



Undergraduate Assessment Record

Biochemistry

The TN Dr. M.G.R. Medical
University
Chennai

The Tamil Nadu Dr. M.G.R. Medical University
Chennai



Under Graduate Assessment Record

Department of Biochemistry

Preface

Competency based education implemented by this university is an outcome-based learning on a framework of competencies. The present system needs an ongoing and longitudinal assessment to identify the learning, enable learning opportunities and acquire the mandated competency. Consequently, this university is enabling this assessment record to decide if the learner has acquired the mandated competencies.

This assessment record is designed to collect and analyse data of a student's learning in relation to a required competency and the learners stage of training, based on - use of knowledge, technical skills, clinical reasoning, communication, emotions, values and reflection continuously and consistently and not isolated to the final examination.

As given in the MCI document on "Competency Based Assessment Module for Undergraduate Medical Education-2019" - "Informal assessments should happen during teaching-learning activities with the express purpose of finding out the stage of the student and taking corrective action in teaching-learning methodology on an ongoing basis. During lectures, small groups or seminars, use of techniques like clickers, one-minute papers and muddiest point provide valuable information to check understanding and provide developmental feedback. Same can be done during practical/clinical teaching using one-minute preceptor (OMP) or SNAPPS technique (Summarize history and findings, Narrow the differential; Analyse the differential; Probe preceptor about uncertainties; Plan management; Select case-related issues for self-study). Many of these do not need to be considered for pass/fail decisions but are useful to aid learning and acquire competencies. These can be planned by the teachers on a day to day basis and modified depending on the tasks at hand.

This Assessment Record for the Undergraduates is to be maintained by the Faculty of the concerned Department and shall be shown to the student during the feedback sessions and at the end of the course period. The Assessment Record should be retained in the Department until the student completes the course.

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1. University Norms for Assessment of the Course

a. Formative / Internal Assessment

No	Type of Assessment	Methods of Assessment	Total Marks	Min Pass Mark
1	Theory Component			
a	Theory Tests (Average of 8 Tests)	MCQ, VSAQ, SAQ, LAQ	40	
b	Formative Assessment	Assignments	10*	
		Integrated Sessions		
		Self-Directed Learning		
	Total		50	
2	Practical Component			
a	Practical (Average of 4 tests)	PE, OSPE, DOPS, Viva	40	
b	Formative Assessment	Early Clinical Exposure	10*	
		AETCOM Learning		
	Total		50	
	Grand Total		100	50

Note:

1. Internal assessment shall be based on day-to-day assessment. It shall relate to different ways in which learners participate in learning process including assignments, preparation for seminar, integrated classes, participation in ECE, AETCOM, SDL, Projects.
2. Regular periodic examinations shall be conducted throughout the course. There shall be no less than 8 internal assessment examinations and no less than 4 practical examinations.
3. In 1.b*, Assignments, Integrated sessions and Self-Directed Learning will be assessed independently for 10 Marks each. Their average is computed for 10 marks.
4. In 2.b*, Early Clinical Exposure and AETCOM Learning will be assessed independently for 10 Marks each. Their average is computed for 10 marks.
5. Day to day records and log book (including required skill certifications) should be given importance in internal assessment. Internal assessment should be based on competencies and skills. Colleges and teachers should try to build their valid assessment tools.
6. Learners must secure at least 50% marks of the total marks (combined in theory and practical / clinical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in a particular subject in order to be eligible for appearing at the final University examination of that subject. Internal assessment marks will reflect as separate head of passing at the summative examination.
7. Learners must have completed the required certifiable competencies for that phase of training and completed the log book appropriate for that phase of training to be eligible for appearing at the final university examination of that subject.
8. Feedback should be provided to learners throughout the course so that they are aware of their performance and remedial action can be initiated well in time. The feedbacks need to be structured and the faculty and learners must be sensitized to giving and receiving feedback.

9. The results of IA should be displayed on notice board within 2 weeks of the test and an opportunity provided to the learners to discuss the results and get feedback on making their performance better. Remedial measures for learners who are either not able to score qualifying marks or have missed on some assessments due to any reason(s) shall be allowed with a record.
10. It is also recommended that learners should sign with date whenever they are shown IA records in token of having seen and discussed the marks.
11. Internal assessment marks will not be added to University examination marks and will reflect as a separate head of passing at the summative examination.

b. Summative Assessment - University Examination

University examinations will consist of

1. Theory: 2 papers of 100 marks each. (Total 200 marks)
2. Practical Exam + Viva: 100 marks

Note:

1. Theory Examinations: Nature of questions will include different types such as structured essays (Long Answer Questions - LAQ), Short Answers Questions (SAQ) and objective type questions (e.g. Multiple-Choice Questions - MCQ). Marks for each part should be indicated separately. MCQs shall be accorded a weightage of not more than 20% of the total theory marks. In subjects that have two papers, the learner must secure at least 40% marks in each of the papers with minimum 50% of marks in aggregate (both papers together) to pass.
2. Practical/clinical examinations will be conducted in the laboratory/Dissection Hall. The objective will be to assess proficiency and skills to conduct experiments, interpret data and form logical conclusion. Emphasis should be on candidate's capability to demonstrate skills, write a description, analyse the case etc
3. Viva/oral examination should assess approach to problem solving, applied situations, attitudinal, ethical and professional values. Candidate's skill in interpretation of common investigative data, X-rays, identification of specimens, etc. is to be also assessed
4. Internal assessment marks are not to be added to marks of the University examinations and should be shown separately in the grade card.
5. Pass in University Exam will be 50% marks in theory and practical

