Syllabus: Community Pharmacy (2) (#131702469)
Summer Semester 202.. /202..

COURSE INFORMATION	
Course Name: Community Pharmacy (2) (face-to-face education) **Semester:** Summer **Department:** Clinical Pharmacy & Pharmacy Practice **Faculty:** Pharmaceutical Sciences	**Course Code:** 131702469 **Section:** As per semester **Core Curriculum**: 2019 Study Plan
Day(s) and Time(s): According to HU courses timetable/semester **Classroom:** As per semester	**Credit Hours:** 2 **Prerequisites**: 131702464 (Pharmacotherapy 1)

COURSE DESCRIPTION

This course helps pharmacy students identify and understand the role of pharmacists in the community and the hospital at practice sits. In this experiential training program, students will spend most of their class and learning time (at least 224 hours) in the practice environment interacting and communicating with pharmacists, technicians, peers, other healthcare providers, and patients. Students will develop their skills to integrate their basic pharmaceutical and medical knowledge and apply it into patient care particularly, in the outpatient setting. It also offers the students to acquire an understanding of their role in the pharmaceutical care of hospitalized patients with an appreciation of some important hospital-related medications. In addition, students will have the opportunity to enhance their communication and interpersonal skills to promote constructive relationships with patients and co-workers including healthcare professionals and develop professional attitude.

DELIVERY METHODS

The course will be delivered through a combination of active learning strategies. These include:

- PowerPoint lectures and active classroom-based discussion.
- Presentations/patient education activities/intervention form/quizzes will evaluate the students' understanding and skills.
  Students will be encouraged to participate and be actively involved in the learning process. The quiz will be given every week to gain insight into the students' competences (to verify whether students have understood the topic). During delivering the topic presentation, time will be given to allow students to reflect about what they have learnt and think in and discuss examples of case

studies and prescriptions they have encountered.
- Relevant films and documentaries
- Video lectures
- E-learning resources: e-reading assignments and practice clinical case studies through Model and Microsoft Team

FACULTY INFORMATION

Name	**Dr Enaam M. Al Momany**
Academic Title:	**Assistant Professor**
Office Location:	**Third Floor**
Telephone Number:	**Extension: 3433**
Email Address:	**enaam@hu.edu.jo**
Office Hours:	**As announced per semester** ***Please send an e-mail (enaam@hu.edu.jo) to meet at any other time.***

REFERENCES AND LEARNING RESOURCES

Required Textbook(s):.

1. DiPiro J. T., Yee G. C., Posey L. M. et al. ***Pharmacotherapy: A Pathophysiologic Approach*** (McGraw Hill: 11e 2020) ISBN-10: 1260116816

2. Bertram Katzung. ***Basic and Clinical Pharmacology*** (McGraw Hill / Medical: 14 e 2017) ISBN-10: 1259641155

3. Daniel L. Krinsky et al. ***Handbook of nonprescription drugs: an interactive approach to self-care*** (American Pharmacists Association (APhA): 19 e 2017) ISBN-10: 1582122652

4. Beardsley R. S., Kimberlin C. L., Tindall W. N. ***Communication Skills in Pharmacy Practice: A Practical Guide for Students and Practitioners*** (Lippincott Williams & Wilkins: 6 e 2011) ISBN-10: 1608316025

Suggested Additional Resources:

5. Marie A. Chisholm-Burns, Terry L. Schwinghammer, Patrick M. Malone et al. ***Pharmacotherapy Principles and Practice*** (McGraw Hill / Medical: 5e 2019) ISBN-10: 1260019446

6. Brian K. Alldredge; Robin L. Corelli; Michael E. Ernst; et al. ***Applied Therapeutics: The Clinical Use of Drugs*** (Wolters Kluwer: 11e 2018) ISBN/ISSN: 9781496318299

7. Roger Walker & Cate Whittlesea Churchill. ***Clinical Pharmacy and Therapeutics*** (Churchill Livingstone: 5 e 2012) ISBN-10: 0702042935

8. Blenkinsopp A., Duerden M., Blenkinsopp J. ***Symptoms in the Pharmacy: A Guide to the Management of Common Illnesses*** (Wiley-Blackwell: 8 e 2018) ISBN-10: 9781119317968

Useful Web Resources:

9. Centers for Disease Control and Prevention. Epidemiology and Prevention of Vaccine-Preventable Diseases. Hall E., Wodi A.P., Hamborsky J., et al., eds. 14th ed. Washington, D.C. Public Health Foundation, 2021. Available at https://www.cdc.gov/vaccines/pubs/pinkbook/index.html

