Appendix A: New course proposals
New Course Proposal Template

The following information is required for all new course proposals. To facilitate the review/approval process, please use the headings below (and omit the italicized explanations below each heading).

1. **Program:** Digital Media Program

2. **Course Number:** DMG 5010

3. **Credit Value:** 3.0

4. **Long Course Title:** Foundations of Digital Media

5. **Short Course Title:** Foundations of Digital Media

6. **Effective Session:** Fall 2016

7. **Calendar (Short) Course Description:**
   This is the description of the course as it will appear in the University course repository and related publications. Calendar (short) course descriptions should be written in the present tense and may be a maximum of 60 words. Please include information with respect to any pre-/co-requisites and/or crosslisting or integration in the course description. Please indicate if the language of instruction is other than English.

   Students attain core literacy in mathematical, systems/process, and computational bases for digital media, including sound, image, and 3D environments, and learn the essential skills of postgraduate-level research in areas of digital media and computational arts. Core literacies include: DSP, sound synthesis, FFT, the graphics pipeline, transformations, lighting, shading, and procedural methods. These core literacies support work across areas including information and systems theory, digital signal processing, 3D geometry, software design, acoustics, simulation and complex systems, networking, human-computer interaction, etc. Core literacies are contextualized by reference to exemplary projects in diverse practices of computational art, music, video games, information visualization, web-based media, responsive architecture, physical computing, etc., including the examination of landmark texts and projects in digital media, computational arts and culture spanning the past century, addressing the continual overlap between artistic and scientific practices. Literacy is evaluated through the ability to understand and transfer published research in these fields into creative applications, recreating established research results, projects, or works of specific interest to the student’s research area(s).

8. **Expanded Course Description:**
   This is the detailed course description that will be published in course outlines, program handbooks, etc.

   Students attain core literacy in mathematical, systems/process, and computational bases for digital media, including sound, image, and 3D environments, and learn the essential skills of postgraduate-level research in
areas of digital media and computational arts. Core literacies include: DSP, sound synthesis, FFT, the graphics pipeline, transformations, lighting, shading, and procedural methods. These core literacies support work across areas including information and systems theory, digital signal processing, 3D geometry, software design, acoustics, simulation and complex systems, networking, human-computer interaction, etc. Core literacies are contextualized by reference to exemplary projects in diverse practices of computational art, music, video games, information visualization, web-based media, responsive architecture, physical computing, etc., including the examination of landmark texts and projects in digital media, computational arts and culture spanning the past century, addressing the continual overlap between artistic and scientific practices. Literacy is evaluated through the ability to understand and transfer published research in these fields into creative applications, recreating established research results, projects, or works of specific interest to the student’s research area(s).

9. **Evaluation:**

   Please supply a detailed breakdown of course requirements, including the type and percentage value of each assignment. The expectation is that course assignments can normally be accomplished within the course period. If applicable, details regarding expectations and corresponding grading requirements with respect to attendance and participation should be provided.

<table>
<thead>
<tr>
<th>COURSE EVALUATION</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes:</td>
<td>20%</td>
</tr>
<tr>
<td>Assignments</td>
<td>40%</td>
</tr>
<tr>
<td>Final Research Paper:</td>
<td>20%</td>
</tr>
<tr>
<td>Final Creative Project:</td>
<td>20%</td>
</tr>
</tbody>
</table>

**COURSE REQUIREMENTS**

1) The quizzes that students take are used to test a conceptual understanding of the core mathematical and theoretical concepts of the course, that support work in systems theory, digital signal processing, 3D geometry, software design, acoustics, simulation and complex systems, networking, human-computer interaction, etc.

2) The assignments that students engage in are used to apply the mathematical and theoretical concepts of the course to experiential outcomes in order to solidify the learning experience.

3) The final paper allows the student to research one particular topic area (chosen in consultation of the instructor) more thoroughly, creating an 8-12 page paper with scholarly citations on the topic area.

4) The final creative project is a test of literacy and the student's ability to understand and transfer published research in Digital Media into creative applications. It is slightly larger in scope than the smaller assignments.