These concepts have been incorporated from the "Competency Based Assessment Module for Undergraduate Medical Education-2019"

2. Curriculum Vitae

Name of Student											
Name of Parent/Guardian											
Date of Birth & Age											
Permanent Address											
Address for Postal Communication											
Landline Phone (Home)											
Mobile Phone (Parent/Guardian)											
Mobile Phone (Parent/Guardian)											
Mobile Phone (Student)											
Email ID (Parent/Guardian)											
Email ID (Student)											

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Signature of Student

3. Understanding Competency Based Assessment

Assessment requires specification of measurable and observable entities. This could be in the form of whole tasks that contribute to one or more competencies or assessment of a competency per se. Another approach is to break down the individual competency into learning objectives related to the domains of knowledge, skills, attitudes, communication etc. and then assess them individually. However, as stated earlier, using individual domain framework may not always result in making an accurate assessment of the specific competency. Therefore, efforts should be made to include competencies in the assessment process as much as possible. CBA is very useful to convey a message to the learners to structure their learning around competency framework.

- CBA operates within the framework of competencies. Assessment tools should align competencies/objectives.
- CBA should help to acquire competencies/objectives (*Assessment for learning*) and their certification (*Assessment of learning*).
- CBA is continuous and ongoing process with opportunities for providing developmental feedback.
- Direct observations of learners improve utility of CBA and feedback.
- Multiple assessors, multiple tools and multiple assessments improve the validity and reliability of CBA.

Formative & Internal Assessment (IA)

Formative assessment is an assessment conducted during the instruction with the primary purpose of providing feedback for improving learning. It also helps the teachers and learners to modify their teaching learning strategies. The feedback is central to formative assessment and is linked to deep learning, seeking to explore the educational literature and its pedagogical lessons for healthcare educational practice. It provides inputs to both learners and teachers regarding adequacy of teaching-learning. A variety of feedback principles and techniques can be used depending on the context.

Although there can be a debate on the summative or formative nature of IA, it still provides the best opportunities for formative purposes. IA is when assessment is done by the teachers who have taught the subject. It overcomes the limitations of day-to-day variability and allows larger sampling of topics, competencies and skills.

In competency based curriculum, IA provides useful avenues for both formative and summative assessment. The IA focuses on the process of learning i.e. how the learners have learnt throughout the course. This assessment gives priority to psychomotor, communication and affective domains. These are those domains which are usually not assessed by the traditional assessment methods. It should involve all faculty members of a department (Senior Residents upwards) and not just one or two senior teachers. This helps to build the ownership of teaching-learning and assessment as well as provide 'hands-on' experience in assessment to all teachers. In that way, IA can be a very useful tool for assessing all competencies in any competency based curriculum.

IA should not be considered as an assessment without external controls and can be utilized in a manner to overcome some its perceived weaknesses. Utility of IA can be further improved by involving all teachers in the department and limiting the contribution of individual teacher, test or tool.

Designing a system of assessment

While designing an internal assessment, all domains of learning i.e. cognitive, psychomotor and affective should be taken into account and weightage should be assigned to these domains for assessment. We can divide various domains into smaller components and assign marks to each component. Make a blueprint of assessment, then circulate to few learners and faculty, take their comments/ views/feedback and revise as per the need. Miller's pyramid (figure 2) provides a simple way to select appropriate tool for assessment. Efforts should be made to climb higher in the pyramid.^{6, 13} The following adapted example illustrates this:

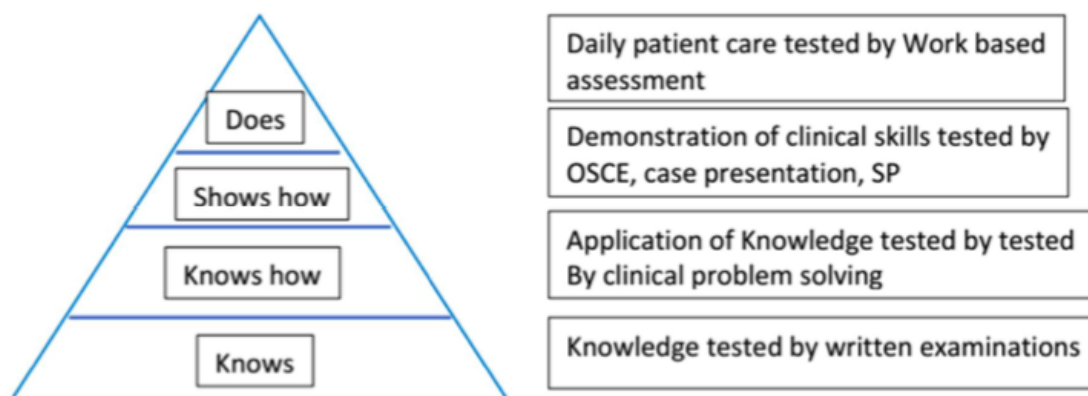


Figure 2. Assessment methods as per levels of competency (Adapted from Ramani)
OSCE: Objective Structured Clinical Examination, SP: Standardised/ Simulated Patients

The key to building validity and to make CBA assessment useful is to align it with competencies/objectives. Including some aspects from competencies of other phases is useful to assess integration of concepts. Some examples of such alignment can be seen in the competency sheet given in Table1.

