



**Music Graduate Program
Doctoral Candidacy Requirements
Composition, Musicology, Sonic Arts**

The University of Calgary Doctoral Candidacy Regulations (“the Regulations”) govern the conduct of admission to doctoral candidacy at the University of Calgary. This document establishes program-specific requirements associated with the conduct of admission to graduate candidacy in Composition, Musicology, and Sonic Arts under those Regulations.

Statement of Purpose

Admission to candidacy for the doctoral degree is a judgement by the faculty members in the graduate program that the student is prepared to successfully complete the requirements of the doctoral degree program. Subject to any extension allowances, doctoral students must complete all candidacy requirements within 28 months of first registration.

Admission requires that: 1) students have the ability to conceptualize, interpret, critique and synthesize comprehensive, and substantive knowledge that is relevant to their particular discipline and practice; 2) students possess developed creative and technological skills relevant to their particular discipline and practice; 3) students have a well-developed plan for their thesis research, a sound proposal with a well-developed research question, and potential to pursue and complete original independent research at the doctoral level.

Admission to Candidacy in Composition, Musicology, and Sonic Arts is made up of four components:

- 1)** Completion of all course and language requirements;
- 2)** Field of Study written examinations;
- 3)** A written Thesis Proposal;
- 4)** The Oral Examination of the Thesis Proposal.

All doctoral students in Composition, Musicology, and Sonic Arts must successfully complete the first three components before they are granted permission to take the Oral Examination of the Thesis Proposal. Students are strongly encouraged to complete their course and language requirements during the first 16 months of entering the program, so that they can concentrate on preparation for the Field of Study examinations and the Thesis Proposal during the ensuing 12 months. Extensions may be requested; see below for more information.

Timeline leading up to the Oral Examination of the Thesis Proposal

1. Within 16 months of entering the program, the student must have completed the course and language requirements. During this period, the student is responsible for ensuring adequate preparation for all requirements leading up to and including the Oral Examination of the Thesis

Proposal under the guidance of the Supervisor. Within 20 months of entering program, the student will have completed the Field of Study Examinations.

2. Three months before the planned date of the Oral Examination of the Thesis Proposal, the student must submit the Thesis Proposal to the Supervisory Committee for approval. The committee must approve the thesis proposal before the Oral Examination of the Thesis Proposal may proceed.
3. Within two months of the planned date of the Oral Examination of the Thesis Proposal, the Oral Examination of the Thesis Proposal Committee must be struck.
4. The student's Thesis Proposal must be made available to members of the Oral Examination Committee of the Thesis Proposal no less than four weeks before the date of the Oral Examination of the Thesis Proposal.

1. Completion of All Course and Language Requirements

Course requirements

The Supervisor will ascertain that the student has successfully completed all required course work as stated in the Graduate Calendar entry (see: <http://www.ucalgary.ca/pubs/calendar/grad/current/music-musi.html>) and will inform the GPA.

Language competency

Admission to Candidacy in Musicology requires a basic ability to read two languages other than English, and to Candidacy in Composition and Sonic Arts a basic ability to read one language other than English (traditionally French, German or Italian). Acceptable language competency, as required by the discipline, is evaluated by way of a translation/summarizing test administered by a faculty member of the Music Division assigned by the Chair of the Music Division. The Supervisor will ascertain that the student has successfully completed the language competency requirement (see Music Grad Handbook https://scpa.ucalgary.ca/sites/scpa.ucalgary.ca/files/music_grad_handbook_-_sept_2017.pdf) and will inform the GPA.

2. Field of Study Examinations

The purpose of the Field of Study Written Examinations is to determine that the student has broad, comprehensive knowledge in those areas of music that have been specified for the examination. It will test the student's skill in terms of music analysis, her/his ability to synthesise information, think critically and construct compelling arguments (Composition, Musicology, Sonics Arts), and demonstrate skills and knowledge in composition and pertinent aspects of music technology (Composition, Sonic Arts) within a limited period of time.

Doctoral students in Composition and Sonics Arts will complete four (4) Field of Study Examinations taken over a four-week period. Three written/applied examinations will test creative skills in composition, technological aptitude and skills, creative applications of sound design and composition, and analytical skills in written form. A fourth oral examination will test score reading and music analysis skills (Composition) or the student's knowledge of Sonic Arts practices and technologies (Sonic Arts). The three written Field of Study Examinations are take-home examinations each with a time limit of one week. The fourth oral Field of Study Examination is on-site with a duration of 2 hours. All four examinations must be successfully completed before the student proceeds to the Oral Examination of the Thesis Proposal.

