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## A COURSE MODULE DESCRIPTOR FORM

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| Module Information |
| **Course Module Title** | Adverse drug reaction (ADR) |
| **ناوى کۆرس مۆدیول** | کارلێکی پێچە وانەی دەرمان  |
| **عنوان الوحدة** | تفاعلات دوائية ضائرة |
| **Course Module Type** | Core | **Module Code** | PH303 |
|  **ECTSs**  | 6 |
| **Department** | Pharmacy  |
| **Department Code** | PH |
| **Module Website (CMW)** | [List of Modules (noble.edu.krd)](https://noble.edu.krd/lms/classes.php) / [Noble Insitute – Noble Institute](https://noble.edu.krd/) |
| **Module Leader (ML)** |  Narmin Mahmoud |
| **NTI - E - mail** | **Narmin.Ismail@noble.edu.krd** |
| **ML Acad. Title** | Assistant Lecture  |
| **ML ORCID** | https://orcid.org/0000-0003-3174-1066 |
| **ML Google Scholar Acc** | Narmin.kurdneth@gmail.com |

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| Relation with Other Modules |
| **Pre-requisites** | None  |
| Module Aims, Learning Outcomes and Indicative Contents |
| Module Introductory Description | The course is designed to provide the student with the basic information about adverse drug reaction and its unexpected negative reaction to a medication or treatment that is used in an approved manner. While sometimes used interchangeably with side effects. Adverse drugs reactions may occur shortly after a medication is used, or may not be seen for decades. As a leading cause of illness and death (**Morbidity and mortality**), the importance cannot be overstated. Any prescription or over-the-counter drug, as well as nutritional supplements, has the potential to cause adverse reactions. |
| Module Aims | Adverse drug reactions (ADRs) are an important public health problem, representing a major cause of morbidity and mortality. |
| Module Learning Outcome |  Upon successful completion of the course, the students will be able to: 1. Classify adverse drug reactions (ADRs) and interactions.
2. Recognize the role as a pharmacist in managing ADRs and interactions in different scenarios
3. Identify relevant information on drugs of interest.
4. ADRs frequently encountered in clinical settings.
5. Emphasize mechanisms underlying drug-drug, drug- food & drug-herbal interaction
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| Learning and Teaching Strategies |
| **Strategies** | The teaching consists of Lectures, discussion groups, tutorials, problem solving and seminars. The instructions are partially or completely in English. Emphasis is placed on the student's ability to collect and process material as well as the student's ability to write and make oral presentation on the efficacy and safety of pharmaceutical drugs. |

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| **Required texts and References** |
| * **1.**[**Weiss AJ, Freeman WJ, Heslin KC, et al**](https://www.hcup-us.ahrq.gov/reports/statbriefs/sb234-Adverse-Drug-Events.pdf)**: Adverse drug events in U.S. hospitals, 2010 versus 2014. Agency for Healthcare Research and Quality. Statistical Brief #234. January 2018. Accessed 3/31/21.**
* **2. [PSNet (Patient Safety Network), Agency for Healthcare Research and Quality](https://psnet.ahrq.gov/primer/medication-errors-and-adverse-drug-events%22%20%5Ct%20%22_blank) : Medication Errors and Adverse Drug Events. Accessed 3/31/21.**
* **1.**[**FDA Adverse Event Reporting System (FAERS)**](https://www.fda.gov/Drugs/GuidanceComplianceRegulatoryInformation/Surveillance/AdverseDrugEffects/)**: Questions and Answers on FDA's Adverse Event Reporting System (FAERS). Accessed 3/31/21.**
* **1.**[**Zhou Z-W, Chen X-W, Sneed KB, et al**](https://pubmed.ncbi.nlm.nih.gov/25895462/)**: Clinical association between pharmacogenomics and adverse drug reactions. Drugs 75:589-631, 2015. doi: 10.1007/s40265-015-0375-0**
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| Module Delivery |
| **Total workload** |
| **Contact Theoretical Hours – Per semester** | 2 |
| **Contact Practical Hours – Per Semester** | NA |

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| Module AssessmentThe following activities or any other activities that match the Bologna process can be performed |
| **Module Activities** | **Time /Number** | **Weight (Marks)** | **Week Due** |
| Contact hours – Participation | Daily bases | 5% | Weekly  |
| (Science / Lab)(Social science / Critical thinking) |  | 5% | Weekly |
| Presentation / Seminar |  | 5% | Week 7 |
| Tutorial |  | 5% |  |
| Quiz |  | 5% | 3-13 |
| Self-study |  | 5% | weekly |
| Projects |  | 5% | 5-14 |
| Oral assessment |  | 5% | daily |
| Midterm Exam  |  | 20% | Week 8 |
| Final Exam |  | 40% |  |
| **Total** |  | 100% |  |

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| Delivery Plan (Designed Syllabus) |
|  | **Course Module Content/ theory** |
| Week 1 | 1. Definition and introduction to ADR
2. Why ADR is important to know?
3. What is an example of an ADR?
4. symptoms that may occur as an adverse reaction
5. What are the ADR reactions
 |
| Week 2 | 1. Pharmacokinetics ( ADME)- Adverse drug reaction
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| Week 3 | 1. Side effect vs ADR
2. Side effects as a new drug discovery
3. Drugs discovered as a consequence of side effect- **group activity**
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| Week 4 | 1. ADR characteristic or classification
2. Type of ADR in general-**group activity**
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| Week 5 | 1. Type A,B,C,D, E and F
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| Week 6 | 1. Continue with week 5 addition to the group activities
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| Week 7 | 1. seminar
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| Week 8 | 1. midterm
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| Week 9 | 1. Drug interaction in general
2. Drug-Drug interaction and Drug-Food interaction
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| Week 10 | 1. Pharmacodynamics adverse drug reaction
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| Week 11 | 1. Major groups of drugs involved in adverse drug reaction
2. Knowledge about prophylaxis
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| Week 12 | 1. What is antidote and for what is used ?
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| Week 13 | 1. Prevention of Adverse Drug Reactions
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| 14 | 1. Treatment of Adverse Drug Reactions
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| 15 | 1. Methods and systems to detect adverse drug reactions in hospitals
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| 16 | 1. Project about collecting data about ADR at hospitals and pharmacy
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| 17 | Quick revision-overall |
| 18 | Final exam session |

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|  | **Course Module Content/ practical** |
| Week 1 | Activities related to the theory lectures  |
| Week 2 |  |
| Week 3 |  |
| Week 4 |  |
| Week 5 |  |
| Week 6 |  |
| Week 7 |  |
| Week 8 |  |
| Week 9 |  |
| Week 10 |  |
| Week 11 |  |
| Week 12 |  |
| Week 13 |  |
| Week 14 |  |
| Week 15 |  |

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| Course Keywords |
| Adverse drug reaction, pharmacovigilance, drug safety  |