Course Detailed Description – Procedures of the Course Plan Committee /Faculty of Pharmacy

<table>
<thead>
<tr>
<th>Department</th>
<th>Pharmacy</th>
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<thead>
<tr>
<th>Course Name</th>
<th>Pharmacognosy</th>
<th>Course No.</th>
<th>0201215</th>
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<tbody>
<tr>
<td>Prerequisite</td>
<td>Biology &amp; Pharmaceutical Organic Chemistry-2-</td>
<td>Credit Hours</td>
<td>2</td>
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<tr>
<td>Number &amp; date of course plan approval</td>
<td>2016-2017</td>
<td>Brief Description</td>
<td>See form QF02/0409</td>
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**Course Objective**

This course will provide students with general knowledge of crude drugs associated with allopathic medicine. Have sufficient knowledge in plant morphology and plant anatomy to be able to read and understand scientific literature in pharmacognosy with scientific descriptions of plants and crude drugs. Special emphasis is made on study of crude drugs derived from medicinal plants:- their morphological organs, origin, history, cultivation, collection, preparation, morphological and histological characters, constituents, adulterants, allied drugs and uses.

**Intended Learning Outcomes**

Upon completion of the course, the student shall be able to know.

1. Botanical nomenclature, general and arabic names of most medicinal plants from which crude drugs are derived.
2. Methods of cultivation, collection and preparation of medicinal plants intended as a source for crude drugs; and factors affecting their production.
3. The general macroscopical and microscopical characters of the different morphological organs from plants.
4. Ability to identify and differentiate between crude drugs, based on their, macroscopical and microscopical characters with limited knowledge on their chemical nature.
5. The main active constituents and uses of crude drugs.
6. The basis for the identification of plant drugs and from this the detection of adulterated and poor quality (Quality Control of Plant Drugs) using the microscope.

**Course Topics**

1. Preparation of crude drug from Plants.
2. Special emphasis is made on study of crude drugs derived from medicinal plants, their morphological organs, origin, history, cultivation, collection, preparation, morphological and histological characters, constituents, adulterants, allied drugs and uses.
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### Text Books


### References


### Grade Determination

<table>
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<tr>
<th>Grade Determination</th>
<th>1st Exam = 25%</th>
<th>Practical Course Grade Determination</th>
<th>Course Work = 50% (Reports, Term Papers, Quizes)</th>
<th>Final Exam = 50%</th>
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### Course Outline

