



Course Specifications

Course Title:	Blood Transfusion and Transplantation Sciences
Course Code:	373413-3
Program:	Bachelor's in Clinical Laboratory Sciences (Level-7)
Department:	Clinical Laboratory Sciences
College:	Applied Medical Sciences
Institution:	Taif University



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A. Course Identification

1. Credit hours: 3 hours
2. Course type 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"/>
3. Level/year at which this course is offered: Level 7 / Fourth Year
4. Pre-requisites for this course (if any): Clinical Immunology (373311-2)
5. Co-requisites for this course (if any): None

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	4 hours /week= 60 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
Contact Hours		
1	Lecture	30
2	Laboratory/Studio	30
3	Tutorial	None
4	Others (specify)	None
	Total	60
Other Learning Hours*		
1	Study	51
2	Assignments	10
3	Library	None
4	Projects/Research Essays/Theses	None
5	Others(specify)	10
	Total	71

*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

This course focuses on major and minor blood group systems that covered with emphasis on inheritance, principles of testing, terminology and problem recognition/resolution. In addition presents most commonly encountered blood group systems (other than ABO and Rh) with emphasis on genotypes, phenotypes, and antibody detection and identification. Blood bank test procedures, interpretation, and sources of error will be covered. Donor selection criteria, anticoagulants, indications and contraindications for transfusing various blood components, transfusion reactions and investigation of reactions will be discussed. Also this course concern with stem cell transplantation (SCT), sometimes referred to as bone marrow transplant, is a procedure in which a patient receives healthy stem cells to replace damaged stem cells.

2. Course Main Objectives

Upon successful completion of this course, the student should be able to:

Identify and describe the characteristics of the antigens and antibodies of the ABO, Rh, and other blood group systems, describe the preparation and use of blood components and the donor selection process. They should be able to perform and understand routine blood bank procedures utilized in pre-transfusion testing and demonstrate an understanding for intermediate level blood bank testing in the resolution of antibody problems, hemolytic disease of the newborn and transfusion reaction workups. They should be able to demonstrate improvement in the affective traits of organizational skills, work habits, attitude, interpersonal skills, and problem-solving ability. In addition to the previous student should able to recognize type of stem cell transplantation, procedures and techniques related to that.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge:	
1.1	Identify the characteristics of the antigens and antibodies of the ABO, Rh, and other blood group systems.	K2
1.2	State the intermediate level blood bank testing in the resolution of antibody problems, and transfusion reaction workups. the preparation and use of blood components, and stem cell transplantation procedure.	K2
2	Skills :	
2.1	Interpret results of tests done pre- and post-transfusion for donor and recipient.	S2
2.2	Demonstrate quality assurance measures in blood bank and stem cell transplantation	S3
3	Competence:	
3.1	Perform difficult manipulative skills such as invasive procedures and calibration of equipment in an efficient way.	C1
3.2	Demonstrate positive work ethics as well as professional attitude at work.	C2
3.3	Develop management skills for best utilization of time and resources within the blood bank laboratory.	C3

C (a) Course Content(Theory)

No	List of Topics	Contact Hours
1	ABO and H Blood Groups (1)	2
2	ABO and H Blood Groups (2)	2
3	Rh Blood Group System:	2
4	Other blood group systems (1)	2
5	Other blood group systems (2)	2
6	Blood Components in Transfusion Medicine(1)	2
7	Blood Components in Transfusion Medicine(2)	2
8	Blood Donors, Blood Collection & Storage	2
9	Adverse Blood Transfusion Reaction (1)	2
10	Adverse Blood Transfusion Reaction (1)	2
11	Blood Donation (1)	2
12	Blood Donation (2)	2
13	Hemolytic Disease of the New Born	2
14	Stem cell transplantation	2
15	Quality control in the Blood Bank	2
Total		30

(b) Course Content (Practical)

No	List of Topics	Contact Hours
1	An introduction to blood bank practical.	2
2	Detection of ABO blood group system by slide method.	2
3	Detection of ABO blood group system by tube method.	2
4	Detection of Rh blood group system by slid method.	2
5	Detection of Rh blood group system by tube method.	2
6	Detection of Subtypes A1, A2	2
7	Detection of H antigen	2
8	Detection of D ^u antigen	2
9	Cross matching	2
10	Antibodies identification test	3
11	Blood components	3
12	Blood Transfusion	3
13	Screening of Infectious diseases in blood bank	3
Total		30

D. Teaching and Assessment

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

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge		

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.1	Identify the characteristics of the antigens and antibodies of the ABO, Rh, and other blood group systems.	-Lectures	- Exams
1.2	State the intermediate level blood bank testing in the resolution of antibody problems, and transfusion reaction workups. the preparation and use of blood components, and stem cell transplantation procedure.	-Lectures -Practical sessions	- Exams - Lab reports
2.0	Skills		
2.1	Interpret results of tests done pre- and post-transfusion for donor and recipient.	- Lectures - Practical sessions -Problem base learning	- Exams - OSPE
2.2	Demonstrate quality assurance measures in blood bank and stem cell transplantation	- Lectures - Practical sessions	- Exams
3.0	Competence		
3.1	Perform difficult manipulative skills such as invasive procedures and calibration of equipment in an efficient way.	- Lectures - Practical sessions	- Exams - Lab reports
3.2	Demonstrate positive work ethics as well as professional attitude at work.	- Lectures - Research activities	- Exams - Assessment of Scientific activities
3.3	Develop management skills for best utilization of time and resources within the blood bank laboratory.	- Group discussion - Lectures - Practical sessions	- Exams - Presentations

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Mid-Term Exam	8 th Week	15%
2	Activity	Throughout the semester	5%
3	Practical Report	Throughout the semester	10%
4	Final Practical Exam	16 th Week	20%
5	Final Exam	17 th /18 th Week	50%
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

Required Textbooks	- Ian Todd, Gavin Spickett, lecture notes in immunology Six Edition (2000). - Frank Firkin, DeGrushi hematology in medical practice , fifth edition(2005)
Essential References Materials	None
Electronic Materials	Websites, Search engines (Saudi Digital Library, PubMed, Google Scholar)
Other Learning Materials	TRANSFUSION Journal http://www.aabb.org/programs/publications/Pages/transfusion.aspx

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms and Laboratories
Technology Resources (AV, data show, Smart Board, software, etc.)	Data show, Blackboard and A/V
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Blood bank laboratory established with different materials used in practical sessions

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 and	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