10. Drugs and Lactation Database (LactMed) [Internet]. Bethesda (MD): National Library of Medicine (US); 2006-. Available from https://www.ncbi.nlm.nih.gov/books/NBK501922/?report=classic

11. The Pharmacists' Patient Care Process (PPCP). Available at https://jcpp.net/patient-care-process/

12. Many drug information sources are now available on website: www.drugs.com www.Elm.Jo www.Patient.info

13. Supplementary sources for you to practice are links to videos about objective structured clinical examination (OSCE). OSCE is a form of performance-based testing used to measure candidates' clinical competencies. It is designed to test clinical skill performance and competence such as communication skills with patients or other healthcare providers.

14. Many drug information sources are now available on computers and smart phones (Lexicomp, Micromedex and Medscape). These sources have the advantages of being mobile and accessible without internet availability.

STUDENT LEARNING OUTCOMES MATRIX

An alignment matrix of the **program** ILOs of the Bachelor of Pharmacy, the **course** ILOs and knowledge, skills and competencies as mentioned in the Jordan National Qualifications Framework (JNQF)

Field according to (JNQF)	Required to achieve (according to (JNQF)	Core curriculum learning outcomes	B.Sc. Pharmacy Program ILOs	Course Objectives (1-14 as below)	Course Student ILOs (A-T as below)	Assessment Method
			Main Domain*	**1-14**	**A-T**	
Knowledge	A systematic understanding of the theories, concepts, principles and circulations related to the field of learning, some of which are within the limits of the latest scientific findings	Foundational Knowledge	- Learner	1, 2, 3, 4, 5	a, b, c, d, j	- Exams - Quizzes - Seminar - Case studies - Role play - Intervention form
Skills	Mastering the skills and tools required to solve complex problems in a specialized field of study Demonstrate specialized and conceptual skills in the field of study Practice evaluation in planning, design, technical and/or supervisory functions related to products, services or processes	Essentials for Practice and Care	- Caregiver - Manager - Promoter - Provider	2, 6, 11 8, 13, 14 12 13	e, f, g, h, i e, f, g, n, o, s k, l, p, q, p, r	- Exams - Quizzes - Seminar - Case studies - Role play - Intervention form
		Approach to Practice and Care	- Creative Thinker & Problem-Solver - Educator - Advocate - Collaborator - Includer - Communicator	2, 7, 8 9 …… 10, 14 …… 9, 10	h, m, o, s, t k, l …….. g, m, n …… k, l, o, r	- Exams - Quizzes - Seminar - Case studies - Role play - Intervention form
Competencies	Management of activities and projects Take responsibility for decision-making in work or study contexts Take responsibility for group work and work effectively with peer guidance Transfer and apply diagnostic and creative skills in a range of contexts	Personal & Professional Development	- Self-aware - Leader - Innovator - Professional	12, 13, 14 11, 13, 14 13 11, 13, 14	s m, n s, t m, n, o	- Exams - Quizzes - Seminar - Case studies - Role play - Intervention form
		Pharmaceutical Product Expert	- Manufacturer			- Exams - Quizzes - Seminar - Case studies - Role play - Intervention form

Course Objectives**

After course completion students will be able to:

1. Understand the role of pharmacists in the ambulatory and hospital care settings.
2. Integrate basic pharmaceutical and biomedical knowledge into the therapeutic decision-making process.
3. Identify any missing information upon receipt of a prescription or medication order.
4. Demonstrate familiarity with brand and generic drug names, packaging, manufacturer, drug store, strength, dosage form(s), route of administration and price for the drug classes used to treat conditions covered in this course.
5. For any encountered prescription medication, determine whether a generic product is available.
6. Demonstrate the ability to process an outpatient prescription completely, accurately and efficiently.
7. Accurately and in a timely manner perform calculations used in pharmacy practice.
8. Manage medication therapy.
9. Communicate appropriate information about medications.
10. Display effective communication skills during interactions with patients, coworkers, and other healthcare professionals.
11. Display a cheerful, positive attitude about the practice of pharmacy and the ability to problem-solve.
12. Distinguish health and wellness services that pharmacists provide.
13. Begin to employ strategies in pharmacy practice to ensure patient safety.
14. Begin to assist patients or caregivers to obtain prescription medication in an affordable manner that meets their healthcare needs.

