. Recognize when and how to use nutraceuticals and phytopharmaceuticals products to complement orthodox medicine for the patient's disease condition |
| 5. Advise patients on commonly used use nutraceuticals and phytopharmaceuticals in health and diseased conditions and recommend the most appropriate phytopharmacological and nonpharmacological treatment for the patient's condition |
| 6. Use official scientific references of nationally and internationally approved CAM modalities for significant side effects, drug-herb interactions , contraindications and the appropriate route of administration |

20. Topic Outline and Schedule:

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| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Topic** | **Week** | **Instructor** | **Achieved ILOs** | **Evaluation Methods** | **Reference** | | **1. Introduction to CAM (**Concept of healing, Classification  Practice and delivery of CAM, regulatory affairs, Clinical studies and recent advances, CAM in the pharmacy environment)  References for Phytotherapy | 1 | Dr Mayadah Shehadeh | B1-2 | Exams, Quizes | [Complementary and alternative medicine / edited by Steven B. Kayne.](http://hip.jopuls.org.jo/c/portal/layout?p_l_id=PUB.1010.1&p_p_id=search_WAR_fusion&p_p_action=1&p_p_state=normal&p_p_mode=view&p_p_col_id=column-1&p_p_col_pos=0&p_p_col_count=2&_search_WAR_fusion_action=navigate&_search_WAR_fusion_navigationData=search%7E%3D1%7E%21TL%7E%211%7E%21Complementary+and+alternative+medicine+%2F+edited+by+Steven+B.+Kayne.)(2009) Pharmaceutical Press.  ISBN:  978 0 85369763 3 | | **2. Manual Therapies**  (Chiropractic & Osteopathy, definition, concept, evidence, indications and safety, reflexology concept, evidence, indications and safety)  **3. Traditional Chinese Medicine (TCM)**  (Definition, theory, evidence and practice, concept of meridians, yin and yang,  **Acupuncture and Chinese Herbal Medicine** definition, concept, evidence, indications and safety) | 1 & 2 | Dr Mayadah Shehadeh | B 1-2, B 6 | Exams, Quizes | [Complementary and alternative medicine / edited by Steven B. Kayne.](http://hip.jopuls.org.jo/c/portal/layout?p_l_id=PUB.1010.1&p_p_id=search_WAR_fusion&p_p_action=1&p_p_state=normal&p_p_mode=view&p_p_col_id=column-1&p_p_col_pos=0&p_p_col_count=2&_search_WAR_fusion_action=navigate&_search_WAR_fusion_navigationData=search%7E%3D1%7E%21TL%7E%211%7E%21Complementary+and+alternative+medicine+%2F+edited+by+Steven+B.+Kayne.)(2009) Pharmaceutical Press.  ISBN:  978 0 85369763 3 | | **4. Aromatherapy**  ( Definition, concept, evidence, indications and safety, aromatherapy in practice, common oils and their uses) | 2 | Dr Mayadah Shehadeh | B 1-2, B 6 | Exams, Quizes | [Complementary and alternative medicine / edited by Steven B. Kayne.](http://hip.jopuls.org.jo/c/portal/layout?p_l_id=PUB.1010.1&p_p_id=search_WAR_fusion&p_p_action=1&p_p_state=normal&p_p_mode=view&p_p_col_id=column-1&p_p_col_pos=0&p_p_col_count=2&_search_WAR_fusion_action=navigate&_search_WAR_fusion_navigationData=search%7E%3D1%7E%21TL%7E%211%7E%21Complementary+and+alternative+medicine+%2F+edited+by+Steven+B.+Kayne.)(2009) Pharmaceutical Press.  ISBN:  978 0 85369763 3 | | **5. Homeopathy**  (Definition, concept, evidence, indications and safety, Materia medica and other references,  Examples of homeopathic preparations and indications) | 2 | Dr Mayadah Shehadeh | B 1-2, B 6 | Exams, Quizes | [Complementary and alternative medicine / edited by Steven B. Kayne.](http://hip.jopuls.org.jo/c/portal/layout?p_l_id=PUB.1010.1&p_p_id=search_WAR_fusion&p_p_action=1&p_p_state=normal&p_p_mode=view&p_p_col_id=column-1&p_p_col_pos=0&p_p_col_count=2&_search_WAR_fusion_action=navigate&_search_WAR_fusion_navigationData=search%7E%3D1%7E%21TL%7E%211%7E%21Complementary+and+alternative+medicine+%2F+edited+by+Steven+B.+Kayne.)(2009) Pharmaceutical Press.  ISBN:  978 0 85369763 3 | | **6. Herbal Medicine and Medicinal Teas**  7. Phytomedicine for CNS diseases  -Ginkgo  -St. John's Wort  -Valerian | 2 & 3 | Dr Mayadah Shehadeh | B4-6 | Exams, Quizes & Assignments | Herbal medicine, 3rd edition (2007) Joanne Barnes, Linda A Anderson  and J David Phillipson**.** Pharmaceutical Press  ISBN  978 0 85369 623 0 | | 8. **Traditional Indian Medicine Ayurveda**  **Quiz** | 3 | Dr Mayadah Shehadeh | **B4-6** | Exams, Quizes | Herbal medicine, 3rd edition (2007) Joanne Barnes, Linda A Anderson  and J David Phillipson. | | 9. Phytomedicine for cardiovascular diseases  -Garlic and onion  - Hawthorn  - Red yeast rice  Midterm Exam | 3 | Dr Mayadah Shehadeh | **B4-6** | Exams, Quizes& Assignments | Herbal medicine, 3rd edition (2007) Joanne Barnes, Linda A Anderson  and J David Phillipson**.** | | **10.** Phytomedicine for **digestive system diseases**  - Artichoke  - Milk thistle  - Laxatives (senna, rhubarb, aloe, castor oil, linseed, psyllium, agar, wheat bran, osmotic laxatives)  - Ginger | 4 | Dr Mayadah Shehadeh | B4-6 | Exams, Quizes | Herbal medicine, 3rd edition (2007) Joanne Barnes, Linda A Anderson  and J David Phillipson**.** | | **11.** Phytomedicine for **gynecological and urinary tract diseases**  -Evening primrose oil  - Cranberry  - SawPalmeto | 5 | Dr Mayadah Shehadeh | B4-6 | Exams, Quizes & Assignments | Herbal medicine, 3rd edition (2007) Joanne Barnes, Linda A Anderson  and J David Phillipson**.** | | **12**. **Phytomedicine for rheumatic diseases**  - Willow  - Nettle  - Arnica | 5 | Dr Mayadah Shehadeh | B4-6 | Exams, Quizes | Herbal medicine, 3rd edition (2007) Joanne Barnes, Linda A Anderson  and J David Phillipson**.** | | **13.** Phytomedicine for **enhancing immune system**  -Ginseng  -Echinacea | 5 | Dr Mayadah Shehadeh | B4-6 | Exams, Quizes | Herbal medicine, 3rd edition (2007) Joanne Barnes, Linda A Anderson  and J David Phillipson**.** | | Final Exam | 6 |  |  |  |  | |