Table 1. Deriving assessment methods from objectives

Competency: An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

PA42.3	Identify the etiology of meningitis based on given CSF parameters	K/S	SH	Y
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Objective: Statement of what a learner should be able to do at the end of a specific learning experience

PA42.3.1	At the end of the session the PII student must be able to enumerate the most common causes of meningitis correctly	Short note or part of structured essay: Enumerate 5 causes of meningitis based on their prevalence in India
PA42.3.2	At the end of the session the PII student must be able to enumerate the components of a CSF analysis correctly	Short note or part of structured essay: Enumerate the components tested in a CSF analysis
PA4.3.3	At the end of the session the PII student must be able to describe the CSF features for a given etiologic of meningitis accurately	Short note or part of structured essay: Describe the CSF findings that are characteristic of tuberculous meningitis
PA4.3.4	At the end of the session the PII student must be able to identify the aetiology of meningitis correctly from a given set of CSF parameters	Short note / part of the structured essay/ Skill station/ Viva: Review the CSF findings in the following patient and identify (write or vocalise) the most likely ethology

Table 1. Deriving assessment methods from objectives

A useful approach, especially for affective, psychomotor and communication domains, is to adopt the concept of assessment toolbox. A toolbox is a listing of available tools (and rating forms, if required), which are suggested for a particular competency or sub-competency and aims at improving the value of assessment data.¹⁴ The listed tools are suggestions only and can be freely used either singly or in combination by teachers to suit particular requirements. Efforts should be made to use multiple tools even for a given competency to improve validity and reliability of assessment. While assessment will continue to be subject based, efforts must be made to ensure that phase appropriate correlates are assessed to determine if the learner has internalised and integrated the concept and its application.

Internal Assessment

Scheduling of IA

A student who has not taken minimum required number of tests for IA each in theory and practical will not be eligible for University examinations. Proper records of the work should be maintained which will form the basis for the learners' internal assessment and should be available to the assessors at the time of inspection of the college by the Medical Council of India.

Components of IA

- Theory IA can include: theory tests, send ups, seminars, quizzes, interest in subject, scientific attitude etc. Written tests should have short notes and creative writing experiences.
- Practical/Clinical IA can include: practical/clinical tests, Objective Structured Clinical Examination (OSCE)/Objective Structured Practical Examination (OSPE), Directly Observed Procedural Skills (DOPS), Mini Clinical Evaluation Exercise (mini-CEX), records maintenance and attitudinal assessment.

Colleges and teachers should try to build capacity to use a variety of assessment tools. A number of tools are available in the form of assessment toolbox. The construct validity and predictive utility of internal assessment is high. Many of the tools mentioned for IA may appear subjective. However, by virtue of being high on validity and by conveying a message to the learners to not ignore skills, attitudes and communication (educational impact), they contribute to better learning. Since stakes at IA are low, the use of expert subjective assessments to cover areas which are not assessable by conventional objectivised assessment tools is appropriate. There is plenty of evidence in literature to suggest that expert subjective assessments can be as reliable as highly objective ones.

Assessment of Foundation Course should be included in formative assessment of first phase. Assessment of Early Clinical Exposure should be included in formative as well as in internal assessment in first phase subject-wise. There should be at least one assessment based on direct observation of skills, attitudes and communication at all levels. Communication and attitudinal assessment should also be built in all assessments as far as possible.

Feedback in IA

Feedback should be provided to learners throughout the course so that they are aware of their performance and remedial action can be initiated well in time. The feedbacks need to be structured and the faculty and learners must be sensitized to giving and receiving feedback. The results of IA should be displayed on notice board within 2 weeks of the test and an opportunity provided to the learners to discuss the results and get feedback on making their performance better. It is also recommended that learners should sign with date whenever they are shown IA records in token of having seen and discussed the marks. Internal assessment marks will not be added to University examination marks and will reflect as a separate head of passing at the summative examination.

(These concepts have been incorporated in the proposed Regulations in Graduate Medical Education, 2019 (GMER 2019) and are reproduced here.

4. Formative Assessment of Classroom Learning

The term "Classroom Learning" mentioned here includes any learning that happens within the ambit of the department as large group and small group teaching, demonstrations, Clinical Physiology classes, Haematology practical classes etc. The learning in the department predominantly fits into the Scale of 1 and 2 of the 5 level Blooms Taxonomy.