Course Intended Learning Outcomes** (ILOs)

a. Demonstrate the ability to obtain all the required information needed to know a patient medication profile .
b. Completely, accurately and efficiently perform all steps involved in processing an outpatient prescription (interpretation, selection of product, packaging and labeling).
c. Demonstrate accuracy and timeliness in the mathematical computation of ingredient amounts, doses, infusion rates, or any relevant calculation encountered at the practice site.
d. Identify potential patient's therapeutic problems and health-related needs.
e. Design potential solutions for patient's medication-related problems and follow up to determine whether the problems were resolved.
f. Generate logical and timely requests to prescribers about optimization of a patient's drug therapy (as review prescriptions for their suitability to the patient's age, weight,

diagnosis and other medications and provide appropriate (therapeutic) interventions related to dosing regimens, drug selection, monitoring (safety and efficacy), adverse drug reactions and drug interactions).

g. Demonstrate the ability to provide recommendations to healthcare providers, customers, and patients on therapeutic alternatives from the commercial options available based on patient's altered pharmacokinetics, drug interactions, drug-food interactions, adverse drug reactions, cost, patient preference and satisfaction of a treatment.

h. Acquire the skills to effectively respond to symptoms in the community pharmacy through observation, structured questioning (signs & symptoms, drug & medical history) and decision-making.

i. Show the ability to distinguish between minor, self-limiting conditions (suitable for OTC management) and potentially more serious illnesses (require referral).

j. Illustrate a good understanding of some important hospital medications and their roles in patient care like antibiotics for hospital-acquired infections.

k. Adequately counsel a patient about basic drug-related information (name of drug, indication, directions, length of use, side effects, storage, missed dose) after ascertaining what the patient already knows about the medication.

l. Communicate with patients about non-prescription drug products, devices, and diagnostics.

m. Demonstrate the ability to gracefully accept direction and criticism from others even during periods of heavy work volume or other stress-inducing circumstances. Direct problems with coworkers, supervisors or other personnel to the person involved, rather than to individuals not involved with the problem.

n. Be prompt and appear neat and cheerful; display a positive attitude; adjust adequately to new or unexpected situations; and display a willingness to work in a collegial fashion with pharmacists, technicians, and other healthcare practitioners.

o. When dealing with more than one problem at a time, demonstrate an adequate ability to triage problems, ask appropriate questions, and respond with accurate information.

p. Participate in a health/wellness activity provided by the site, the school, or another organization.

q. Identify a patient in need of vaccination.

r. Obtain patient information useful for medication monitoring.

s. Review a pharmacy's workflow to identify systems in place to prevent errors and recommend methods that could improve existing systems.

t. Demonstrate creative decision making when facing novel problems or challenges.

*: Please refer to The Faculty of Pharmaceutical Sciences Web address (https://hu.edu.jo/en/facnew/?unitid=58000000) for the detailed program ILOs (main domains and sub-domains).

**: Some course objectives and ILOs are adapted from: Glass A., and Lancaster M. Introductory Community Pharmacy Experience PHARMP 511–514 Student Syllabus. University of Washington School of Pharmacy. Available from: https://sop.washington.edu/wp-content/uploads/PharmP_511-514_Student_Guide.pdf

ACADEMIC SUPPORT

It is The Hashemite University policy to provide educational opportunities that ensure fair, appropriate and reasonable accommodation to students who have disabilities that may affect their ability to participate in course activities or meet course requirements. Students with disabilities are encouraged to contact their instructor to ensure that their individual needs are met. The University through its Special Need section will exert all efforts to accommodate for individual's needs.

Special Needs Section:

Tel: **00962-5-3903333 Extension: 4209**
Location: **Students Affairs Deanship/ Department of Student Welfare Services**
Email: **amalomoush@hu.edu.jo**
amalomoush@staff.hu.edu.jo

COURSE REGULATIONS

Participation

Class participation and attendance are important elements of every student's learning experience at The Hashemite University, and the student is expected to attend all classes. A student should not miss more than 15% of the classes during a semester. *Those exceeding this limit of 15% will receive a failing grade regardless of their performance*. It is a student's responsibility to monitor the frequency of their own absences. **Attendance record begins on the first day of class irrespective of the period allotted to drop/add and late registration. It is a student's responsibility to sign-in; failure to do so will result in a non-attendance being recorded.**

In exceptional cases, the student, with the instructor's prior permission, could be exempted from attending a class provided that the number of such occasions does not exceed the limit allowed by the University. The instructor will determine the acceptability of an absence for being absent. A student who misses more than 25% of classes and has a valid excuse for being absent will be allowed to withdraw from the course.

