

Departmental Policy

STUDENT EVALUATIONS: DEVELOPMENT AND MAINTENANCE

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|---|--------------------------------|
| Classification Operations | Table of Contents Purpose 1 |
| Approval Authority Associate Dean, UME | Scope 2 |
| Implementation Authority Manager, Undergraduate Medical Education | Definitions 3 |
| Effective Date January 6, 2015 | Policy Statement 4 |
| Latest Revision July 1, 2018 | Special Situations 5 |
| | Responsibilities 6 |
| | Appendices 7 |
| | Procedures 8 |
| | Instructions/Forms 9 |
| | Standards 10 |
| | Parent Policy 11 |
| | Related Policies 12 |
| | Related Information 13 |
| | References 14 |
| | History 15 |

- Purpose** 1 Create an 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:
- UME means the MD program, Cumming School of Medicine with the University of Calgary.
 - MD - Medical 3 year program
 - Approval Authority means the office or officer responsible for approving Undergraduate Medical Education policy and procedures.
 - Implementing Authority means the office and officer responsible for implementing Undergraduate Medical Education policies and procedures.
 - Student Evaluation Committee (SEC)
 - Student Academic Review Committee (SARC)
 - Undergraduate Medical Education Committee (UMEC)
 - ITER – In-training Evaluation Report
 - 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 appeal.

- 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 he/she may submit a Request for Re-Appraisal.
- Satisfactory with Performance Deficiency is used in occasional circumstances in the clerkship year in order to accurately record student performance: A rating of “Satisfactory with Performance Deficiency” may be used in a situation where, in the judgement of the Departmental Clerkship Committee, there is an overall rating of satisfactory performance in the clerkship rotation, 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 for the clerkship and may be considered “Satisfactory with Performance Deficiency” overall even if ITER and written examination components are satisfactory.
- “Unsatisfactory” results in the clerkship will be changes to “Satisfactory with Performance Deficiency” if a student successfully completes required remedial work and/or rewrite examination.
- Incomplete means that a student has not completed all mandatory components of a course or clerkship.
- Canadian Resident Match Services – CaRMS
- Minimum Performance Level - MPL

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 that is administered approximately midway through the course. 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 Office of the Associate Dean, UME.

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

There are two offerings 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 certifying evaluations with briefer duration and/or demonstrations of examination question format. A blueprint will be provided to the students using questions on material covered up to the time of administration.

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

As with summative components, formative evaluations are considered mandatory educational activities. Students who do not participate in formative evaluations will be reported to the Associate Dean, UME or the relevant Assistant Dean. Student conduct during formative evaluations must follow University of Calgary evaluation regulations as would apply during certifying 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 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. 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.
- Questions should aim to test “higher level objectives” such as application and problem solving rather than simple recall of factual material.
- 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 ≥ 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.

Peripatetic Examinations

- The peripatetic examination questions must be included in the blueprint for the relevant course. The peripatetic component should be reflective of the allotted teaching time in the course, with a maximum of 20% contribution to the final grade.

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 patient training, pilot testing of station questions and pre-testing of the scoring checklist.

Instructions/

9 **Preceptor Evaluations**

Forms

- Preceptor evaluations should include global rating of satisfactory/unsatisfactory performance and an anchored rating scale for specific desired competencies.
- Adequate space for 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.
- Courses must use a format for preceptor evaluation that includes standardized “In-training Evaluation Report (ITER)” ratings that are similar across courses.

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 certifying examinations, small group iRATs (individual rapid assessment tool) and gRATs (group rapid assessment tool), 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 certifying 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 minimum performance level. For final overall course results (pre-clerkship and clerkship) students will also receive the class mean and median mark, as well as the number of items on the exam. These results also indicate areas of strengths and weaknesses in each of the identifiable clinical presentations/unit.

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 year 1 and 2 will be reported as either “Satisfactory” or

“Unsatisfactory”.

- Results from year 3 will be reported as “Satisfactory”, “Unsatisfactory”, or “Satisfactory with Performance Deficiency”.
- Based upon their performance, students may be required to attend for academic mentoring, 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 be consistent with the Clinical Presentation Curriculum philosophy and thus should

be organized by clinical presentations and 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. The “expanded” blueprint that includes the specific diagnoses/diseases to be tested should be available to the course chair and evaluation coordinator. Distribution of this version to students and teachers is also encouraged.

Content tested in an evaluation may include any material previously covered in the UME curriculum, provided that this is reflected in the blueprint.

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

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

- 2. Exam Construction:** Each course or clerkship committee is responsible for preparing formative and summative student evaluations. Development and testing of new items on formative examinations is strongly encouraged to replenish and expand the question bank. The examination blueprint should be used to guide item development and selection to ensure congruency with educational objectives including weighting of content. Due to the high-stakes of the certifying examinations (original and re-writes), 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.