The Assessment Methods would include

1. End of Lecture Class/Module Assessment: 5-8 MCQ's solved over 5-8minutes
2. End of Clinical Physiology Module / Class: OSPE of 10-12minutes
3. End of Haematology Class/Module: Spotting / OSPE

For effective assessment and grading of performances a Likert's scale is given as under:

Grade	Characteristic
1	Score < 35% marks in the end of class assessments
2	Score 35%-50% marks in the end of class assessments
3	Score 50%-60% marks in the end of class assessments
4	Score 60%-75% marks in the end of class assessments
5	Score > 75% marks in the end of class assessments

Number	COMPETENCY: The student should be able to	Level	Grading Scale					Initials of Facilitator
			1	2	3	4	5	
Topic: Basic Biochemistry								
BI1.1	Describe the molecular and functional organization of a cell and its sub-cellular components.	KH						
Topic: Enzyme								
BI2.1	Explain fundamental concepts of enzyme, isoenzyme, alloenzyme, coenzyme & co-factors. Enumerate the main classes of IUBMB nomenclature.	KH						
BI2.2	Observe the estimation of SGOT & SGPT	K						
BI2.3	Describe and explain the basic principles of enzyme activity	KH						
BI2.4	Describe and discuss enzyme inhibitors as poisons and drugs and as therapeutic enzymes	KH						
BI2.5	Describe and discuss the clinical utility of various serum enzymes as markers of pathological conditions.	KH						
BI2.6	Discuss use of enzymes in laboratory investigations (Enzyme-based assays)	KH						
BI2.7	Interpret laboratory results of enzyme activities & describe the clinical utility of various enzymes as markers of pathological conditions.	KH						

Topic: Chemistry and Metabolism of Carbohydrates							
BI3.1	Discuss and differentiate monosaccharides, di-saccharides and polysaccharides giving examples of main carbohydrates as energy fuel, structural element and storage in the human body	KH					
BI3.2	Describe the processes involved in digestion and assimilation of carbohydrates and storage.	KH					
BI3.3	Describe and discuss the digestion and assimilation of carbohydrates from food.	KH					
BI3.4	Define and differentiate the pathways of carbohydrate metabolism, (glycolysis, gluconeogenesis, glycogen metabolism, HMP shunt).	KH					
BI3.5	Describe and discuss the regulation, functions and integration of carbohydrate along with associated diseases/disorders.	KH					
BI3.6	Describe and discuss the concept of TCA cycle as a amphibolic pathway and its regulation.	KH					
BI3.7	Describe the common poisons that inhibit crucial enzymes of carbohydrate metabolism (eg; fluoride, arsenate)	KH					
BI3.8	Discuss and interpret laboratory results of analytes associated with metabolism of carbohydrates.	KH					
BI3.9	Discuss the mechanism and significance of blood glucose regulation in health and disease.	KH					
BI3.10	Interpret the results of blood glucose levels and other laboratory investigations related to disorders of carbohydrate metabolism.	KH					
Topic: Chemistry and Metabolism of Lipids							
BI4.1	Describe and discuss main classes of lipids (Essential/non-essential fatty acids, cholesterol and hormonal steroids, triglycerides, major phospholipids and sphingolipids) relevant to human system and their major functions.	KH					
BI4.2	Describe the processes involved in digestion and absorption of dietary lipids and also the key features of their metabolism	KH					
BI4.3	Explain the regulation of lipoprotein metabolism & associated disorders.	KH					
BI4.4	Describe the structure and functions of lipoproteins, their functions, interrelations & relations with atherosclerosis	KH					
BI4.5	Interpret laboratory results of analytes associated with metabolism of lipids	KH					

BI4.6	Describe the therapeutic uses of prostaglandins and inhibitors of eicosanoid synthesis.	KH						
BI4.7	Interpret laboratory results of analytes associated with metabolism of lipids.	KH						
Topic: Chemistry and Metabolism of Proteins								
BI5.1	Describe and discuss structural organization of proteins.	KH						
BI5.2	Describe and discuss functions of proteins and structure-function relationships in relevant areas eg, hemoglobin and selected hemoglobinopathies	KH						
BI5.3	Describe the digestion and absorption of dietary proteins.	KH						
BI5.4	Describe common disorders associated with protein metabolism.	KH						
BI5.5	Interpret laboratory results of analytes associated with metabolism of proteins.	KH						
Topic: Metabolism and homeostasis								
BI6.1	Discuss the metabolic processes that take place in specific organs in the body in the fed and fasting states.	KH						
BI6.2	Describe and discuss the metabolic processes in which nucleotides are involved.	KH						
BI6.3	Describe the common disorders associated with nucleotide metabolism.	KH						
BI6.4	Discuss the laboratory results of analytes associated with gout & Lesch Nyhan syndrome.	KH						
BI6.5	Describe the biochemical role of vitamins in the body and explain the manifestations of their deficiency	KH						
BI6.6	Describe the biochemical processes involved in generation of energy in cells.	KH						
BI6.7	Describe the processes involved in maintenance of normal pH, water & electrolyte balance of body fluids and the derangements associated with these.	KH						
BI6.8	Discuss and interpret results of Arterial Blood Gas (ABG) analysis in various disorders.	KH						
BI6.9	Describe the functions of various minerals in the body, their metabolism and homeostasis.	KH						
BI6.10	Enumerate and describe the disorders associated with mineral metabolism.	KH						
BI6.11	Describe the functions of haem in the body and describe the processes involved in its metabolism and describe porphyrin metabolism.	KH						