On average, students need to spend 15 hrs of study and preparation weekly. At the beginning of the lectures, students should be on time and should not leave before the end of the lecture without an accepted excuse. **If the student missed a class, it is him/her responsibility to find out about any announcements or assignments they have missed.** For any clarification, students should communicate with their instructor at her posted office hours or by appointment. Students should listen well to the lecture, if anyone has a question, he/she should ask the instructor. Students can find the course material at the course Microsoft team/Model after the lecture.

This course is described as follow:

- Students will be trained in their community pharmacy in the summer semester for 8 hours/day and 4 days/week. They have one day/week (3 hours) for discussions and evaluations with their instructor at the university.

- The instructor will meet with all students on the first day of the semester to introduce the course outline, describe the course requirements and assign the required course topics to the students.

- Students are divided into an appropriate number of groups/section.

- Students are expected to be in the pharmacy that they are registered in for the whole duration of their training hours. The instructor checks regularly the attendance of every student in the registered pharmacy. If the student is being missed twice, he/she will be dismissed from the course.

- Students are expected to read and prepare for each week topic before meeting with their instructor at the designated day of the week for topic and case scenario presentations, patient education and a weekly quiz. They are also expected to review each week related medications (their uses, CIs, DIs, ADRs, monitoring parameters) and familiarize themselves with the generic and trade names, available formulations, drug store, manufacturer and cost and keep an eye on them in the pharmacy they are practicing in. Meetings with the instructor are scheduled to be at predetermined days according to the students' sections.

- For the oral presentations (Appendix 1), the students/group/section (~ 6-7 students) are expected to choose a "group leader" from them to coordinate with the other groups' leaders of the other sections about the distribution of their assigned week sub-topics on the groups' members. Students (~4-8) from ALL sections that are assigned to prepare the same sub-topic should coordinate between each other to prepare the seminar report and slides. Every student should have his/her own table of examples/photos from his/her pharmacy. Students should send their PowerPoint slides to the instructor (at the provided e-mail address) by 20:00 (8:00 pm) two days before their case presentation (e.g. every Sunday for a Tuesday section).

- For the patient education activity (Appendix 2), the groups' leaders of the 4 sections assigned to the same topic will coordinate between each other to submit their choices of the drugs for the patient education activity to the instructor. Students per group per section should cooperate together to do a role play of patient counselling where one will be the patient and the other the pharmacist. Students per group should choose their drugs which are used for the treatment of the conditions covered in the week they are presenting their topics in. These drugs should be approved by the instructor. Each student in the group is required to individualize his/her patient education session to a specific patient (the student provides a brief summary of the patient case which is either real or proposed by them). Each group is required to role play the session of education with all students taking participation and no more than 10 minutes/one student. Example, ~ 1:0-1:15 hours for one group of students (6-7)/section every week.

- For the intervention form (Appendix 3), every student is required to fill in an intervention form according to the PCNE 9.1 classification regarding an encountered medication-related problem during his/her training.

Sharing of course materials is forbidden. No course material including, but not limited to, course outline, lecture hand-outs, videos, exams, and assignments may be shared online or with anyone outside the class. Any suspected unauthorized sharing of materials, will be reported to the university's Legal Affairs Office. If a student violates this restriction, it could lead to student misconduct procedures.

Plagiarism

Plagiarism is considered a serious academic offence and can result in your work losing marks or being failed. HU expects its students to adopt and abide by the highest standards of conduct in their interaction with their professors, peers, and the wider University community. As such, a student is expected not to engage in behaviours that compromise his/her own integrity as well as that of The Hashemite University.

Plagiarism includes the following examples, and it applies to all student assignments or submitted work:

- **Use of the work, ideas, images or words of someone else without his/her permission or reference to them.**
- **Use of someone else's wording, name, phrase, sentence, paragraph or essay without using quotation marks.**
- **Misrepresentation of the sources that were used.**

The instructor has the right to fail the coursework or deduct marks where plagiarism is detected

Missed Assessments

In all cases of assessment, students who fails to attend an exam on the scheduled date without prior permission, and/or are unable to provide a medical note, will automatically receive a failure .grade for this part of the assessment

• In cases where a student misses an assessment on account of a medical reason or with prior permission; in line with university regulations an incomplete grade for the specific assessment will be awarded and an alternative assessment or extension can be arranged.

