

**STUDENT EVALUATIONS: DEVELOPMENT AND MAINTENANCE  
Departmental Policy**

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Approval Authority Associate Dean, UME	
Implementation Authority Manager, Undergraduate Medical Education	
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- Purpose** 1 Create a UME policy outlining the information on the development and maintenance of student evaluations.
- Scope** 2 This policy applies to all medical students in the MD Program in Cumming School of Medicine, University of Calgary.
- Definitions** 3 In this policy:
- a) UME means the Undergraduate Medical Education program with the University of Calgary, Cumming School of Medicine
  - b) MD - Medical 3 year program
  - c) Approval Authority means the office or officer responsible for approving Undergraduate Medical Education policy and procedures.
  - d) Implementing Authority means the office and officer responsible for implementing Undergraduate Medical Education policies and procedures.
  - e) Student Evaluation Committee (SEC)
  - f) Student Academic Review Committee (SARC)
  - g) Undergraduate Medical Education Committee (UMEC)
  - h) "ITER" means In Training Evaluation Report, these are forms that are completed by preceptors after interacting with a student, either in a classroom (i.e small group) or clinical setting. They can assess a variety of domains of performance, and usually also include a global rating of the Students' performance
  - i) EPA – Entrustable Professional Activity
  - j) Satisfactory means that the Faculty has determined that the student has met or

exceeded the level of performance minimally acceptable for promotion. When a student receives a Satisfactory grade in the course concerned, the grade cannot be altered by any further changes made in the evaluation as a result of subsequent appeals. A final grade of satisfactory is not eligible for reappraisal or appeal.

- k) Unsatisfactory means that the student has not met the minimum performance level for the evaluation. A student who is unsatisfactory may wish (or be required) to review their result sheet with the examination key to aid in recognition of areas of deficiencies and assist in planning remedial studies or to identify an error in the marking. Should a student feel that an error has occurred in the marking of a question they may submit a Request for Reappraisal as per the UME Reappraisal of Graded Term Work and Academic Assessments policy.
- l) Satisfactory with Performance Deficiency is used in occasional circumstances. A rating of “Satisfactory with Performance Deficiency” may be used in a situation where, in the judgement of the Departmental Clerkship Committee or competency committee, there is an overall rating of satisfactory performance but with one or more specific areas of deficiency noted, and this may include professional and ethical behavior. Students that fail to complete the “must complete” mandatory items indicated in the core documents and/or clerkship student handbook will be considered Incomplete and may be considered “Satisfactory with Performance Deficiency” overall even if other components are satisfactory.
- m) “Unsatisfactory” results will be changed to “Satisfactory with Performance Deficiency” if a student successfully completes required remedial work and/or a rewrite examination in clerkship. Incomplete means that a student has not completed all mandatory components of a course or clerkship.
- n) Canadian Resident Match Services – CaRMS
- o) Minimum Performance Level – MPL
- p) “Learning Management System” means a web-based system for curriculum management in UME. Currently, the learning management system in use is called OSLER.

**Policy Statement 4**

Student evaluations serve several purposes including:

- to enhance learning
- to provide an assessment of student performance and achievement of curricular objectives
- to provide feedback to students and faculty regarding a student’s learning needs
- to facilitate program evaluation by identifying strengths and weaknesses of the education program

**1. Participants in UME Evaluations**

All UME Program Evaluations are intended solely for medical students registered with the UME MD program. Observers are not normally permitted at any student examinations. As such, non-UME students will NOT be permitted to participate in UME examinations, unless specific approval has been granted by the Associate Dean, UME. All requests for external participants should be directed, in writing, to the chair of the SEC. With prior approval, observers may be allowed if several conditions are

met. Requests for non-UME students at UME exams must confirm the following:

- a. The observer will not be a future candidate for the examination.
- b. The observer has a professional role relevant to student evaluation (e.g., new course/clerkship chair, responsible for new examination development, etc.)
- c. The observer has a defined affiliation with the Cumming School of Medicine (e.g. current faculty, visiting professor, etc.)
- d. Students will be notified of any observers a minimum of 1 week before the examination date.
- e. Observers must not interfere in any way with the examination.
- f. No notes or recording of the material is permitted.

If these conditions are met, the request for observation should be submitted in writing to the chair of the SEC a minimum of 3 weeks before the examination date. SEC will review all requests for observers at an evaluation, and make recommendations to the Associate Dean, UME. If approval is granted by the Associate Dean, the relevant course/clerkship chair must also grant approval and confirm logistics to accommodate the observer. Requests for observers at a UME evaluation may be denied if the request results in additional work for the UME Evaluation Team (i.e. if an extra track of students is added to an OSCE). Approval of requests for observers will also consider the resource implications for Academic Technologies.