<table>
<thead>
<tr>
<th>Week</th>
<th>Hours</th>
<th>Subjects</th>
<th>Chapters in Textbook</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td><strong>Introduction.</strong> Definition of pharmacognosy. Scheme for pharmacognostic studies of natural drugs. Crude drugs, Herbalist, Medicinal and Aromatic plants.</td>
<td>Trease and Evans Chapter 1 T. E. Wallis Chapter 1</td>
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<td>2</td>
<td>1</td>
<td><strong>Ergastic cell contents.</strong> Cellulose, Hemicellulose, Lignin, Cutin, Suberin, Mucilage, Starch, Protein, Calcium carbonate, Fixed oils &amp; Fats, Volatile oils and Resins, Tannins, Alkaloids, Glycosides and Calcium oxalate crystals.</td>
<td>Trease and Evans Chapter 8</td>
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<td>3</td>
<td>1</td>
<td><strong>Cell Differentiation.</strong> - Tissue and tissue systems. - Dermal tissue system (Epidermis, Stomata, Trichomes and Cork). - Vascular tissue systems (Xylem and phloem [Vessels, Fibers, Tracheids, Sieve tube &amp; companion cells and Secretory glands]). - Ground tissue system (Parenchyma, Collenchyma and Sclerenchyma).</td>
<td>Trease and Evans Chapter 8</td>
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<td>4</td>
<td>1</td>
<td><strong>Adulteration of crude drugs.</strong> - Reasons behind adulteration of crude drugs 1. Faulty of collection. 2. Imperfect preparation. 3. Incorrect storage. -Methods of adulteration of crude drugs (Sophistication, Substitution, Admixture, Deterioration, Inferiority and Addition of worthless heavy materials).</td>
<td>T. E. Wallis Chapter 19</td>
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<tr>
<td>5</td>
<td>1</td>
<td><strong>The Leaves.</strong> - The leaf. - Phyllotaxy and types of leaves.</td>
<td>Trease and Evans Chapter 5</td>
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</table>
| 6  | 1  | - Macroscopical characters of leaves.  
- Microscopical characters of leaves.  
Complete pharmacognostical studies  
(Origin, Family, Habitat, History, Cultivation,  
Collection, Processing for market, Morphological &  
Microscopical characters, Chemical constituents,  
Pharmacological action and Commercial varieties,  
Substitutes and Adulterants of some medicinal plants  
like: Senna, Digitalis, Buchu, Eucalyptus, Coca,  
Hamamelis, Tea, Mate, Sage, Melissa, Thymus,  
Peppermint, Belladona, Datura, Hyoscamus ……etc.  
T. E. Wallis  
Chapter 8 |  
| 7  | 1  | Flowers & inflorescences.  
- Flowers and Inflorescence.  
- Complete pharmacognostical studies of  
Clove flower bud, Chamomile, Santonica, Pyrethrum  
& Saffron …etc.  
Trease and Evans  
Chapter 5  
T. E. Wallis  
Chapter 9 |  
| 8  | 1  | The Seeds.  
- The seed.  
- Complete pharmacognostical studies of Nux-vomica,  
Strophanthus, Linseed, Funegreek, Coca, Nutmeg,  
and Colchicum …ets.  
Trease and Evans  
Chapter 5  
T. E. Wallis  
Chapter 10 |  
| 9  | 1  | The fruits.  
Complete pharmacognostical studies of Fennel,  
Anise, Caraway, Coriander, Ammi visnaga, Ammi  
majus, Star anise, Capsicum, Vanilla pod,  
Coclynth, Poppy capsule, Tamarind, Blanitis and  
Nigela sativa……etc.  
Trease and Evans  
Chapter 5  
T. E. Wallis  
Chapter 11 |  
| 10 | 1  | The Roots & Rhizomes (Subterranean organs).  
- Subterranean organs.  
- Complete pharmacognostical studies of Liquorice,  
Ginger, Rhubarb, Ipecacuanha, Aconite, Rowalfia,  
Ginseng, Turmeric, Squill, Garlic and Onion……etc.  
Trease and Evans  
Chapter 5  
T. E. Wallis  
Chapter 13 |  
| 11 | 1  | The barks & woods.  
- Complete pharmacognostical studies of  
Cinchona, Cinnamon, Cascara, Frangula, Wild cherry,  
Quillaia, Cassia, Salix, Guaiacum & Quassia …etc.  
Trease and Evans  
Chapter 5  
T. E. Wallis  
Chapters 6&7 |  
| 12 | 1  | The Herbs.  
- Herbs.  
- Complete pharmacognostical studies of  
Ergot, Ephedra, and Indian Hemp …etc.  
Trease and Evans  
Chapter 5  
T. E. Wallis  
Chapter 12 |  
| 13 | 1  | Unorganized drugs.  
- Unorganized drugs.  
- Resins (Asafetida, Myrrh, Ammoniacum, Galbanum  
- Balsams( Benzoin, Sumatra benzoin, Storax, Balsam  
tolu, Balsam peru )  
Trease and Evans  
Chapter 5  
T. E. Wallis  
Chapters 14, 15 & 16 |  
| 14 | 1  | - Gums.  
- Dried juice (Aloe ).  
- Dried extract( Agar- Agar, Gelatin ).  
- dried latex (Opium ).  
Trease and Evans  
Chapter 5  
T. E. Wallis  
Chapters 14, 15 & 16 |  
| 15 | 1  | Final Exam.  
Trease and Evans  
Chapter 5  
T. E. Wallis  
Chapter 15 & 16 |
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<thead>
<tr>
<th>Approved by Dept. Chair</th>
<th>Date of Approval</th>
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**Extra Information:** (Updated every semester and filled by course instructor)

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<thead>
<tr>
<th>Course Instructor</th>
<th>Iyad ahmad yamin</th>
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<tbody>
<tr>
<td>Office No.</td>
<td>219</td>
</tr>
<tr>
<td>Extension</td>
<td>313</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:Iyad.alsheikh@zuj.jo">Iyad.alsheikh@zuj.jo</a></td>
</tr>
<tr>
<td>Office hours</td>
<td>Sun. &amp; Tue. 12-1am Mon.&amp;Wed.12-2am</td>
</tr>
</tbody>
</table>