Cheating

Cheating, academic disconduct, fabrication and plagiarism will not be tolerated, and the university policy will be applied. Cheating policy: The participation, the commitment of cheating will lead to applying all following penalties together:

- Failing the subject, he/she cheated at
- Failing the other subjects taken in the same course
- Not allowed to register for the next semester
- The summer semester is not considered as a semester

Student Complaints Policy

Students at The Hashemite University have the right to pursue complaints related to faculty, staff, and other students. The nature of the complaints may be either academic or non-

academic. For more information about the policy and processes related to this policy, you may refer to the students' handbook.

COURSE ASSESSMENT

Course Calendar and Assessment

Students will be graded through the following means of assessment:

Assessment	Grade Weighting	Deadline Assessment
Pharmacist Evaluation	**5%**	At the end of the training period Once/student/semester
Weekly Quizzes (at somepoint during our weekly meeting)	**10%**	Every week starting from week 3 Once/student/week
Patient Education Activity (please see appendix 2)	**5%**	During the semester Once/student/semester
Student's Oral Presentation (scientific, commercial, dissecting a prescription) (Please see appendix 1)	**15%** (5% on the presentation report and 10% on the ppt presentation)	Once/student/semester
Other Activities (Intervention Form - Please see appendix 3)	**5%**	Once/student/semester
Midterm Exam	**20%**	Once/student/semester: A midterm exam at the end of the 5th week
Final Exam	**40%**	~ 8th week Once/student/semester

Description of Exams
Test questions will predominately come from material presented in the lectures and the lectures themselves. Semester exams may be conducted during the regularly scheduled lecture period. Exam may consist of a combination of multiple choice, short answer, match, true and false, and/or descriptive questions.

Every student will be examined by a midterm exam in all the topics that have been covered in the previous weeks. The final exam date will be determined by the university.

The midterm and final exams will test students' theoretical knowledge of the topics that were covered and discussed during the course.

Quizzes: Unannounced quizzes will be given during or/and at the end of each chapter based upon the previous lectures. It will enforce that you come prepared to the class.

No make-up exams will be given. Only documented absences will be considered as per HU guidelines. Make-up exams may be different from regular exams in content and format.

Grades are not negotiable and are awarded according to the following criteria:

Letter Grade	Description	Grade Points
A+	Excellent	4.00
A		3.75
A-		3.50
B+	Very Good	3.25
B		3.00
B-		2.75
C+	Good	2.50
C		2.25
C-		2.00
D+	Pass	1.75
D	Pass	1.50
F	Fail	0.00
I	Incomplete	-

WEEKLY LECTURE SCHEDULE AND CONTENT DISTRIBUTION

"Lecture hours and weeks are approximate and may change as needed"

Note: For the 2 lecture periods per week (S/T, M/W), one lecture period covers 1.5 lecture hours (75 minutes). The course content specifies chapters of the textbook that will be included in exams.

Introduction **Introduction to Community Pharmacy Course Outline**	**Week 1**	**Lecture 1**
Topic 1 **Part 1 of antimicrobials (All antibacterial agents)** •	**Week 2**	**Lecture 2**
Topic 2 **Part 2 of antimicrobials** • Antifungal agents • Antiviral agents • Antimycobacterial agents • Antiprotozoal agents	**Week 3**	**Lecture 3**
Topic 3 • Pain killers: opioids, NSAID, paracetamol • Medications used for RA • Medications used for gout • Steroids	**Week 4**	**Lecture 4**
Topic 4 • Dermatologic agents • Ophthalmic agents	**Week 5**	**Lecture 5**

Topic 5	**GI agents** • Antidiarrheal • Antiemetics • Laxatives • Ulcer and GERD drugs • Antispasmodics • Medications for IBD	**Week 6**	**Lecture 6**
Topic 6	**Miscellaneous topics** • Weight control products • Vitamins and herbals • Medications for osteoporosis • Baby Formula • Medications to treat anemia • Medicated hair shampoos	**Week7**	**Lecture 7**
Review		**Week 14**	**Lecture 30**
University Final Exams		**Week 15**	