## **2. Frequency of Student Evaluations**

Each course and clerkship in the MD program must have at least one summative evaluation component. In general, each course and clerkship in the MD program should also have at least one formative evaluation component. Courses or clerkships that are short in duration (e.g., less than 4 weeks) may not have sufficient time to provide structured formative evaluation, but should provide alternate means that will allow students to measure their progress in learning. In some courses, formative evaluations may be replaced by summative components that contribute a small proportion to the final grade.

The schedule of student evaluations is determined by the, UME.

Students must be notified at the beginning of the course regarding types and dates of all evaluation strategies to be used.

There are multiple dates for rewrites and deferrals in each year of the MD Program.

## **3. Types of Formal Student Evaluation**

Generally, UME evaluations can be categorized as either formative or summative components.

### **Formative**

The purpose of the formative evaluation is:

- to provide students with a sampling of the question format to be used on the summative evaluation and;
- to allow students to monitor their learning progress.

The formative evaluation should be similar in format and content to the summative evaluation but will emphasize material covered up to the time of administration. It is expected that the same preparation steps including blueprinting and development/review of question bank will be used to prepare both formative and summative examinations. Thus, similar steps will be taken for each examination to ensure the security of the examination database. Formative evaluations may be samplings of summative evaluations with briefer duration and/or demonstrations of examination question format.

For required learning experiences less than four weeks in length alternate means may be provided by which a medical student can measure their progress in learning other than a formative assessment.

As with summative components, some formative evaluations are considered mandatory educational activities. Students who do not participate in mandatory formative evaluations will be reported to the Associate Dean, or the relevant Assistant Dean. Student conduct during formative evaluations must follow University of Calgary evaluation regulations as would apply during summative evaluations.

### **Summative**

Evaluation components should be a fair and representative sampling of the course/clerkship learning objectives. The Preparation steps required are described further in this document and include blueprinting, development/review of a question bank, and standard setting. The summative evaluation may have one or more components, but a single final grade is compiled for each course. For clerkship, two forms of summative assessments are required – an MCQ examination and an ITER – and students must be rated as satisfactory or above on both components to be rated as satisfactory for the rotation. Students must also collect EPA assessments throughout their clerkship and preclerkship rotations/courses. The exact number of successful EPAs in each of the twelve categories is communicated to students at the beginning of clerkship or learning event. Students are expected to monitor their progress in EPA assessments to ensure that they collect at least the

minimum number of EPAs required to graduate from the MD program. Regardless of overall grade, a course or clerkship chair should inform the Associate Dean, UME or delegate directly if they feel that a student has demonstrated significant unprofessional and/or unethical behaviour during the course or clerkship.

Summative evaluations are considered mandatory educational activities.

Summative evaluations may be deferred as per usual policy for deferrals.

#### 4. Components of Student Evaluations

Format of student evaluations is chosen to reflect appropriate assessment of learning objectives. In order to adequately sample the breadth of knowledge, skills and attitudes outlined in learning objectives, two or more evaluation components may be required for an individual course or clerkship. A clear description of evaluation methods must be provided to students at the beginning of the course or clerkship. All evaluation strategies used in UME must be approved by SEC.

Specific evaluation components should be accompanied by acceptable validity evidence (see below).

#### Special Situations Responsibilities Appendices Procedures

5 Not Applicable

6 **UME will ensure adherence to this policy**

7 Not Applicable

8 **Multiple Choice Examinations**

- Multiple choice questions should be written in the “single best response” format. In general, the single response question tends to have better psychometrics than other formats. Most national examination bodies have moved to this question type ± clinical decision making question format.
- Reliability of multiple choice examinations is dependent on several factors including test length and the quality of the individual questions. Locally prepared summative examinations should aim for a reliability coefficient of  $\geq 0.7$ . This will generally require an examination length of 70-100 questions depending on the discrimination factor of individual questions.
- Validity of examinations requires appropriate sampling of course content as guided by the examination blueprint.

#### ***Objective Structured Clinical Examinations (OSCE)***

- OSCEs are used as a formative or summative assessment of clinical skills.
- OSCE content should be drawn from an examination blueprint and match the learning content and objectives to enhance validity of assessment.
- In order to enhance reliability, preparation of OSCE examinations should include examiner and standardized patient training.