BI6.12	Describe the major types of haemoglobin and its derivatives found in the body and their physiological/ pathological relevance.	KH						
BI6.13	Describe the functions of the kidney, liver, thyroid and adrenal glands.	KH						
BI6.14	Describe the tests that are commonly done in clinical practice to assess the functions of these organs (kidney, liver, thyroid and adrenal glands).	KH						
BI6.15	Describe the abnormalities of kidney, liver, thyroid and adrenal glands.	KH						
Topic: Molecular biology								
BI7.1	Describe the structure and functions of DNA and RNA and outline the cell cycle.	KH						
BI7.2	Describe the processes involved in replication & repair of DNA and the transcription & translation mechanisms.	KH						
BI7.3	Describe gene mutations and basic mechanism of regulation of gene expression.	KH						
BI7.4	Describe applications of molecular technologies like recombinant DNA technology, PCR in the diagnosis and treatment of diseases with genetic basis.	KH						
BI7.5	Describe the role of xenobiotics in disease	KH						
BI7.6	Describe the anti-oxidant defence systems in the body.	KH						
BI7.7	Describe the role of oxidative stress in the pathogenesis of conditions such as cancer, complications of diabetes mellitus and atherosclerosis.	KH						
Topic: Nutrition								
BI8.1	Discuss the importance of various dietary components and explain importance of dietary fibre.	KH						
BI8.2	Describe the types and causes of protein energy malnutrition and its effects.	KH						
BI8.3	Provide dietary advice for optimal health in childhood and adult, in disease conditions like diabetes mellitus, coronary artery disease and in pregnancy.	KH						
BI8.4	Describe the causes (including dietary habits), effects and health risks associated with being overweight/ obesity.	KH						
BI8.5	Summarize the nutritional importance of commonly used items of food including fruits and vegetables.(macro-molecules & its importance)	KH						

Topic: Extracellular Matrix								
BI9.1	List the functions and components of the extracellular matrix (ECM).	KH						
BI9.2	Discuss the involvement of ECM components in health and disease.	KH						
BI9.3	Describe protein targeting & sorting along with its associated disorders.	KH						
Topic: Oncogenesis and immunity								
BI10.1	Describe the cancer initiation, promotion oncogenes & oncogene activation. Also focus on p53 & apoptosis	KH						
BI10.2	Describe various biochemical tumor markers and the biochemical basis of cancer therapy.	KH						
BI10.3	Describe the cellular and humoral components of the immune system & describe the types and structure of antibody	KH						
BI10.4	Describe & discuss innate and adaptive immune responses, self/non-self recognition and the central role of T-helper cells in immune responses.	KH						
BI10.5	Describe antigens and concepts involved in vaccine development.	KH						
Topic: Biochemical Laboratory Tests								
BI11.1	Describe commonly used laboratory apparatus and equipments, good safe laboratory practice and waste disposal.	KH						
BI11.2	Describe the preparation of buffers and estimation of pH.	KH						
BI11.3	Describe the chemical components of normal urine.	KH						
BI11.4	Perform urine analysis to estimate and determine normal and abnormal constituents	P						
BI11.5	Describe screening of urine for inborn errors & describe the use of paper chromatography	KH						
BI11.6	Describe the principles of colorimetry	KH						
BI11.7	Demonstrate the estimation of serum creatinine and creatinine clearance	P						
BI11.8	Demonstrate estimation of serum proteins, albumin and A:G ratio	P						
BI11.9	Demonstrate the estimation of serum total cholesterol and HDL-cholesterol	P						
BI11.10	Demonstrate the estimation of triglycerides	P						
BI11.11	Demonstrate estimation of calcium and phosphorous	P						
BI11.12	Demonstrate the estimation of serum bilirubin	P						

BI11.13	Demonstrate the estimation of SGOT/ SGPT	P						
BI11.14	Demonstrate the estimation of alkaline phosphatase	P						
BI11.15	Describe & discuss the composition of CSF	KH						
BI11.16	Observe use of commonly used equipments/techniques in biochemistry laboratory including: •pH meter •Paper chromatography of amino acid •Protein electrophoresis •TLC, PAGE •Electrolyte analysis by ISE •ABG analyzer •ELISA •Immunodiffusion •Auto-analyser •Quality control •DNA isolation from blood/ tissue	KH						
BI11.17	Explain the basis and rationale of biochemical tests done in the following conditions: - diabetes mellitus, - dyslipidemia, - myocardial infarction, - renal failure, gout, - proteinuria, - nephrotic syndrome, - edema, - jaundice, - liver diseases, pancreatitis, disorders of acid- base balance, - thyroid disorders.	KH						
BI11.18	Discuss the principles of spectrophotometry.	KH						
BI11.19	Outline the basic principles involved in the functioning of instruments commonly used in a biochemistry laboratory and their applications.	KH						
BI11.20	Identify abnormal constituents in urine, interpret the findings and correlate these with pathological states.	SH						
BI11.21	Demonstrate estimation of glucose, creatinine, urea and total protein in serum.	SH						
BI11.22	Calculate albumin: globulin (AG) ratio and creatinine clearance	KH						
BI11.23	Calculate energy content of different food items, identify food items with high and low glycemic index and explain the importance of these in the diet	KH						
BI11.24	Enumerate advantages and/or disadvantages of use of unsaturated, saturated and trans fats in food.	KH						

5. Formative Assessment of Assignments

Note:

1. Formative Assessment involves various methods of which out of class assignments are an important instrument.
2. The structure for the assignment should be clear mentioned at the start. The structure should include an introduction, main body of the assignment and a conclusion if it is an essay work. Illustrations, flow charts, tables and graphs should be part of the submission where ever necessary.
3. Plagiarism should be discouraged.