Appendix 1: Oral Presentation Assessment Rubrics

Element (% weight)	Excellent			Satisfactory			Needs Improvement			Point out of 10	Domain's score (Point X (60 X % of domain))/ 10
	9- 10	8	7	6	5	4	3	2	1		
Organization (10%)	▪ There is a logical sequence of information. ▪ Title slide and closing slide are included appropriately.			▪ There is some logical sequence of information. ▪ Title slide and closing slides are included.			▪ There is little or no logical sequence of information. ▪ Title slide and/ or closing slides are not included.				
Slide Design (text, colors, background, illustrations, size, titles, subtitles) (25%)	▪ Presentation is attractive and appealing to viewers (Clear and concise: did not contain too much information, Format (Lines, font, colors, etc), The slides used key words rather than sentences, Comprehensive information)			▪ Presentation is somewhat appealing to viewers.			▪ Little to no attempt has been made to make presentation appealing to viewers.				
Content (The opening got my attention, The introduction told me what to expect from the presentation, Clear structure (Introduction, body, conclusion, closing strong final line or idea) (25%)	▪ Presentation covers topic completely and in depth (Pharmacological review Therapeutic guidelines or algorithms (if present) Drug - Drug Interactions (Drug – food, Drug - tests) Hits of quality information, which is specialised to professional pharmacists References) ▪ Information is clear, appropriate, and accurate.			▪ Presentation includes some essential information. ▪ Some information is somewhat confusing, incorrect, or flawed.			▪ Presentation includes little essential information. ▪ Information is confusing, inaccurate, or flawed.				
	▪ Spelling, grammar, usage,			▪ There are minor			▪ There are persistent errors in				

Language **(10%)**	and punctuation are accurate ▪ Fluent and effective	problems in spelling, grammar, usage, and/or punctuation.	spelling, grammar, usage, and/or punctuation. ▪ Less or not fluent and effective.		
Delivery (Engaged speaker (relaxed and the voice [tone, pace, volume] reflects the speaker connection to what he/she is saying). **(20%)**	▪ Ideas were communicated with enthusiasm, proper voice projection and clear delivery. ▪ There was sufficient eye contact with audience. ▪ There were sufficient use of other non-verbal communication skills. ▪ Appropriate delivery pace was used (Timing - on time and timing through the whole presentation).	▪ There was some difficulty communicating ideas due to voice projection, lack of preparation, incomplete work, and/or insufficient eye contact. ▪ Insufficient use of non-verbal communication skills. ▪ Delivery pace is somewhat appropriate.	▪ There was great difficulty communicating ideas due to poor voice projection, lack of preparation, incomplete work, and/or little or no eye contact. ▪ No use of non verbal communication skills. ▪ Inappropriate delivery pace was used.		
Interaction with Audience **(10%)**	▪ Answers to questions are coherent and complete. ▪ Answers demonstrate confidence and extensive knowledge.	▪ Most answers to questions are coherent and complete. ▪ Answers somehow demonstrate confidence and extensive knowledge.	▪ Answers to questions are neither coherent nor complete. ▪ Is tentative or unclear in responses.		
	Total Score = Sum of domain's score/ 6				

<u>Important note:</u> students should send their seminar report and powerpoint slides to the instructor (at the e-mail address provided) by 20:00 (8:00 pm) two days before their talk (e.g. every Sunday for a Tuesday section).

Appendix 2: Patient Education

Marking criteria	Points (5)
Corrrect information	2
Clear information	1
Comprehencive information	1
Engaged speaker (relaxed and the voice [tone, pace, volume] reflects the speaker connection to what he/she is saying)	1

Appendix 3

Intervention Form

(Based on PCNE 9.1 classifcation of DRPs)

To be filled out from the case scenarios/prescriptions/issues encountered during your community pharmacy training and after the case being approved by your instructor. Make sure to attache any related prescription(s)/other documents to this fom and to sign it by the pharmacist-in-charge. Please send the completed form to the instructor's e-mail address provided no later than the pre-announced deadline.

a. Please provide a brief description of the case scesnario/issue you encountered during your training in the space below.

   ……
   ……
   ……
   ……
   ……
   ……

b. Medication-related problem(s): (1 point) – Table 2
   Code of sub-domain: ……
   Problem: ……

c. The cause(s): (1 point) – Table 3
   Code of sub-domain: ……
   Cause: ……

d. The palnned interventions: (1 point) – Table 4
   Code of sub-domain: ……
   Intervention: ……

e. Acceptance of the interventions: (1 point) – Table 5
   Code of sub-domain: ……
   Implementation: ……

f. Status of DRP: (1 point) – Table 6
   Code of sub-domain: ……
   Outcome of intervention: ……

Pharmacist-in-charge signature and the pharmacy stamp: ……

Date: ……

PCNE (Pharmaceutical Care Network Europe) Classification for Drug-Related Problems V9.1

The current version is V9.1, which has been developed after a validation round and an expert workshop in February 2020.