Doctoral students in Musicology will complete three (3) Field of Study Written Examinations taken over a three-week period. One of the written examinations must deal with music analysis. All three Field of Study written examinations are open-book and can be written at home. All three must be successfully completed before the student proceeds to the Oral Examination of the Thesis Proposal.

Composition of the Field of Study Examinations Evaluation Committee

The Field of Study Examinations Evaluation Committee consists of the Supervisory Committee plus two additional members. The additional members of the committee include one other faculty member from the Music Division of the School of Creative and Performing Arts and one faculty member external to the Music Division. The two additional members will be chosen by the Chair of the Music Division.

Schedule for the Field of Study Examinations

No later than three months before the Oral Examination of the Thesis Proposal, the student will complete the Field of Study (FoS) Examinations as per the schedule below. The Field of Study Examinations are to be completed over a three (Musicology) or four (Composition, Sonic Arts) week period. Questions for each written FoS examination (for Musicology, Composition, and Sonic Arts) will be available to the student at 9 am on a specified Monday from the Graduate Administrator (GPA) and must be returned to the GPA by 9 pm on the Monday of the following week. The fourth oral examination in Composition and Sonic Arts is scheduled at the end of the fourth week of the examination period.

It is the student's responsibility to submit her/his written answers to all Field of Study Written Examinations in Composition, Musicology, and Sonic Arts to the GPA according to the schedule established by the Supervisory Committee. The usual university regulations concerning illness or grave family problems apply. In cases such as these, the GPD can allow extensions.

Defining the Body of Knowledge and the Procedure of the Field of Study Examinations

The Supervisory Committee is responsible for establishing the content of the Field of Study Examinations in accordance with the following procedures particular to each sub-discipline.

Composition

The Field of Study (FoS) Examinations in Composition consist of four (4) tasks that serve to evaluate the student's knowledge and skills in the discipline of music composition, including demonstration of compositional techniques, knowledge of composing for instruments, voices and current music technologies, analysis of music compositions in the form of scores, recordings and technical schemata, and demonstration of a broad historical knowledge of the repertoire and composers making up the components of the examinations.

FoS Exam 1: Writing of a Music Composition of modest duration (approximately 5 minutes) for an assigned instrumentation/medium. To be submitted at the end of the first week.

FoS Exam 2: A Skill-Oriented Task related to the compositional and/or technological skills involved in the area of the student's anticipated thesis research. To be submitted at the end of the second week.

FoS Exam 3: Writing of a Research Essay of not more than 12 pages providing a comprehensive analytical discussion of a music composition chosen by the Supervisory Committee. The genre and nature of the composition, in most cases, is related to the compositional and/or

technological skills involved in the area of the student's anticipated thesis research. To be submitted at the end of the third week.

FoS Exam 4: At the beginning of the Field of Study Examination period (Week 1), the student is assigned five compositions, selected by the Supervisory Committee, to be analyzed and prepared for presentation and questioning during an oral examination at the end of Week 4. The Field of Studies Examination Evaluation Committee meets with the student at an assigned time at the end of the fourth week of the Field of Study Examinations. The meeting is chaired by a Neutral Chair assigned by the Chair of the Music Division. The meeting has a duration of no more than two hours. The oral examination involves an evaluation of the student's knowledge of the musical materials and procedures employed in the five assigned compositions and their ability to demonstrate this knowledge through active discussion regarding the music score and related materials.

Musicology

No later than sixteen months after having entered program, the Supervisor must give the student two lists of musicological topics drawn up by the Supervisory Committee:

List A: covers the period from the Middle Ages to the French Revolution

List B: covers the period from the French Revolution to the present.

Each list will be made up of at least six topics. The student will be asked to choose two topics from each list. During the ensuing four weeks the student will draw up one bibliography for each of the four topics from Lists A and B with guidance from the Supervisory Committee members. Within six weeks of choosing the topics, the four bibliographies must be finalized. Each bibliography should present a balanced list of at least twenty sources that reflect scholarly traditions and current trends. Sources in languages other than English are not required as part of each bibliography. However, the four bibliographies taken together should show that the student is capable of dealing with the literature in more than one language. The bibliographies constitute the body of knowledge on which the student will be examined in the first two Field of Study Examinations.

