



# Course Specifications

<b>Course Title:</b>	<b>Integrated Laboratory Science</b>
<b>Course Code:</b>	<b>373420-3</b>
<b>Program:</b>	<b>Bachelor's in Clinical Laboratory Sciences (Level-7)</b>
<b>Department:</b>	<b>Clinical Laboratory Sciences</b>
<b>College:</b>	<b>Applied Medical Sciences</b>
<b>Institution:</b>	<b>Taif University</b>



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## A. Course Identification

<b>1. Credit hours: 3 hours</b>
<b>2. Course type</b>
a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/>
b. Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
<b>3. Level/year at which this course is offered: Level 8 / Fourth Year</b>
<b>4. Pre-requisites for this course (if any): None</b>
<b>5. Co-requisites for this course (if any): None</b>

## 6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	3 hours /week= 45 hours/semester	100%
2	Blended	None	0 %
3	E-learning	None	0 %
4	Correspondence	None	0 %
5	Other	None	0 %

## 7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
<b>Contact Hours</b>		
1	Lecture	45
2	Laboratory/Studio	None
3	Tutorial	None
4	Others (theory mid-term, Practical mid-term)	None
	<b>Total</b>	<b>45</b>
<b>Other Learning Hours*</b>		
1	Study	51
2	Assignments	10
3	Library	None
4	Projects/Research Essays/Theses	None
5	Others(homeworks + final exams)	10
	<b>Total</b>	<b>71</b>

\*The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

## B. Course Objectives and Learning Outcomes

### 1. Course Description

The Integrated laboratory science course accompanies and deepens the knowledge gained in all clinical laboratory disciplines by the students among the second, third and fourth academic years. It applies concepts that have been taught in evidence-based learning mood.

Furthermore, in this course the students will not follow a defined protocol, instead, they would develop the skills of scientific thinking; making observations, proposing a hypothesis of diagnosing, designing and performing of different assays to prove the hypothesis and confirm it.

### 2. Course Main Objective

Upon completing of this course:

The students will gain a flexibility to apply the different learnt sciences on various clinical situations. They will learn how to convert analytical data to a model, judge if the models “make sense” and learn how to communicate and present these data correctly. Moreover, The students also will gain a commitment to follow laboratory safety rules, recognize hazardous situations and be able apply laboratory procedures correctly.

### 3. Course Learning Outcomes

CLOs		Aligned PLOs
<b>1</b>	<b>Knowledge:</b>	
1.1	Recognize the role of basic medical integrative investigations and sciences in clinical practice.	<b>K2</b>
1.2	Identify different errors of analytical steps in multidisciplinary laboratory setting that lead to false results.	<b>K2</b>
<b>2</b>	<b>Skills :</b>	
2.1	Correlate multidisciplinary clinical laboratory data with the clinical manifestations of the disease and the risk factors.	<b>S2</b>
2.2	Design multidisciplinary dependent plans for analysis, diagnosis and researches of multi-risk factor diseases, under quality standards.	<b>S4</b>
<b>3</b>	<b>Competence:</b>	
3.1	Demonstrate competency in communication in clinical laboratory setting.	<b>C3</b>
3.2	Show critical thinking in using integrative knowledge to make evidence-based decisions.	<b>C4</b>

## C. Course Content

No	List of Topics	Contact Hours
1	Introduction to integrated basic clinical investigation sciences.	3
2	Application of Integrated laboratory sciences practices on evidence-based for laboratories investigations	3
3	Immunological cases discussion	3
4	Hematological cases discussion	6
5	Students oral discussion and presentation for specific case study	3
6	Microbiological cases discussion	6
7	Virological cases discussion	3
8	Parasitological cases discussion	3
9.	Students oral discussion and presentation for specific case study	3
10	Molecular biology cases discussion	6
11	Students oral presentation for specific case study	6
<b>Total</b>		45

## D. Teaching and Assessment

### 1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
<b>1.0</b>	<b>Knowledge:</b>		
1.1	Recognize the role of basic medical integrative investigations and sciences in clinical practice	- Lectures	- Exams
1.2	Identify basic errors in the pre-analytical and multidisciplinary laboratory setting that lead to false results.	- Lectures	- Exams
<b>2.0</b>	<b>Skills :</b>		
2.1	Correlate multidisciplinary clinical laboratory data with the clinical manifestations of the disease and the risk factors.	-Lectures. - Problem based learning.	- Exams
2.2	Design multidisciplinary dependent researches for analysis and diagnosis of multi-risk factor diseases.	-Lectures. - Student learning activities	- Assessment of scientific activities
<b>3.0</b>	<b>Competence:</b>		
3.1	Demonstrate competency in communication in clinical laboratory setting.	- Lectures - Group discussion	- Exams - Assessment of scientific activities
3.2	Show critical thinking in using integrative knowledge to make evidence-based decisions.	- Problem based learning - Research project	- Rubric - Exams

## 2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Activity 1	3 <sup>rd</sup> Week	10%
2	Activity 2	6 <sup>th</sup> Week	20%
3	Activity 3	11 <sup>th</sup> Week	20%
4	Final Presentation	14 <sup>th</sup> & 15 <sup>th</sup> Week	50%
5	Total		100%

\*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

## E. Student Academic Counseling and Support

**Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:**

- Course instructors are available for individual consultation in their free time. They are usually full-time permanent members present on-campus from 8:00 am to 2:30 pm on all working days. Appointments can be made in person with the instructor through email etc. Days and time availability of each instructor are posted on their doors. Course instructors provide a range of academic and course management advice including course planning and its progression.
- Each student at the department of Clinical Laboratory Sciences has an academic adviser who is available for individual consultation and guidance. Appointments can be made in person with the instructor through email etc. Days and time availability of each adviser are posted on their doors. The academic adviser can provide support with time management, exam preparation, clarification of subject requirements, feedback on performance and dealing with personal issues as well.

## F. Learning Resources and Facilities

### 1. Learning Resources

<b>Required Textbooks</b>	<b>Laboratory Medicine Diagnosis of Disease in Clinical Laboratory 2/E, Michael Laposata. A Manual of Laboratory and Diagnostic Tests</b>
<b>Essential References Materials</b>	None
<b>Electronic Materials</b>	Websites, Search engines (Saudi Digital Library, PubMed, Google Scholar) <a href="https://www.ascp.org/content">https://www.ascp.org/content</a>
<b>Other Learning Materials</b>	Journals, Scientific Magazines and Articles. <b>Journal of Laboratory and Clinical Medicine</b>

## 2. Facilities Required

Item	Resources
<b>Accommodation</b> (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms
<b>Technology Resources</b> (AV, data show, Smart Board, software, etc.)	Data show, Blackboard and A/V
<b>Other Resources</b> (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	None

## G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Student's feedback on effectiveness of teaching and quality of courses.	Students	Indirect: Questionnaire Survey at the end of each semester.
Alignment map of course ILOs with that of program ILOs.	Development and accreditation committee	Direct: Student's Performance.
Availability of learning resources, facilities and equipments related to each course.	Students and faculty	Indirect: Questionnaire Survey at the end of each semester.
Evaluation of teaching	Peer evaluators	Direct: Peer evaluation
Standard of student achievement	Examination Committee	Direct: Students grades
Periodical review of course effectiveness and planning for its improvement.	Teaching staff/ Development and accreditation committee	Indirect: Review by Department Committee

**Evaluation areas** (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

**Evaluators** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

**Assessment Methods** (Direct, Indirect)

## H. Specification Approval Data

Council / Committee	Department Meeting
Reference No.	Meeting No.10
Date	10-9-1440