The classification is for use in research into the nature, prevalence, and incidence of DRPs and also in experimental studies of Pharmaceutical Care outcomes. It is also meant to help health care professionals to document DRP-information in the pharmaceutical care process.

The following is the official PCNE-DRP definition:

"A Drug-Related Problem is an event or circumstance involving drug therapy that actually or potentially interferes with desired health outcomes".

The basic classification → sub-domains as explanatory for the principal domains:

1. Problems (3 primary domains) → 6 grouped sub domains
2. Causes (9 primary domains) → 38 grouped sub domains
3. Planned Interventions (5 primary domains) → 17 grouped sub domains
4. Level of acceptance of interventions (3 primary domains) →10 subdomains
5. Status of the problem (4 primary domains) → 7 sub domains

Table 1

The basic classification

	Code V9.1	Primary domains
Problems (also potential)	**P1**	**Treatment effectiveness** There is a (potential) problem with the (lack of) effect of the pharmacotherapy
	P2	**Treatment safety** Patient suffers, or could suffer, from an adverse drug event
	P3	**Other**
Causes (including possible causes for potential problems)	**C1**	**Drug selection** The cause of the DRP can be related to the selection of the drug
	C2	**Drug form** The cause of the DRP is related to the selection of the drug form
	C3	**Dose selection** The cause of the DRP can be related to the selection of the dosage schedule
	C4	**Treatment duration** The cause of the DRP is related to the duration of treatment
	C5	**Dispensing** The cause of the DRP can be related to the logistics of the prescribing and dispensing process
	C6	**Drug use process** The cause of the DRP is related to the way the patient gets the drug administered by a health professional or carer, in spite of proper instructions (on the label)
	C7	**Patient related** The cause of the DRP can be related to the patient and his behaviour (intentional or non-intentional)
	C8	**Patient transfer related** The cause of the DRP can be related to the transfer of patients between primary, secondary and tertiary care, or transfer within one care institution.
	C9	**Other**
Planned Interventions	**I0**	**No intervention**
	I1	**At prescriber level**
	I2	**At patient level**
	I3	**At drug level**
	I4	**Other**
Intervention Acceptance	**A1**	**Intervention accepted**
	A2	**Intervention not accepted**
	A3	**Other**
Status of the DRP	**O0**	**Problem status unknown**
	O1	**Problem solved**
	O2	**Problem partially solved**
	O3	**Problem not solved**

Table 2

The Problems

Primary Domain	Code V9.1	Problem
1.Treatment effectiveness There is a (potential) problem with the (lack of) effect of the pharmacotherapy.	**P1.1** **P1.2** **P1.3**	No effect of drug treatment despite correct use Effect of drug treatment not optimal Untreated symptoms or indication
2. Treatment safety Patient suffers, or could suffer, from an adverse drug event. *N.B. If there is no specific cause, skip Causes coding.*	**P2.1**	Adverse drug event (possibly) occurring
3. Other	**P3.1**	Unnecessary drug-treatment
	P3.2	*Unclear problem/complaint. Further clarification necessary (please use as escape only)*

Table 3

The Causes (including possible causes for potential problems)

[N.B. One problem can have more causes]