The third Field of Study Examination is a quick study analysis examination in which the student will have one week to prepare an analysis of a work using methods appropriate to the style and compositional technique employed in the music. For this examination, the student will be asked to choose whether the analytical component will be based on pre-tonal, tonal or post-tonal music. No bibliography is required for the quick study analysis component. For this examination, the student is expected to know current methods for the analysis of the type of music that the s/he has chosen (e.g. pre-tonal, tonal, post-tonal).

Six weeks after approval of the four bibliographies, the student will complete the three (3) Field of Study Written Examinations over a three-week period.

FoS Exam 1: At the beginning of the first week, the student will be given four questions drawn up by the Supervisory Committee from the two topics on List A, two questions pertaining to each topic. The Graduate Program Administrator (GPA) will transmit the questions to the student, who will be asked to choose one question. The student must prepare a concise typescript answer (ca. 5000 words). To be submitted at the end of the first week.

FoS Exam 2: At the beginning of the second week the same procedure will be followed with List B. Together the two answers make up the first two Field of Study Written Examinations. The student will keep a copy of both answers. To be submitted at the end of the second week.

FoS Exam 3: At the beginning of the third week, the student will pick up the quick study analysis examination questions from the Graduate Program Administrator. The student will have one week to complete this third Field of Study Written Examination. The Supervisory Committee will present the student with three pieces, selected from the category the student has chosen (pre-tonal, tonal, atonal). The student will choose one piece and will have one week to prepare an analysis. The analysis may be presented in the form of a short essay (ca. 5000 words) or use non-verbal means, such as graphs, diagrams, short scores, etc. If the student chooses the latter, the analysis may be presented as a handwritten document. The student will keep a copy of the analysis. To be submitted at the end of the third week.

Sonic Arts

The Field of Study Examinations in Sonic Arts consist of four (4) tasks that serve to evaluate the student's knowledge and skills in the creative application and research of music and sound art employing a variety of technologies, and may include demonstration of a knowledge of composing and designing for instruments, voices and current music technologies, analysis of compositions and sonic arts works in the form of scores, recordings and technical schemata, and demonstration of a broad historical knowledge of the repertoire, practices, composers, and designers making up the components of the examinations.

FoS Exam 1: Completion of a Creative Task employing concepts and technology current in Sonic Arts practice. These may include, for example, audio and audiovisual design, electroacoustic composition, interactive design and performance, soundscape composition, live electronic music performance, and network music design and performance. The task will demonstrate the student's skill in the use of selected technologies in the creation of a Sonic Arts artistic production or performance that is related to the area of the student's anticipated thesis research. To be submitted at the end of the first week.

FoS Exam 2: Completion of a Studio-Based, Skill-Oriented Task that involves conceptual and technological skills related to the area of the student's anticipated thesis research. To be submitted at the end of the second week.

FoS Exam 3: Writing of a Research Essay of not more than 12 pages providing a comprehensive discussion of a Sonic Arts practice or creative work. The genre of the practice or work assigned, in most cases, is related to the practice and technological skills involved in the area of the student's anticipated thesis research. To be submitted at the end of the third week.

FoS Exam 4: At the beginning of the Field of Study Examination period (Week 1), the student is assigned four major Sonic Arts practices and/or creative works selected by the Supervisory Committee, to be analyzed and prepared for presentation and questioning during an oral examination at the end of Week 4. The Field of Study Examinations Evaluation Committee meets with the student at an assigned time at the end of the fourth week of the Field of Study Examinations. The meeting is chaired by a neutral chair assigned by the Chair of the Music Division. The meeting has a duration of no more than two hours. The oral examination involves an evaluation of the student's knowledge of the musical and technological materials, concepts and procedures of the four assigned Sonic Arts practices and/or creative works and their ability

to demonstrate this knowledge through active discussion regarding the materials of the practice or work, which may include music scores, technical schematics, software programs, hardware devices, network protocols, and performance documentation.

