Weber State University
Principles of Clinical Chemistry II
CLS 2213
Laboratory Skills Competency Checklist

Student Name	Facility	Mentor Name

Last semester in CLS 2211 the student has studied the following topics and has completed laboratory practice sessions which relate to these topics:

Reagent preparation
Laboratory mathematics (including conversions)
Water and glass quality standards
Dilution protocols
Calibration and Quality Control concepts
Clinical chemistry basics of:

- Carbohydrates
- Heme metabolism
- Non-protein Nitrogen compounds
- Electrolytes
- Blood Gases enzymes and related markers

This semester the student will study the following topics and will complete the laboratory practice sessions which relate to these topics:

- Amino Acid assays and Urine, CSF, and Serum Protein assays and procedures
- Lipid Metabolism studies, to include Coronary Risk Panels (Cholesterols,Triglycerides, HDL-Cholesterol, LDL-Cholesterol, VLDL-Cholesterol
- Clinical Enzymology, to include major cardiac, hepatic, and pancreatic enzymes and related markers
- Analytical principles used in Toxicology, TDM, and Endocrinology
- Clinical applications of Toxicology and Therapeutic Drub Monitoring
- Clinical correlation of all the topics covered in CLS-2211 and CLS-2213

It is understood that the student may be introduced to methodologies and concepts not yet covered in this semester's coarse in the daily workload. Instrument knowledge and competency should be based on instrumentation used at the students clinical facility while clinical correlation competency should be based on the concepts covered in this semesters coarse?

The student should perform the following tasks (as deemed appropriate for students by the clinical facility):

- Perform Routine Quality Control procedures on all clinical chemistry analyzers.
- Reconstitute controls and reagents used in the chemistry section of the laboratory.
- Become familiar with general laboratory and chemical safety practices.
- Participate in instrument maintenance (daily, weekly and monthly).
- Participate in instrument troubleshooting.
- Recognize common interferences or clinically unbelievable results encountered in the clinical chemistry laboratory.

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- Perform routine testing of patient samples (previously analyzed samples may be used).
- Participate in the reporting of results including STATs and critical values.
- Perform dilutions (Primary and secondary).
- Participate in the calibration of analyzers.
- Become familiar with validation processes used in the laboratory for new instrumentation or analytes.

Students should work with their respective mentors to complete the listed objectives. Accuracy, precision, timely reporting of results, and demeanor must comply with the laboratory's acceptable standards. While working in the laboratory, the student must meet all laboratory compliance standards including patient confidentiality, communication, laboratory safety, and equipment and work area maintenance.

The student's laboratory competency evaluation should be completed by the clinical mentor in the presence of the student, so as to allow verbal feedback to the student regarding progress and performance.

Use the following competency scale to complete the competency checklist found on the pages that follow.

- **LEVEL 1**: Discussed: Process was discussed, principle explained, and the student acknowledges understanding of the process.
- **LEVEL 2**: Demonstrated: Process has been performed and demonstrated by the mentor. Student has observed demonstration and has been allowed to ask questions as needed. The student acknowledges and understanding of the process of principle by verbally explaining the process or principle back to the mentor.
- **LEVEL 3**: Practiced: Student has practiced the process under the direction and maximum supervision of the mentor. The student demonstrates knowledge of how to perform the process or task by actual performance under direct, maximum supervision, but without having to demonstrate any particular competency at that task or process.
- **LEVEL 4**: Maximum Supervision: The student has performed the process under direct, maximum supervision of the student's mentor, and with the level of competency required by the laboratory to perform that task or process.
- **LEVEL 5**: Minimum Supervision: The student can perform the process satisfactorily with only minimum, or non-direct supervision by the students mentor, and the performance meet the level of competency required by the laboratory for that task or process.
- **N/A**: Not available/Applicable: Due to the nature of the laboratory the student does not have access to equipment or method.