	Primary Domain	Code V9.1	Cause
Prescribing & drug selection	**1. Drug selection** The cause of the (potential) DRP is related to the selection of the drug (by patient or health professional)	**C1.1**	Inappropriate drug according to guidelines/formulary
		C1.2	No indication for drug
		C1.3	Inappropriate combination of drugs, or drugs and herbal medications, or drugs and dietary supplements
		C1.4	Inappropriate duplication of therapeutic group or active ingredient
		C1.5	No or incomplete drug treatment in spite of existing indication
		C1.6	Too many different drugs/active ingredients prescribed for indication
	2. Drug form The cause of the DRP is related to the selection of the drug form	**C2.1**	Inappropriate drug form/formulation (for this patient)
	3. Dose selection The cause of the DRP is related to the selection of the dose or dosage	**C3.1**	Drug dose too low
		C3.2	Drug dose of a single active ingredient too high
		C3.3	Dosage regimen not frequent enough
		C3.4	Dosage regimen too frequent
		C3.5	Dose timing instructions wrong, unclear or missing
	4. Treatment duration The cause of the DRP is related to the duration of treatment	**C4.1**	Duration of treatment too short
		C4.2	Duration of treatment too long
Disp	**5. Dispensing** The cause of the DRP is related to the logistics of the prescribing and dispensing process	**C5.1**	Prescribed drug not available
		C5.2	Necessary information not provided or incorrect advice provided
		C5.3	Wrong drug, strength or dosage advised (OTC)
		C5.4	Wrong drug or strength dispensed
Use	**6. Drug use process** The cause of the DRP is related to the way the patient gets the drug administered ***by a health professional or other carer***, despite proper dosage instructions (on label/list)	**C6.1**	Inappropriate timing of administration or dosing intervals by a health professional
		C6.2	Drug under-administered by a health professional
		C6.3	Drug over-administered by a health professional
		C6.4	Drug not administered at all by a health professional
		C6.5	Wrong drug administered by a health professional
		C6.6	Drug administered via wrong route by a health professional
	7. Patient related The cause of the DRP is related to the patient and his behaviour (intentional or non-intentional)	**C7.1**	Patient intentionally uses/takes less drug than prescribed or does not take the drug at all for whatever reason
		C7.2	Patient uses/takes more drug than prescribed
		C7.3	Patient abuses drug (unregulated overuse)
		C7.4	Patient decides to use unnecessary drug
		C7.5	Patient takes food that interacts
		C7.6	Patient stores drug inappropriately
		C7.7	Inappropriate timing or dosing intervals
		C7.8	Patient unintentionally administers/uses the drug in a wrong way
		C7.9	Patient physically unable to use drug/form as directed
		C7.10	Patient unable to understand instructions properly
Seamles	**8. Patient transfer related** The cause of the DRP can be related to the transfer of patients between primary, secondary and tertiary care, or transfer within one care institution.	**C8.1**	Medication reconciliation problem
	9. Other	**C9.1**	No or inappropriate outcome monitoring (incl. TDM)
		C9.2	Other cause; specify
		C9.3	No obvious cause

Table 4

The Planned Interventions

N.B. One problem can lead to more interventions

Primary Domain	Code V9.1	Intervention
No intervention	**I0.1**	No Intervention
1. At prescriber level	**I1.1**	Prescriber informed only
	I1.2	Prescriber asked for information
	I1.3	Intervention proposed to prescriber
	I1.4	Intervention discussed with prescriber
2. At patient level	**I2.1**	Patient (drug) counselling
	I2.2	Written information provided (only)
	I2.3	Patient referred to prescriber
	I2.4	Spoken to family member/caregiver
3. At drug level	**I3.1**	Drug changed to …
	I3.2	Dosage changed to …
	I3.3	Formulation changed to …
	I3.4	Instructions for use changed to …
	I3.5	Drug paused or stopped
	I3.6	Drug started
4. Other intervention or activity	**I4.1**	Other intervention (specify)
	I4.2	Side effect reported to authorities

Table 5

Acceptance of the Intervention proposals

N.B. One status of acceptance per intervention proposal

Primary domain	Code 9.1	Implementation
1. Intervention accepted (by prescriber or patient)	**A1.1**	Intervention accepted and fully implemented
	A1.2	Intervention accepted, partially implemented
	A1.3	Intervention accepted but not implemented
	A1.4	Intervention accepted, implementation unknown
2. Intervention not accepted (by prescriber or patient)	**A2.1**	Intervention not accepted: not feasible
	A2.2	Intervention not accepted: no agreement
	A2.3	Intervention not accepted: other reason (specify)
	A2.4	Intervention not accepted: unknown reason
3. Other (no information on acceptance)	**A3.1**	Intervention proposed, acceptance unknown
	A3.2	Intervention not proposed

Table 6

Status of the DRP

N.B. This domain depicts the outcome of the intervention. One problem (or the combination of interventions) can only lead to one level of solving the problem

Primary Domain	Code V9.1	Outcome of intervention
0. Not known	**O0.1**	Problem status unknown
1. Solved	**O1.1**	Problem totally solved
2. Partially solved	**O2.1**	Problem partially solved
3. Not solved	**O3.1**	Problem not solved, lack of cooperation of patient
	O3.2	Problem not solved, lack of cooperation of prescriber
	O3.3	Problem not solved, intervention not effective
	O3.4	No need or possibility to solve problem