Assessment of the Field of Study Examinations

The assessment of the Field of Study Written Examinations is on a Pass/Fail basis. Each of the three (Musicology) or four (Composition, Sonic Arts) examinations will be assessed separately. The Supervisory Committee will read the written answers individually and submit their written evaluation to the GPA. If at most only one evaluator indicates a fail on one or more of the examinations, the student will pass. If two or more evaluators indicate a fail on one or more of the examinations, the student will be required to retake the failed examination(s). The assessment of the Field of Study Examinations must be transmitted in writing by the Supervisor to the Graduate Program Director upon completion of the examination period. The Graduate Program Director must transmit the assessment of the Field of Study Examinations to the student within one week of having completed the third (Musicology) or fourth (Composition, Sonic Arts) examination.

Evaluation Criteria to Pass the Field of Study Examinations

Composition

The criteria for a pass on the four Field of Study Examinations in Composition are the following:

FoS Exam 1 (Music Composition): The music composition must exhibit skilled and imaginative control and deployment of musical materials and form as well as idiomatic instrumental/vocal or technological writing as indicated by the limitations and specifications of the examination exercise. The score must demonstrate a thorough knowledge of the appropriate details and conventions of music notation appropriate to the required task.

FoS Exam 2 (Skill-Oriented Task): The submitted work must successfully demonstrate a particular compositional and/or technological skill, must demonstrate a thorough knowledge and competent handling of the technologies and materials required for the task, as well as a skillful and coherent control and design of the resulting outcome.

FoS Exam 3 (Research Essay): The essay must employ appropriate language and analytical techniques in a detailed and thorough discussion of the materials, structural features, conceptual foundation and other salient features of the assigned music composition. The student may discuss specific stylistic and historical features of the composition in question. While acknowledging published analytical and theoretical work, the essay should convey original insight.

FoS Exam 4 (Oral Examination of Music Analyses): In response to questions by members of the Supervisory Committee, the student must demonstrate a use of analytic vocabulary and methodology that is appropriate for a discussion of each of the five assigned compositions. The student must discuss the significant features of each composition including: pitch, motivic/thematic content, form, texture, technologies employed, and the interrelationship of these components in the creation of local and global coherence and cohesion in the composition. The student will also be expected to demonstrate a knowledge of stylistic features and the historical context of each composition in question. It is important to note that this examination is distinct from the Week 3 Research Essay in its evaluation of the student's

competency in navigating and elucidating for the examiners the notated scores of the compositions as well as any ancillary documents such as electronic music schematics and computer code employed in the pieces.

Musicology

The criteria for a pass on the three Field of Study Examinations in Musicology are the following:

FoS Exams 1 and 2 (Research Essays): The answers to both questions must demonstrate thorough knowledge of the selected literature, an ability to weigh evidence and synthesize complex issues, a familiarity with relevant musical repertoire, as well as an awareness of scholarly traditions and current tendencies within the discipline. The research essays must demonstrate impeccable bibliographic literacy and show that the student is capable of dealing critically with source material and secondary literature in more than one language.

FoS Exam 3 (Quick Study Analysis): The student must prepare an analytical essay that discusses the significant structural features of the work: pitch, motivic/thematic content, form, texture and other salient features of the composition. The essay must demonstrate thorough knowledge of the chosen analytical method, as well as skill in its application. The student may discuss specific stylistic aspects of the work in question. While acknowledging published analytical and theoretical work, the essay should also convey original insight.

Sonic Arts

The criteria for a pass on the four Field of Study Examinations in Sonic Arts are the following:

FoS Exam 1 (Creative Task): The results of the task must exhibit skilled and imaginative control and deployment of the assigned technologies, media and concepts, and clarity in the creative objectives. The effectiveness of the design process and the quality of the creative result will both be assessed.

FoS Exam 2 (Skilled-Oriented Task): The results of the task must demonstrate a thorough knowledge and competent and imaginative handling of the technologies and techniques required for the task, as well as a coherent design of the resulting outcome.

FoS Exam 3 (Research Essay): The essay must employ appropriate language and analytical techniques in a detailed and thorough discussion of the conceptual and creative strategies involved in the assigned Sonic Arts practice or creative work, as well as the social and historical context, and the technologies and design methodologies employed in the creation, production and performance of the practice or work. While acknowledging published analytical and theoretical work, the essay should convey original insight.