## 9 Preceptor Evaluations

- Preceptor ITER evaluations should include a global rating of satisfactory/unsatisfactory performance and a rating scale for specific desired competencies.
- Adequate space for open ended comments should be available.
- Preceptor evaluations must be completed by an attending physician.
- Rotations that involve several preceptors should have a mechanism in place to compile input from all supervising attending physicians and residents.

### Online Formative Evaluations

The Online Formative Evaluation Policy describes the use of the online system. Fundamental principles of exam development and maintenance must be followed, regardless of the format of delivery.

### Other Evaluation Methods

Other methods of student evaluation may be used as components of a course or clerkship evaluation. These may include measurement of student participation, completion of specified assignments, clinical reasoning questions, online summative examinations, logbook completion for clinical clerkship, etc. All evaluation strategies used in UME must first be approved by SEC.

### Reporting of Student Grades

Students should receive timely feedback regarding their performance on both the formative and summative evaluations. Normally, formative evaluation results will be made available within 5 working days and summative evaluation results will be distributed within 14 working days of the examination date.

Examination results will be made available through the UME online exam system. Paper copies of grades are not distributed to students. The examination results will include the overall score and the examination passing threshold and/or overall mean and standard deviation of the class.

### Satisfactory/Unsatisfactory Grading System

Students will not be declared satisfactory overall based upon a result of only one component of the evaluation; the student must be declared Satisfactory or Unsatisfactory in the overall evaluation.

- Results from all years will be reported as either “Satisfactory” or “Unsatisfactory” or “Satisfactory with Performance Deficiency”.
- Based upon their performance, students may be required to attend for academic mentoring/remediation, but this will not impact their grade for a course or clerkship rotation.

## The Medical School Transcript

- A satisfactorily completed course or clerkship rotation will appear on the medical school transcript as a credit.
- A rotation signed off as “Satisfactory with Performance Deficiencies” will appear as a credit on a student’s medical school transcript.
- A failure on a course or clerkship rotation with remedial requirement will appear on the student’s medical transcript as a RM (remedial) grade and subsequently show as a credit upon successful completion of the remedial work.
- A failure on a mandatory rotation with a required repeat of the complete rotation will appear on the student’s medical school transcript as an F grade. The repeated rotation will be noted on the transcript and subsequently show as a credit upon successful completion.

## The Purposes of Identifying Students with Performance Deficiencies are:

- To ensure that students receive feedback on poor performance
- To provide indication to UME Administration regarding weak student performance. This allows UME to provide monitoring and intervention – such as academic mentoring – to these students during their clerkship training.
- To allow opportunity for identification of problematic professional and/or ethical behaviour or of other forms of poor performance that may not result in unsatisfactory overall rotation evaluation, but that must be addressed.
- To ensure fair and accurate reporting of student performance in transcript records.

## Recording of Results

- **Formative Evaluations:** Individual student results will be included in the student’s permanent file, but will not be used to calculate final course mark and/or reported in the Medical Student Performance Record (MSPR).
- **Summative Evaluations:** Individual student grades and class standings are not reported on student transcripts or provided as part of Canadian Resident Match Service (CaRMS) applications.

## Preparation of Student Evaluations

1. **Blueprinting:** A blueprint or table of specifications is required for each course and clerkship evaluation in the Undergraduate Medical Curriculum. The blueprint should reflect tasks to be evaluated. The “basic” blueprint should be distributed to the course chair, evaluation coordinator, students and teachers at the beginning of the course or clerkship. An “expanded” blueprint that includes the specific diagnoses/diseases to be tested can also be distributed to students and teachers if desired by the course leaders.

Content tested in an evaluation may include any material previously covered in the UME curriculum.

As with all components of the UME program, evaluation content and format should reflect non-prejudicial language and attitudes.

Parallel format examinations are encouraged if each version follows the same blueprint, resulting in similar sampling.

- 2. Exam Construction:** In the preclerkship curriculum, The Director of Assessment and Assistant Dean of Evaluation and Research are responsible for preparing summative student assessments. Formative assessments are created by preclerkship educators, course directors and portfolio leads. Each clerkship committee is responsible for preparing formative and summative student assessments. The examination blueprint should be used to guide item development and selection to ensure congruency with educational objectives including weighting of content. All items used should be congruent with course learning objectives, accurate and of sound technical quality to maximize the psychometric rigor of these examinations. Once constructed, every examination must undergo a pre-administration review.