No	Title of Assignment	MARKS (Out of 10 Marks)	Initial of Facilitator
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

6. Formative Assessment of Integrated Sessions

Note:

1. Formative Assessment of integrated teaching sessions involves assessment of student level of sessional learning.
2. The student shall be given a 15-20 MCQ test at the end of the session.
This can be both in the offline and online modes,

No	Topic of Integrated Session	MARKS (Out of 10 Marks)	Initials of Facilitator
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

7. Formative Assessment of Early Clinical Exposure

Note:

1. Formative Assessment of ECE sessions involves assessment of student level of learning through assessment of the synopsis and reflection
2. The student shall submit the same at the end of the session. This can be both in the offline and online modes.

No	Assigned ECE Session	MARKS (Out of 10 Marks)	Initial of Facilitator
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

8. Formative Assessment of Self-Directed Learning

Note:

1. Formative Assessment of SDL sessions involves assessment of student level of learning through assessment of the synopsis and bibliography
2. The student shall submit the same at the end of the session. This can be both in the offline and online modes.

No	Assigned SDL Topic	MARKS (Out of 10 Marks)	Initial of Facilitator
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
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19			
20			

9. Formative Assessment of AETCOM Learning

Note:

1. Formative Assessment of AETCOM sessions involves assessment of student level of learning through DOPS, OSPE sessions

No	Assigned AETCOM Topic	MARKS (Out of 10 Marks)	Initial of Facilitator
1			
2			
3			
4			
5			
6			
7			
8			

10. Formative Feedback Record

Note:

1. Feedback should be provided to learners throughout the course so that they are aware of their performance and remedial action can be initiated well in time.
2. The feedbacks need to be structured and the faculty and learners must be sensitized to giving and receiving feedback.
3. The results of IA should be displayed on notice board within 2 weeks of the test and an opportunity provided to the learners to discuss the results and get feedback on making their performance better.
4. The learner should sign with date whenever they are shown IA records in token of having seen and discussed the marks.
5. The learner Internal assessment marks will not be added to University examination marks and will reflect as a separate head of passing at the summative examination
6. Some suggestions for handling the Feedback process
 - a. Start with the learner's agenda for the session
 - b. Evaluate the performance of the learner in the previous sessions and outcomes the learner is trying to achieve
 - c. Enquire about problems faced by the learner in the process of learning in the classroom, at home and during the assessments.
 - d. Encourage the learner to think about goal setting
 - e. Encourage self-assessment and self-solving problems
 - f. Offer space for the learner to make suggestions, to generate solutions
 - g. Be non-judgmental and specific, prevent vague generalisation, provide balanced feedback
 - h. Offers suggestions and alternatives, make suggestions rather than prescriptive comments. Be valuing and supportive
 - i. Structure and summarise the session to ensure that learner has some specifics to take home.

Formative Feedback Session		1	
Date			
Type of Assessment			
Topic of Assessment			
Feed Back received from Student			
Feed Back given to the Student			
Remedial Action Suggested			
Timeline of Remedial Action			
Signature of Mentor		Signature of Student	

Formative Feedback Session		2	
Date			
Type of Assessment			
Topic of Assessment			
Feed Back received from Student			
Feed Back given to the Student			
Remedial Action Suggested			
Timeline of Remedial Action			
Signature of Mentor		Signature of Student	

Formative Feedback Session		3	
Date			
Type of Assessment			
Topic of Assessment			
Feed Back received from Student			
Feed Back given to the Student			
Remedial Action Suggested			
Timeline of Remedial Action			
Signature of Mentor		Signature of Student	

Formative Feedback Session		4	
Date			
Type of Assessment			
Topic of Assessment			
Feed Back received from Student			
Feed Back given to the Student			
Remedial Action Suggested			
Timeline of Remedial Action			
Signature of Mentor		Signature of Student	

Formative Feedback Session		5	
Date			
Type of Assessment			
Topic of Assessment			
Feed Back received from Student			
Feed Back given to the Student			
Remedial Action Suggested			
Timeline of Remedial Action			
Signature of Mentor		Signature of Student	

Formative Feedback Session		6	
Date			
Type of Assessment			
Topic of Assessment			
Feed Back received from Student			
Feed Back given to the Student			
Remedial Action Suggested			
Timeline of Remedial Action			
Signature of Mentor		Signature of Student	

Formative Feedback Session		7	
Date			
Type of Assessment			
Topic of Assessment			
Feed Back received from Student			
Feed Back given to the Student			
Remedial Action Suggested			
Timeline of Remedial Action			
Signature of Mentor		Signature of Student	