FoS Exam 4 (Oral Examination of Sonic Arts Practices/Creative Works): In response to questions by members of the Supervisory Committee, the student must demonstrate a use of analytic vocabulary and methodology that is appropriate for a discussion of each of the four assigned Sonic Arts practices and/or creative works. The student must discuss the conceptual and creative strategies and techniques as well as the technologies employed in the creation, production and performance of each practice or work. The examiners will expect the student to make use of a research vocabulary that is appropriate for each assigned practice or work. It is important to note that this examination is distinct from the Week 3 Research Essay in its

evaluation of the student's competency in navigating and elucidating for the examiners the notated scores, electronic music schematics, computer code and other prescribed documents employed in the practices and/or creative works.

Failed Field of Study Examinations

In the event of one or more failed Field of Study Written Examinations, the Supervisor will inform the GPD in writing. The student will be allowed one retake of the failed Field of Study Examination(s). The Supervisory Committee will specify remedial action to help the student retake the Field of Study Examination(s). The Supervisory Committee may suggest further reading and preparation in specific areas, will provide an action plan, and will set a retake and resubmission date in consultation with the GPD. This may take place no sooner than 2 months and must be completed no later than 6 months from the date of the first examination. The student will be required to withdraw from the program upon a second failure of the Field of Study Examination(s) as outlined in the above section on Assessment of the Field of Study Examinations.

Appeal of a Failed Field of Study Examination

If the outcome of any component of the Candidacy Requirements relating to the Thesis Proposal or the Field of Study is a fail, the student has the right to appeal the decision to the Faculty of Graduate Studies. Procedures for appeal are described in the Graduate Calendar under [Academic Regulations](#).

3. Thesis Proposal

The Thesis Proposal will be prepared by the student with guidance from the Supervisory Committee. The student must submit the Thesis Proposal to her/his Supervisory Committee for approval three months before the planned date of the Oral Examination of the Thesis Proposal. The Supervisory Committee will have four weeks to approve the Thesis Proposal. During that time, committee members may continue to suggest changes or improvements to the proposal in order to achieve a workable doctoral research plan. The Supervisory Committee is strongly encouraged to come to a consensual evaluation of the Thesis Proposal. However, if at most one member refuses to approve the proposal, it will be considered approved. If more than one member refuses to approve the proposal, the student will continue working on the proposal.

The Oral Examination of the Thesis Proposal will be scheduled after the Supervisory Committee has approved the Thesis Proposal and has agreed that the student is sufficiently prepared to take the Oral Examination of the Thesis Proposal. The Thesis Proposal must be accepted by the Supervisory Committee and the Oral Examination of the Thesis Proposal successful completed and passed no later than 28 months from the beginning of the student's program. (See Extension to Candidacy Requirement Deadline below.)

Format of the Thesis Proposal

The Thesis Proposal consists of a concise overview in scholarly format of the research project that will provide the basis for writing the thesis. The proposal should be eight to twelve pages (single spaced at 12pts) and be followed by an extensive bibliography providing tangible evidence that the project is well-grounded in the current literature. The proposal should refer liberally to these sources and should be structured using the following categories: 1. research statement/question/problematic; 2. theoretical criteria and contextual/historical background, including a review of relevant literature; 3. methodology and timeline; and, 4. proposed research outcomes.

Criteria for approval of the Thesis Proposal

The criteria for approval of the Thesis Proposal are:

- the proposal should present a concise statement of the goals or purpose of the research project;
- the primary objects of study should be clearly identified and justified;
- the research project must be set in a clear theoretical framework and must be well-grounded in current literature;
- that the project is feasible and that the thesis can be completed by the particular student within the time frame identified by the Faculty of Graduate Studies.

If the Thesis Proposal does not meet the above criteria, it will not be approved and revisions or changes will be required. The student cannot proceed to the Oral Examination of the Thesis Proposal until the Thesis Proposal meets the Supervisory Committee's approval. If, after three submissions of the Thesis Proposal (not to exceed 28 months from the beginning of the student's program), the Supervisory Committee has not achieved a consensus that the Thesis Proposal can be approved, the student will be required to withdraw from the program.

4. The Oral Examination of the Thesis Proposal

The Oral Examination of the Thesis Proposal lasts no more than two hours, not including post examination deliberations. It is the Supervisor's responsibility to ensure that the final version of the approved Thesis Proposal is available to all examination committee members at least four weeks before the Oral Examination.