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Topic of Study/Prerequisite Tasks	Competency skill/Training	Students level of Achievement/ Minimum Achievement level	Initials/ Date
General Laboratory Concepts	Identify correct specimen types as specified by the clinical facilities requirements.	___/5	
	Discuss proper specimen collection and storage for routine chemistry assays	___/4	
	Identify physical characteristics of samples that may interfere with testing.	___/5	
	Properly reconstitute control or reagents using pipettes routinely used in the laboratory.	___/5	
	Demonstrate understanding of when to use and proper use of pipettes used in the laboratory	___/5	
	Perform dilutions and calculations on several patient samples (95% accuracy of previously analyzed samples)	___/5	
	Perform daily, weekly and monthly maintenance on a instruments in your laboratory.	___/4	
	Perform QC procedures in accordance with the clinical institutions policy.	___/5	
	Correctly document actions taken when results are not within acceptable limits.	___/5	

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Interpretation and Acceptance of Results	Discuss recording, reporting, and documenting results	___/5	
	Explain "Panic values" or "Critical Values" and demonstrate how and when to report them.	___/5	
	Explain "Linear Limits " "Linear Ranges" or "Reportable Ranges" and demonstrate how to handle and report samples outside these limits.	___/5	
Unit 8: Amino Acids and Proteins	Perform Total Protein and Albumin assays. Calculate A/G ratios.	___/5	
	Perform or discuss Protein electrophoresis	___/5	
	Perform or discuss Thin Layer Chromotagraphy amino acid separations.	___/5	
Unit 9: Lipid Metabolism Studies	Perform Lipid panels	___/5	
	Calculate LDL Cholesterols	___/5	
Unit 10: Clinical Enzymology	Perform all enzyme assays routinely performed in your laboratory	___/5	
	Recognize interfering factors associated with the analysis of enzymes.	___/5	
Unit 11: Analytical Priciples for Endocrinology, Toxicology and TDM	Perform TDM or Toxicology analysis on instrumentation routinely used in your laboratory	___/5	
Unit 12: Endocrine Function Studies	Perform any Endocrine function assays performed in your laboratory	___/5	

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	Perform or discuss Thyroid surveys and correlation of results	___/5	
Unit 14 Clinical Correlation as a tool for Quality Assurance	Demonstrate understanding of clinical correlation of laboratory data as a Quality assurance tool	___/4	
AFFECTIVE OBJECTIVES:	Comments		
Honesty:			
Student demonstrates honesty by maintaining strict patient confidentiality.		___/5	
Student demonstrates honesty by accepting control values only when within acceptable limits.		___/5	
Student demonstrates honesty in all areas of laboratory work, to include performing and documenting daily and weekly maintenance procedures, preventative maintenance, temperature checks, etc.		___/5	
Student demonstrates honesty by completing all procedures in adherence to laboratory SOP's, taking no shortcuts or unauthorized modifications of procedure.		___/5	
Personal Interactive Skills			
Student demonstrates proper professional			

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behavior by working with co-workers in a productive, positive manner, promoting productive workflow		___/5	
Student demonstrates proper professional demeanor by refraining from making statements or actions that represent sexual, ethnic, racial or homophobic harassment.		___/5	
Student demonstrates proper professional demeanor by willingly and consistently using appropriate personal safety devices when handling caustic, infectious or hazardous materials.		___/5	
Student demonstrates proper professional demeanor by completing all required tasks and remaining in the work area when scheduled.		___/5	
Student demonstrates proper professional demeanor by being punctual whenever scheduled.		___/5	
Student demonstrates proper professional demeanor by adhering to current dress and appearance codes in the laboratory setting.		___/5	
Student demonstrates a			

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high degree of professional demeanor by routinely cleaning the work area when leaving the laboratory, returning all supplies to the appropriate storage location, and disinfecting all work areas used by the student.		___/5	
<u>Professional Responsibility:</u>			
Student demonstrates appropriate professional affective behavior by correctly reporting all patient test values, as well as recognizing and correctly reporting all patient critical test values.		___/5	
Student demonstrates appropriate affective behavior by resolving discrepancies in specimen labeling, handling, or collection before reporting patient results.		___/5	
Any Additional Comments By Mentor			