**MATERIALS SCIENCE Ph.D. QUALIFYING EXAMINATION**

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Each year, the Qualifying Examination (QE) is scheduled for the third Thursday of the month, or at least one full week prior to classes starting at the participating institutions, Montana State University (MSU) and Montana Technological University (MTU). The exam is scheduled to take place on the same date and time at both institutions.

The Campus Director must reserve a room for the examination; the room must comfortably seat the number of students who have committed to sit for the 6-hour exam. Because the examination date coincides with the onset of many Fall Semester activities, the reservation must be made early (June is recommended) to secure a quiet, climate-controlled room.

Dr. Erik Grumstrup (Professor of Chemistry and Biochemistry at Montana State University) will assemble the examination in summer 2023. The instructors of record for each of the six core courses (MTSI 501, 502, 503, 511, 512, and 551) email their questions to Dr. Grumstrup by the end of July.

Dr Grumstrup emails the examination to the MTU Campus Director one week prior to the QE date. The Director reviews the exam and, if there are no exceptions, approves the examination. The Campus Director makes copies of the examination for distribution to the students on exam day.

The Campus Director must proctor or arrange for a qualified individual to proctor the exam. The proctor does not answer questions from students about the examination. The examination is divided into two sessions: a morning session (9:00 am to 12:00 noon) and an afternoon session (1:00 to 4:00 pm). The morning session is open notes; the afternoon session is closed notes. The proctors must be prepared to start the exam promptly at the appointed times and to ensure all exam papers are turned in on time.

The Campus Director must sort the completed examinations according to course numbers. The exams are scanned and converted to pdf. The pdf files are then uploaded into the appropriate secure online data sharing folders. The course instructors then download and print the completed examinations in preparation for grading.

Grades are expected to be returned using the secure online data sharing folders by Friday morning of the following week (i.e., approximately one-week turnaround). Occasionally, it becomes necessary for the Campus Directors to prompt recalcitrant faculty members to submit their grades.

After all grades are in and tabulated, the Program Director and Campus Directors review and discuss the results in a telephone conference call. Composite scores are calculated for each student.

To earn an unconditional pass, a student must attain a composite score greater than or equal to 70% and must have scored at least 50% on each individual exam. Students are awarded a “Conditional Pass” in instances where they achieve a composite score of at least 70% but did not score at least 50% on one or more of the individual examinations, or where their composite score is less than 70% but they could meet or exceed the 70% criterion by improving their scores on one or two of their lowest score individual course examinations. Students who do not attain a composite score of 70% or higher and it is mathematically impossible for them to raise their composite score to 70% by retaking no more than the two individual exams with the lowest scores are considered to have failed the QE; their sole recourse is to sit for the QE again the following year. The Directors make these determinations during the telephone conference call.

Students receiving a Conditional Pass must sit for the second “re-take” examinations. The re-take examinations are scheduled to take place in late October or early November. As before, MSU and MTU coordinate the examination to occur on the same day. The Campus Director must inform the instructors that they must prepare new exam questions and then repeat the process as described above.

The Campus Director is responsible for notifying the students of their QE exam performance. In 2019, the Campus Director informed the students that the exam results are available and asked them to come to his office (individually). Each student was presented with a letter and a partially completed QE exam form (see flash drive for examples). Students who received a conditional pass were advised of the examination(s) that they must re-take.