Composition of the Oral Examination of the Thesis Proposal Committee

The Oral Examination of the Thesis Proposal Committee consists of the Supervisory Committee plus two additional members and is chaired by a Neutral Chair. The additional members of the committee include one other faculty member from the Music Division of the School of Creative and Performing Arts and one faculty member external to the Music Division. The two additional members will be chosen by the Chair of the Music Division.

Process of the Oral Examination of the Thesis Proposal

It is the Supervisor's responsibility to explain the purpose of the Oral Examination of the Thesis Proposal to the student, to provide information about the procedure to the student and the examination committee members, and to arrange a convenient time and place for the examination. The examination normally commences with a 15-minute presentation of the Thesis Proposal by the student. The examination continues with rounds of questions on the Thesis Proposal from the examination committee to the student. Only members of the examination committee are permitted to question the student. All examiners will be given an opportunity to question the student. The Neutral Chair will ensure that the examination proceeds fairly and efficiently.

Questions to the student should be clear and succinct. The student should be given reasonable time to answer. If the student has understood the question and cannot answer, the examiner should pass to another question and not attempt to extract an answer by prolonged interrogation, or by leading the student. The Neutral Chair should guard against any tendency of examiners to interact with each other instead of concentrating on the examination of the student.

At the end of the examination, the student will be asked to withdraw from the room while the committee deliberates on the student's performance. Before any discussion of the student's performance, each examiner must give their preliminary recommendation of Pass or Fail by secret ballot. This provides the committee with a frame of opinion upon which to base a full discussion of the student's performance during which each examiner may provide their input on the student's performance. Upon a final vote, each examiner must declare a recommendation of Pass or Fail on the student's performance and decide if the student has passed the Oral Examination of the Thesis Proposal. The Supervisor is a voting member. The Neutral Chair is a non-voting member. Every effort should be made to reach a unanimous recommendation.

Assessment of the Oral Examination of the Thesis Proposal

A successful Oral Examination of the Thesis Proposal is one in which the student is capable of clearly demonstrating, through his/her oral answers, mastery over the subject matter on which they have been questioned and in the fundamental areas that underpin the thesis proposal. If the student's oral answers do not meet these criteria, s/he will be given a fail on the Oral Examination of the Thesis Proposal.

Immediately following the Oral Examination of the Thesis Proposal, the Neutral Chair will inform the student if s/he has received a:

- a) PASS — The student's oral performance is evaluated as demonstrating that s/he is ready to proceed to a thesis. Should the outcome of the final vote include no more than one negative vote, the student will pass.
- b) FAIL — Should the outcome include two or more negative votes, the committee's Recommendation to the Graduate Program Director will be a fail for the Oral Examination of the Thesis Proposal. The GPD can uphold the fail in the case of a clear fail or refer to FGS for decision in the case of an unclear fail. The student will be allowed a retake of the Oral Examination of the Thesis Proposal. This may take place no sooner than 2 months and must be completed no later than 6 months from the date of the first examination. A student will be required to withdraw from the program upon a second failure.

A recommendation of fail requires that, within five working days:

- each examiner submits a confidential written report to the Graduate Program Director, copied to the Supervisor, detailing the reasons for her/his vote.
- the Neutral Chair must also submit a written report of the examination procedures to the Graduate Program Director.

Appeal of Oral Examination

If the outcome of any component of the Candidacy Requirements relating to the Thesis Proposal or the Field of Study is a fail, the student has the right to appeal the decision to the Faculty of Graduate Studies. Procedures for appeal are described in the Graduate Calendar under [Academic Regulations](#).

Extension to Candidacy Requirement Deadline

Students who will not complete their candidacy requirements by the end of their 28th month in the program must have an extension request approved by FGS. When requesting an extension, the student and Supervisor should discuss an approximate date of the Oral Examination of the Thesis Proposal and plan the extension request around that date. Once a date has been decided, the extension request form (http://grad.ucdalgary.ca/sites/grad.ucalgary.ca/files/r_extension_request.pdf) should be completed with an explanation of the reasons for the delay. A detailed time line for successful completion of the

requirements should be submitted with the extension request. It must be signed by the Supervisor and the GPD. The completed and signed form should be submitted to the GPA to be sent to FGS for approval. Please note that the form should be submitted by the end of the 27th month in the program to allow time for processing.