### **Establishing the Minimum Performance Level (MPL)**

The MPL is an estimation or calculation of the likelihood that the weakest group of students in the class will be able to correctly answer a question. The MPL is *not* a reflection of what the class “should know”, but rather, a reflection of what the weakest students in the class “will know”. Standard setting (MPL assignment) for written formative and summative examinations is performed using one of two methods:

1. Nedelsky technique. For the Nedelsky technique, a minimum of 2 faculty should participate in the standard setting of each item. Each faculty judge pictures the “borderline candidate” who is right on the border of competence and incompetence. They then review the options and eliminate options that they think the borderline candidate could rule out. Each faculty judge’s MPL is determined by dividing 1 by the number of remaining options (i.e. 2 options left =  $\frac{1}{2}$  = 0.5). The overall question MPL is the mean of the MPLs set by all participating faculty judges. The Modified Nedelsky standard setting procedure was used to set the MPL for all MCQ exams prior to July 2018 (i.e., before the Class of 2021 started their medical school training).
2. Hofstee compromise. This approach considers the performance of the current students in the context of the historical (or criterion referenced) MPL for this course or clerkship exam, the borderline student median, and the minimum and maximum acceptable failure rates for students and sets an MPL that is a “compromise” based upon each of these parameters. The borderline student median can be determined in multiple ways including by calculating the historical score on this exam of UofC graduates that were unsuccessful on the MCC Part 1 exam, or by doing a mathematical calculation that estimates the borderline student median.

### **Establishing the Expected Performance Level (EPL)**



The EPL is set after each course in the preclerkship to identify students who could benefit from further support and remediation in advance of final competency committee decisions and final course MPL determinations. EPLs are set using norm referencing, with the exact cut point changing course to course depending on available resources.

### **Identifying Students Requiring Academic Mentoring**

Students who score below a minimal performance recommendation in each preclerkship course are required to meet with an academic mentor and/or the Director of Review.

### **Process of Post-Examination Review**

Following each Course examination (and once per year for each summative clerkship examination), the Director of Student Evaluations and other members of the UME evaluation team perform the following tasks:

1. Psychometric analysis of individual items (difficulty and discrimination indices).
2. Psychometric analysis of examination overall (including reliability and SEM calculation)

The MPL +/- thresholds for academic mentoring is then set and pass/fail/remediation recommendations are made. In the event of a concern regarding the “consequences” of the MPL – such as an unusually high number of students failing an examination – the Assistant Dean of Evaluations and Research or Director of Student Evaluations will meet with the relevant Assistant Dean, Course Chair, +evaluation coordinator, before making recommendations on MPL +/- thresholds for academic mentoring. If this type of meeting is required then the Director of Student Evaluations must discuss this process at the next SEC meeting.

Typically, exam grades will be released to students within 14 working days of completion of the summative examination. An exception to this is during the rewrite/deferral period in which case results may be delayed until after the rewrite/deferrals are complete.

### **Student Representatives and Student Review of Exams**

Feedback from students on evaluations is a key component of content and “response process” validity, in addition to helping improve the quality of our curriculum and evaluation items. One role of the student representatives is to help ensure that the exam content is reflective of the course objectives and includes one single best answer. The student representatives should collect and summarize comments raised by students regarding exam items, and such comments should relate to any ambiguity of the question, lack of corresponding learning objective or inaccuracy of keyed responses. A summary of these comments should be delivered via email to the Director of Student Evaluations and the Evaluations Coordinator. Any changes resulting from this review will apply to all students sitting the examination. Student representatives may report back to

the class confidential details related to an evaluation only with express written consent of the Chair of the SEC.

### **Ongoing Improvement of the Exam Bank**

Prior to the start of each Course (or at least once during the clerkship year), the Director of Student Evaluation and the UME evaluation team will meet with the course chair and/or evaluation coordinator to review each evaluation component of the Course or clerkship. At this meeting the following tasks are performed:

1. Review of difficulty and discrimination for each evaluation item, focusing on problem items.
2. Review of student feedback on evaluation items.
3. Identification of items that need to be reviewed (with recommendations for changes to item and/or distractors).
4. Review of any plans for creation/revision of evaluation items.

### **Evaluation Reporting**

At the end of each SEC meeting, students will be excused, and then a member of the UME evaluation team will briefly review each summative evaluation that has occurred since the previous meeting. This review will include:

1. Percentage of students who failed and/or required academic mentoring.
2. Comparable data from the previous year.
3. Whether or not the MPL/passing threshold was adjusted post-examination.