Formative Feedback Session		8	
Date			
Type of Assessment			
Topic of Assessment			
Feed Back received from Student			
Feed Back given to the Student			
Remedial Action Suggested			
Timeline of Remedial Action			
Signature of Mentor		Signature of Student	

Formative Feedback Session		9	
Date			
Type of Assessment			
Topic of Assessment			
Feed Back received from Student			
Feed Back given to the Student			
Remedial Action Suggested			
Timeline of Remedial Action			
Signature of Mentor		Signature of Student	

Formative Feedback Session		10	
Date			
Type of Assessment			
Topic of Assessment			
Feed Back received from Student			
Feed Back given to the Student			
Remedial Action Suggested			
Timeline of Remedial Action			
Signature of Mentor		Signature of Student	

Formative Feedback Session		11	
Date			
Type of Assessment			
Topic of Assessment			
Feed Back received from Student			
Feed Back given to the Student			
Remedial Action Suggested			
Timeline of Remedial Action			
Signature of Mentor		Signature of Student	

11. Certification of Skills

Note:

1. Certification of Skills (COS) should be provided to learners at all points of the course so that they are aware of their performance and remedial action can be initiated well in time for the student to achieve the goal of obtaining a certified skill.
2. The feedbacks need to be structured and the faculty and learners must be sensitized to giving and receiving feedback.
3. The results of assessment for COS should be discussed at the end of the assessment and an opportunity provided to the learners to discuss the results and get feedback on making their performance better.
4. The learner should be given a date for remedial session wherein they will be reassessed.
5. A maximum of 5 remedial sessions may be offered beyond which they shall not be certified for the current academic session. The university and MCI regulations will be mandatory.
6. Example:

BI 11.4	Perform urine analysis to estimate and determine normal and abnormal constituents
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Type of Skill	BI 11.4: Perform urine analysis to estimate and determine normal and abnormal constituents	
Type of Assessment	A: DOPS: Analyse the given sample of urine from a 50-year-old male patient with polyuria and polydipsia and record the results B: OSPE: Heat Coagulation Test has been performed. Observe the reaction tube and report. C. DOPS: 65year old woman has facial edema. Urine sample is given for analysis	
Performance of Student	A: OSPE: Fails to perform the requisite test and record the result B: OSPE: Fails to report C: DOPS: Wrong procedure was used	
Feed Back of Learner	The learner "Mr.DDA" states that he was having a urgent family engagement and hence did not attend the class	
Feed Back of Facilitator	Facilitator reassures the learner. "Mr.DDA" is adviced to attend a remedial class. The facilitator explains the key points on - how to perform the various tests, procedures, interpretation and clinical correlation. The facilitator also explains the key points on how to identify the normal and abnormal measurement. Mr DDA is asked to make a record of the procedures and and submit the record next working day.	
Remedial Action Suggested	"Mr.DDA" is adviced to repeat the assessments 10days later	
Remedial Assessment	1	A: DOPS: Analyse the given sample of urine from a 50-year-old male patient with polyuria and polydipsia and record the results B: OSPE: Heat Coagulation Test has been performed. Observe the reaction tube and report. C. DOPS: 65year old woman has facial edema. Urine sample is given for analysis
Performance of Student	A: OSPE: Performs the requisite test and records the result B: OSPE: Interprets and reports C: DOPS: Performs the requisite test and records the result	
Certification of Skill	Certified that the learner has successfully completed the certification of the Skill for competency BI 11.4	
Date of COS	25.3.2019	
Signatures		
	Learner	Facilitator

Certification of Skills - Competency AN:.....

Type of Skill			
Type of Assessment			
Performance of Student			
Feed Back of Learner			
Feed Back of Facilitator			
Remedial Action Suggested			
Remedial Assessment	1	Date	
Performance of Student			
Remedial Assessment	2	Date	
Performance of Student			
Remedial Assessment	3	Date	
Performance of Student			
Remedial Assessment	4	Date	
Performance of Student			
Remedial Assessment	5	Date	
Performance of Student			
Certification of Skill	Certified / Not Certified		
Date of COS			
Signatures			
	Learner		Facilitator

Certification of Skills - Competency AN:.....

Type of Skill			
Type of Assessment			
Performance of Student			
Feed Back of Learner			
Feed Back of Facilitator			
Remedial Action Suggested			
Remedial Assessment	1	Date	
Performance of Student			
Remedial Assessment	2	Date	
Performance of Student			
Remedial Assessment	3	Date	
Performance of Student			
Remedial Assessment	4	Date	
Performance of Student			
Remedial Assessment	5	Date	
Performance of Student			
Certification of Skill	Certified / Not Certified		
Date of COS			
Signatures			
	Learner	Facilitator	

Certification of Skills - Competency AN:.....

Type of Skill			
Type of Assessment			
Performance of Student			
Feed Back of Learner			
Feed Back of Facilitator			
Remedial Action Suggested			
Remedial Assessment	1	Date	
Performance of Student			
Remedial Assessment	2	Date	
Performance of Student			
Remedial Assessment	3	Date	
Performance of Student			
Remedial Assessment	4	Date	
Performance of Student			
Remedial Assessment	5	Date	
Performance of Student			
Certification of Skill	Certified / Not Certified		
Date of COS			
Signatures			
	Learner		Facilitator

Certification of Skills - Competency AN:.....

