**BİRUNİ UNIVERSITY**

**“ The Future of Science”**

**FACULTY OF PHARMACY**

**…Department of Professional Sciences**

**COURSE INFORMATION PACKAGE**

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| **Course code** | **Course optic code** | **Theory hours/ week** | **Practice hours/week** | **Credit** | **ECTS** |
| **ECZ334** | …………………. | - | 3 | 2 | 2 |
| **Course name** | Pharmacognosy laboratory II |
| **Semester** | 2016-2017 Spring |
| **Course type** | Obligatory |
| **Course name** | Pharmacy |
| **Course language** | Turkish |
| **Prequisites** | Pharmaceutical botany |
| **Training methods** | 1: Lecture, 2: Question-answer, 3: Individual study, 5: Group study, 6. Field activity  |
| **Assesment methods** | A: Written exam B: Oral exam, C: Presentation |
| **Disabled students** | Disabled students they need information about their own status submitted to the faculty may request the provision of necessary convenience. |
| **Instructors** | Assist. Prof. Dr. Vildan Seyhan, Prof. Dr. Abdülkerim Alpınar |
| **Course assistant** | None |
| **Definition** & **objective of the Course** | Students learn the physical and chemical properties of the pharmaceutical raw materials of herbal origin with the laboratory practices performed by themselves in this course. Also, they learn how the extraction of these substances from plants, their assay, how the quality control to be performed by means of laboratory practices.  |
| **Learning outcomes** | 1. Students learn the subjects of extractions, purifications, determination of activity of pharmaceutical raw materials of natural origin with the laboratory practices.
2. Students learn about how to determine if the herbal drugs confront with the standarts and how quality control thereof is performed and have information about the structure of active ingredients by means of laboratory practices.
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| **Weeks****1.****2.****3.****4.****5.** **6.****7.****8.** **9.****10.****11.****12.****13.****14.****15.****16.****17.** | **Course contents and learning activities**Identification and isolation of caffeine Identification of ephedrineExtraction of the volatile oilAnalysis of the volatile oilsDetermination of water, fixed oil and resin in the volatile oil Identification of diterpenes (THC)Identification and assay of the iridoids (THC)MidtermIdentification of cardiotonic glycosides (THC)Identification and assay of saponins (THC)Identification of carotenoids (THC)Isolation of lycopen and beta carotenExtraction of citric acidExtraction of ascorbic acidIdentification, drawing and report of one drug that was already evaluated within the yearDetermination the quality of one drug that was already evaluated within the yearIdentification and assay of one active ingredient of one drug that was already evaluated within the year |

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| **Assesment methods** | **Number** | **Contribution percentage** |
| **Attendance** | 0 | 0 |
| **Laboratory** | 16 | 20 |
| **Practice** | 0 | 0 |
| **Field activity** | 0 | 0 |
| **Specific practical training** | 0 | 0 |
| **Quiz** | 1 | 10 |
| **Presentation** | 1 | 5 |
| **Projects** | 0 | 0 |
| **Seminar** | 0 | 0 |
| **Midterm exam** | 1 | 25 |
| **Final exam** | 1 | 40 |
|  **Total** | **100** |

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| **Text book**  |  **Different texts from various sources** |
| **References** | 1. Seçkin T. 2014. İşlevsel bitki kimyası. Nobel Kitabevi, Ankara
2. Harborne JB. 1991. Phytochemical methods. Chapman and Hall USA
3. Stahl E. 1973. Drug analysis by chromatography and microscopy. Ann arbor Science USA
4. Çubukçu B. 1992. Analitik farmakognozi. İst Üniv Yay No 3710
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| **CONTRIBUTION OF THE COURSE PROGRAMME**  |
| **No** | **Competence of the Pharmacy programme** | **Contribution** |
| 1 | 2 | 3 | 4 | 5 |
| 1 | Implements skills in all areas of occupations from pharmaceutical basic and professional sciences within the scope and framework of rules of ethics, religion, language, race, gender and socio-economic discriminaion in collaboration with the relevant professional administrators and regulatory authorities. |  |  |  |  | x |
| 2 | Communicates effecively with community members, health care professionals policy makers and administrators to transfer informations of professional pharmacy applications and usage of pharmaceutical products. |  |  |  |  | x |
| 3 | In the frame of pharmaceutical care and clinic applications, evaluates accuracy and cost-effectiveness of medication treatment, solve the problems and give decisions. |  | x |  |  |  |
| 4 | Acquire the current and evidence-based informaion by using relevant information technologies and apply the rational use of natural, synthetic, and biotechnologies drugs and give education, information and concultation to community members, other health-care providers and constitutions. |  |  |  |  | x |
| 5 | Experienced the basic and professional knowledge to manage, apply and make decision of the entire process related to design, handling and consumption of natural, synthetic and biotechnical pharmaceuticals.  |  |  |  |  | X |
| 6 | Possess cultural competency and consciousness to design, implement, and monitor patient-oriented pharmacy practice for the improvement of the qualty of health care by making joint cooperation. |  | x |  |  |  |
| 7 | Raise conciousness and application of modern scientific and technological developments in pharmaceuticalfield by the awareness of lifelong learning. |  |  |  | X |  |
| 8 | Experienced to research and development, quality control, good manufactoring practices and has knowledge to manage and apply the license process of pharmaceutical products. |  | x |  |  |  |
| 9 | As a pharmacists with the universal norms, has foreign language proficiency to follow professional developments, conduct research and developments and competent to communicate pateints and other healthcare professionals. | X |  |  |  |  |
| 10 | Gather patient histories, determine needs and priorities of patients, prevent individual diseases,know, define and apply the planning and management process of treatment. | X |  |  |  |  |

Workload and ECTS calculation

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| **Activities** | **Number** | **Duration** | **Total work load** |
| **Course duration** | - | - | - |
| **Laboratory** | 16 | 3 | 48 |
| **Laboratory practice** | - | - | - |
| **Specific practical training** | - | - | - |
| **Field work** | 1 | 2 | 2 |
| **Presentation / seminar preparation** | 1 | 2 | 2 |
| **Project** | - | - | - |
| **Homeworks** | - | - | - |
| **Quiz** | - | - | - |
| **Midterms (study duration)**  | 1 | 2 | 2 |
| **Final exam (study duration)** | 1 | 4 | 4 |
| **Total workload** | **20** | **13** | **58** |
| **ECTS credit of course (Total workload / 25)**  |  |  | **2.3** |