21. Teaching Methods and Assignments:

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| Development of ILOs is promoted through the following teaching and learning methods:  1) Lectures  2) Case study  3) Products samples presentations  4) Assignments and discussions |

22. Evaluation Methods and Course Requirements:

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| Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:   1. Exams 2. Quizzes 3. Students reports on assignments |

23. Course Policies:

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| A- Attendance policies:  **University rules and regulations are applied**  ***First warning*** – with 4 absences  ***Last warning*** – with 5 absences  Failing in the subject – with 6 absences  B- Absences from exams and handing in assignments on time:  Will result in zero achievement unless health report or other significant excuse is presented.  C- Health and safety procedures: **N/A**  D- Honesty policy regarding cheating, plagiarism, misbehavior:  According to JU regulations participation, commitment of cheating will lead to applying all following penalties together  1) Failing the subject he/she cheated at  2) Failing the other subjects taken in the same course  3) Not allowed to register for the next semester. The summer semester is not considered as a semester  E- Grading policy:  Exams and Quizzes.  Mid Exam: 40 marks  Quize: 5 marks  Assignments: 5 marks  Final Exam: 50 marks  Total 100 marks  F- Available university services that support achievement in the course:  Lecture room with data show and internet connection |

24. Required equipment:

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| Computer and internet connection |

**25. References:**

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| 1. Required book (s), assigned reading and audio-visuals:   1. [Complementary And Alternative Medicine / edited by Steven B. Kayne.](http://hip.jopuls.org.jo/c/portal/layout?p_l_id=PUB.1010.1&p_p_id=search_WAR_fusion&p_p_action=1&p_p_state=normal&p_p_mode=view&p_p_col_id=column-1&p_p_col_pos=0&p_p_col_count=2&_search_WAR_fusion_action=navigate&_search_WAR_fusion_navigationData=search%7E%3D1%7E%21TL%7E%211%7E%21Complementary+and+alternative+medicine+%2F+edited+by+Steven+B.+Kayne.)(2009) Pharmaceutical Press, London-London-Chicago. ISBN: 978 0 85369763 3    **2. Herbal Medicines**, 3rd edition (2007**).**  Joanne Barnes, Linda A Anderson and J David Phillipson. Pharmaceutical Press , London-Chicago. ISBN 978 0 85369 623 0  https://www.google.jo/search?q=herbal+medicine+3rd+edition&oq=herbal+mceicine+3rd&aqs=chrome.1.69i57j0l2.11898j0j7&sourceid=chrome&ie=UTF-8  **3.** (MEDLIN E, e-library)   1. Recommended books, materials, and media:   **-Rational phytotherapy, a physicians' guide to herbal medicine**, fourth edition 2001. V Schulz, R Hansel,  V.E. Tyler, Springer  - **Dietary Supplements**, 3rd edition (2007) Pamela Mason, Pharmaceutical Press. |

26. Additional information:

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Name of Course Coordinator: Mayadah Shehadeh Signature: ------------------------- Date: 4th June. 2017 Head of curriculum committee/Department: ------------------------- Signature: ---------------------------------

Head of Department: ------------------------- Signature: ---------------------------------

Head of curriculum committee/Faculty: ------------------------- Signature: ---------------------------------

Dean: ------------------------------------------- Signature: ---------------------------------

Copy to:

Head of Department

Assistant Dean for Quality Assurance

Course File