

## PHL 532

### BIOCHEMICAL TOXICOLOGY (2 + 1)

This course deals with the molecular mechanisms underlying the toxic effects of xenobiotics as well as their biotransformations in man and experimental animals.

#### Topics

#### Hours

-	Definitions & scope	1
-	Absorption & distribution	1
-	Metabolism of xenobiotics	6
-	Phase I reactions	
-	- Phase II reactions	
-	Factors affecting metabolism of xenobiotics	3
-	Excretion of xenobiotics	2
-	Hepatotoxicity	3
-	Renal Toxicity	3
-	Neurotoxicity	3
-	Pneumotoxicity	3
-	Trace elements toxicity	3

Total hours: 28 hr

**PHL 532 (Practical)**  
**Biochemical Toxicology**  
**(2 + 1)**

This practical part illustrates experimentally some of the concepts of biochemical toxicology such as drug metabolism, factors affecting drug metabolising enzymes and assessment of tissue injuries.

<b><u>Practical</u></b>	<b><u>Hours</u></b>
1. Preparation of tissue homogenates.	3
2. Drug metabolizing enzymes (Phase I). a) Assay of cytochrome P450. b) Assay of NADPH cytochrome C(P450) reductase. c) Assay of aniline-4-hydroxylase activity. d) Assay of aminopyrine-N-demethylase activity. e) Assay of 4-nitroanisole-O-demethylase activity.	9
3. Inducers and inhibitors of drug metabolising enzymes (Phase I):  a) Phenobarbitone-sleeping time under the effect of different xenobiotics.  b) Effect of some xenobiotics on <u>in vitro</u> N-demethylation.	6
4. Drug metabolizing enzymes (Phase II): a) Assay of glucuronyl transferase activity. b) Assay of glutathione-S-transferase activity.	3
5. Effects of xenobiotics on oxidative phosphorylation.	3
6. Assessment of liver injury.	3
7. Assessment of kidney injury.	3
8. Assessment of lung injury.	3
Examination (Two exams.)	6
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Total Lab. periods: 13