Process of Pre-Examination Review for Pre-Clerkship Formative and Summative Written Examinations

Each course committee (including evaluation representative(s) and course chair) will prepare a draft of the written examination (both formative and summative). All examinations must be reviewed by the Exam Review Working Group (ERWG) for final approval. The ERWG minimally consists of:

- One SEC representative familiar with psychometric analysis
- One or two course representatives (normally course chair and/or evaluation representative)
- The UME Evaluation Team. The role of the Evaluation Team is to record the recommendations of the ERWG in the master exam bank.

The ERWG will ensure reliability and validity of exams through a review for:

- item ambiguity and technical quality
- accuracy of examination key
- congruency with learning objectives and exam blueprint
- approval of overall MPL and standard setting procedures

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. Modified Nedelsky technique. For this, a minimum of 3 faculty should participate in the standard setting of each item. Each faculty judge assigns a probability value (from 0-100%) that reflects minimally competent candidates’ ability to eliminate each of the distracter options. These probabilities are then averaged and used to calculate the MPL for each item. Finally, the overall exam MPL is calculated by summing the item MPL’s. This 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 MPL for this course or clerkship exam, the median score on this exam of UofC graduates that were unsuccessful on the MCC Part 1 exam (“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. Beginning with the Class of 2021, this is now the preferred method for setting the MPL for examinations. The exception to this is for new exams or exams that have had major revisions such that historical MPL and borderline student median may not be available or relevant, in which case we will use the Modified Nedelsky technique to establish the initial MPL.

Identifying Students Requiring Academic Mentoring

Beginning with the Class of 2021, minimally performing students will be defined as those within 1 standard error of measurement (SEM) of the MPL. Students within this range will be considered to have passed the Course or clerkship, but are required to review their exam score sheet and to meet with an academic mentor. Students scoring less than 1 SEM below MPL are also required to review their exam score sheet and meet with an academic mentor, but these students will also need to rewrite the summative examination(s).

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 using one of the two techniques described above and pass/fail/remediation recommendations are made. A description of this process and recommendations are then sent to the relevant Assistant Dean, Course Chair, and evaluation coordinator for their approval before being released to students. In the event of a concern regarding the “consequences” of the MPL – such as an unusually high number of students failing an examination – the Director of Student Evaluations will meet with the relevant Assistant Dean, Course Chair, evaluation coordinator, and student representative(s) 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 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. The role of the student representatives on this subcommittee is to help ensure that the exam content has been reflected through the teaching or learning objectives. 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 within 7 days of the examination. The student members of the subcommittee do not have the authority to represent specific student concerns or advocate for specific adjustments to final grades. Any changes resulting from this review will apply to all students sitting the examination and evaluation scores re-calculated and all decisions are considered final. 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

Within one month of completion 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.
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.

At least one month prior to the start of the Course or clerkship year the Director of Student Evaluation and the UME evaluation team will meet with the course chair and/or evaluation coordinator to review the planned changes to evaluation items and/or new items and to make any required adjustments to the evaluation blueprint.

Evaluation Reporting

At each SEC meeting, 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 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 to 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 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 Course or clerkship. A student who is *unsatisfactory* on a Course or clerkship 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 process is possible.

In courses where peripatetic exams are incorporated into the overall grade, the peripatetic exam will be rewritten only if the student was unsatisfactory their original peripatetic exam in that course. If the student was satisfactory on the original peripatetic exam that mark will be used to calculate the students final rewrite grade.

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.

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

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.

The **First Year** rewrites and deferred examinations have 2 scheduled offerings. First offering is scheduled on the last day of spring break before Year 2 begins. Course during this offering include, Course 1, Course 2, Course 3 Deferrals, Medical Skills and Population Health. Second offering is scheduled for the first 2-days of the Year 2 Summer Elective period in Week 3 for Course 3 rewrites only.

The **Second Year** rewrites and deferred examinations have 2 scheduled offerings. First offering is scheduled in Week 1 of Course 5 (August) for Course 4 rewrites & deferred exams only. The second offering is the last day of Year 2 before Clerkship begins for Course 5, Course 6, Course 7, Medical Skills and Applied Evidence Based Medicine

(AEBM).

The **Clerkship Re-write and Deferral Examinations** are scheduled pre-CaRMS in mid-October and the last week in April allowing for remedial and make-up time.

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 pre-clerkship, the student is expected to organize a remedial program in consultation with the UME office to correct this deficiency prior to writing a repeat evaluation. This may involve use of independent study time. Failure to complete a prescribed remedial program is regarded as equivalent to failing the repeat examination. 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 appeal are outlined in the UME Student Evaluations: Reappraisals and Appeals policy and the Medical Student Appeals Committee (MSAC) terms of reference. Policies regarding academic conduct including student conduct during examinations are described in the University of Calgary calendar. Students may defer certifying evaluation according to University of Calgary policy. Deferral of formative examination should follow the same process as for certifying evaluations. 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 the Course Chair and Associate Dean 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. Sylvain Coderre, Associate Dean
UME Management

Effective: **January 22, 2015**