### **Outcome of Student Evaluations**

Individual student evaluation results are confidential. Individual results are recorded on the student's permanent file and may be released to the student, Assistant and Associate Deans, UME and members of faculty committees responsible for student evaluation, promotion and/or appeals. Other individuals, including faculty advisors or academic mentors may receive copies of the student's examination results only if provided directly by the student.

Group evaluation results may be released to the Clerkship Director and Evaluation Coordinator or Course Director for the relevant course and to faculty responsible for

program evaluation in the MD Program. These data are to be used for quality assurance/improvement purposes only.

### **Consequences of an Unsatisfactory Performance**

Students will have two opportunities to demonstrate satisfactory performance on summative evaluations for a given clerkship. A student who is *unsatisfactory* on a clerkship summative examination is required to complete a repeat summative evaluation. Notification of the time and place for this repeat evaluation will be provided by UME following the release of the results of the final summative evaluation. The repeat evaluation will follow the same due process as established for initial evaluations and the same Reappraisal/appeal process is possible. Sufficient time between evaluations should allow for necessary remedial work as determined by the appropriate course committee. Students with unsatisfactory performance on multiple courses or clerkship shall appear before SARC according to the criteria outlined in the SARC terms of reference.

In preclerkship, students who are at risk of being considered unsatisfactory on a course are offered additional resources and an opportunity to work on areas of performance deficiency. All students are required to complete a review cards deck, where they must repeat all questions that they got wrong on any cumulative cards written examination. Performance and engagement in the remediation program will be shared with the competency committee, as will all subsequent performance during that block. After the competency committee meets (at the end of each block), final MPLs for all courses in that block will be set, and for those that are considered satisfactory with performance deficiencies, additional remediation requirements may be put in place for some students.

### **Consequences of an Unsatisfactory Performance in the Pre-clerkship and Clerkship of the Curriculum**

These are outlined in the SARC terms of reference

[http://www.ucalgary.ca/mdprogram/about-us/ume-policies-guidelines-forms-terms-reference#quickset-field\\_collection\\_quicktabs\\_2](http://www.ucalgary.ca/mdprogram/about-us/ume-policies-guidelines-forms-terms-reference#quickset-field_collection_quicktabs_2)

**All students should be familiar with the policies for promotion outlined in the Terms of Reference of the Student Academic Review Committee**

### **EXAM RE-WRITE SCHEDULE**

Specific dates for all evaluations can be found in the timetable for each year. The re-write period may NOT be deferred for travel, electives or any other plans that the

student scheduled prior to an unsatisfactory exam result.

If a student is scheduled for an elective out of town and will incur a financial penalty by returning for the rewrite they may be allowed to write the exam immediately upon return, usually within the first 3 days, dependent on approval of the Assistant Dean of Clerkship or their designate.

Students with unsatisfactory performance on courses or clerkships may be required to appear before SARC as outlined in the SARC Terms of Reference.

A student who obtains an unsatisfactory rating in a course or clerkship is expected to meet with the Associate Dean, UME or delegate within 2 weeks of receipt of the relevant examination result. During the clerkship year, in the case of unsatisfactory performance, a period of remedial learning may be required prior to the rewrite examination. The relevant Clerkship Director and/or Evaluation Coordinator will be responsible for arranging the appropriate remedial learning.

#### **Exam Security and Invigilation**

The copying of any formative or summative evaluation material by students is strictly forbidden, as is the possession of any evaluation material outside of the examination room. Students who discover any suspicious evaluation materials are expected to report the matter immediately to the Associate Dean, UME or delegate. Invigilators who identify unusual or irregular behaviour during examinations are expected to submit a written report to their manager, who in turn should inform the Director of the SEC and the Associate Dean.

#### **Other Policies not Described in this Document**

Policies regarding student reappraisal and appeal are outlined in the UME Student Evaluations: Reappraisals and Appeals policy and the Procedure for Appeals of Grade Reappraisal Decisions and Academic Assessment Decisions policy. Policies regarding academic conduct including student conduct during examinations are described in the University of Calgary calendar. Students may defer a summative evaluation according to University of Calgary policy. Deferral of a formative examination should follow the same process as for summative evaluations. A deferred formative examination should be written within one week of the originally scheduled date. If the examination cannot be written within one week of the originally scheduled date, the student must meet with Associate Dean or delegate to discuss the need to defer the course. Policies regarding academic accommodations for students with disabilities are outlined by the University of

Calgary Student Accessibility Services.

**Standards**

Refer to the SEC Policy document

**History**

*Approved:* Dr. Christopher Naugler, Associate Dean  
UME Management

*Effective:* **June 15, 2021**