Type of Skill			
Type of Assessment			
Performance of Student			
Feed Back of Learner			
Feed Back of Facilitator			
Remedial Action Suggested			
Remedial Assessment	1	Date	
Performance of Student			
Remedial Assessment	2	Date	
Performance of Student			
Remedial Assessment	3	Date	
Performance of Student			
Remedial Assessment	4	Date	
Performance of Student			
Remedial Assessment	5	Date	
Performance of Student			
Certification of Skill	Certified / Not Certified		
Date of COS			
Signatures			
	Learner	Facilitator	

Certification of Skills - Competency AN:.....

Type of Skill			
Type of Assessment			
Performance of Student			
Feed Back of Learner			
Feed Back of Facilitator			
Remedial Action Suggested			
Remedial Assessment	1	Date	
Performance of Student			
Remedial Assessment	2	Date	
Performance of Student			
Remedial Assessment	3	Date	
Performance of Student			
Remedial Assessment	4	Date	
Performance of Student			
Remedial Assessment	5	Date	
Performance of Student			
Certification of Skill	Certified / Not Certified		
Date of COS			
Signatures			
	Learner	Facilitator	

Certification of Skills - Competency AN:.....

Type of Skill		
Type of Assessment		
Performance of Student		
Feed Back of Learner		
Feed Back of Facilitator		
Remedial Action Suggested		
Remedial Assessment	1	Date
Performance of Student		
Remedial Assessment	2	Date
Performance of Student		
Remedial Assessment	3	Date
Performance of Student		
Remedial Assessment	4	Date
Performance of Student		
Remedial Assessment	5	Date
Performance of Student		
Certification of Skill	Certified / Not Certified	
Date of COS		
Signatures		
	Learner	Facilitator

Certification of Skills - Competency AN:.....

Type of Skill			
Type of Assessment			
Performance of Student			
Feed Back of Learner			
Feed Back of Facilitator			
Remedial Action Suggested			
Remedial Assessment	1	Date	
Performance of Student			
Remedial Assessment	2	Date	
Performance of Student			
Remedial Assessment	3	Date	
Performance of Student			
Remedial Assessment	4	Date	
Performance of Student			
Remedial Assessment	5	Date	
Performance of Student			
Certification of Skill	Certified / Not Certified		
Date of COS			
Signatures			
	Learner		Facilitator

Certification of Skills - Competency AN:.....

Type of Skill			
Type of Assessment			
Performance of Student			
Feed Back of Learner			
Feed Back of Facilitator			
Remedial Action Suggested			
Remedial Assessment	1	Date	
Performance of Student			
Remedial Assessment	2	Date	
Performance of Student			
Remedial Assessment	3	Date	
Performance of Student			
Remedial Assessment	4	Date	
Performance of Student			
Remedial Assessment	5	Date	
Performance of Student			
Certification of Skill	Certified / Not Certified		
Date of COS			
Signatures			
	Learner		Facilitator

Certification of Skills - Competency AN:.....

Type of Skill			
Type of Assessment			
Performance of Student			
Feed Back of Learner			
Feed Back of Facilitator			
Remedial Action Suggested			
Remedial Assessment	1	Date	
Performance of Student			
Remedial Assessment	2	Date	
Performance of Student			
Remedial Assessment	3	Date	
Performance of Student			
Remedial Assessment	4	Date	
Performance of Student			
Remedial Assessment	5	Date	
Performance of Student			
Certification of Skill	Certified / Not Certified		
Date of COS			
Signatures			
	Learner	Facilitator	

Certification of Skills - Competency AN:.....

Type of Skill			
Type of Assessment			
Performance of Student			
Feed Back of Learner			
Feed Back of Facilitator			
Remedial Action Suggested			
Remedial Assessment	1	Date	
Performance of Student			
Remedial Assessment	2	Date	
Performance of Student			
Remedial Assessment	3	Date	
Performance of Student			
Remedial Assessment	4	Date	
Performance of Student			
Remedial Assessment	5	Date	
Performance of Student			
Certification of Skill	Certified / Not Certified		
Date of COS			
Signatures			
	Learner	Facilitator	

Certification of Skills - Competency AN:.....

Type of Skill			
Type of Assessment			
Performance of Student			
Feed Back of Learner			
Feed Back of Facilitator			
Remedial Action Suggested			
Remedial Assessment	1	Date	
Performance of Student			
Remedial Assessment	2	Date	
Performance of Student			
Remedial Assessment	3	Date	
Performance of Student			
Remedial Assessment	4	Date	
Performance of Student			
Remedial Assessment	5	Date	
Performance of Student			
Certification of Skill	Certified / Not Certified		
Date of COS			
Signatures			
	Learner	Facilitator	

12A. Record of Internal Assessment Tests-Theory

[illegible]

14. ATTENDANCE RECORD

Details	Percentage of Attendance
Foundation Course (Common for all 3 departments)	
Theory	
Practicals	
Early Clinical Exposure	
Self Directed learning	
AETCOM	