10. **Integrated Courses:**
Graduate courses may be integrated only with undergraduate courses at the 4000-level, where it is understood that 4000-level indicates an advanced level. Graduate students will be expected to do work at a higher level than undergraduates. If the proposed course is to be integrated, please provide a grading scheme that clearly differentiates between the work that undergraduate and graduate students perform, including a description of how the work performed by graduate students is at a higher level. As well, please indicate the course information for the undergraduate course (i.e., Faculty/unit/course number/credit value) and include a statement from the relevant undergraduate chair or undergraduate director indicating agreement to the integration.

N/A

11. Rationale:

Please indicate how the proposed course will contribute to the academic objectives of the program. As well, please indicate the relationship of the proposed course to other existing options, particularly with respect to focus/content/approach. If overlap with other existing courses exists, please indicate the nature and extent of consultation that has taken place.

The Digital Media graduate program's academic objectives include promotion of an interdisciplinary approach to computational art-making and technology development, providing students with 21st century “real-world” skills such as creativity, critical thinking and collaboration. To work deeply in the area of computational arts means equipping students to bridge art, science and engineering practices, which requires a foundation in areas of mathematical and computational theory as well as human-computer interaction as they intersect with world of digital art-making. This course creates the context for our students to ensure that they have the conceptual and practical skills necessary for advanced graduate research in the program.

12. Faculty Resources:

Provide the names of faculty members in your program qualified to teach this course. Stipulate the frequency with which you expect this course to be offered, including the impact that this course will have on faculty resources.

Frequency:
Yearly

Faculty:
Baljko, Brixey, Faloutsos, Hosale, Kyan, Van Nort, Wakefield

13. Crosslisted Courses:

Crosslisted courses are offered between two or more graduate programs. For crosslisted courses, please include a statement of agreement from the director of the other graduate program(s).

N/A

14. Bibliography and Library Statement:
Please provide an appropriate and up-to-date bibliography in standard format. A statement from the University librarian responsible for the subject area certifying that adequate library resources are available for the new course must be provided.

**Bibliography**


**15. Physical Resources:**

Smart classroom.
New Course Proposal Template

The following information is required for all new course proposals. To facilitate the review/approval process, please use the headings below (and omit the italicized explanations below each heading).

1. Program: Digital Media Program
2. Course Number: DMG 5020
3. Credit Value: 3.0
4. Long Course Title: Vertical Studio-Lab I
5. Short Course Title: Vertical Studio-Lab I
6. Effective Session: Fall 2016
7. Calendar (Short) Course Description:
   This is the description of the course as it will appear in the University course repository and related publications. Calendar (short) course descriptions should be written in the present tense and may be a maximum of 60 words. Please include information with respect to any pre-/co-requisites and/or crosslisting or integration in the course description. Please indicate if the language of instruction is other than English.

   Students will lead a team of Masters students working collaboratively on a large-scale project that tackles a well-defined research problem spanning art and science methods and practices. Students are expected to take leadership roles. The problem domain will be defined by contexts such as a research laboratory of a Digital Media faculty member or an outside organization, in order to explore a range of research approaches and issues, professional and research ethics, and reflective practice within academic, professional and arts contexts. An important component is the discussion of critical issues related to cultural interactions with new and emerging technologies, including an appreciation of how art-making practices have shaped, and been shaped by, trajectories of technological change. Advanced Vertical Studio/Lab I will normally be taken in the second year of the program. There is a possibility for student teams to be co-supervised by program faculty and a program associate, which is a practitioner from an outside organization (for-profit - Ubisoft, not-for-profit, NGO, arts festival, trade organization, artist collective, design group, museum, MCC). Program associates may not be the sole supervisor.

8. Expanded Course Description:
   This is the detailed course description that will be published in course outlines, program handbooks, etc.

   Students will lead a team of Masters students working collaboratively on a large-scale project that tackles a well-defined research problem spanning art and science methods and practices. Students are expected to take leadership roles. The problem domain will be defined by contexts such as a research laboratory of a Digital Media faculty member or an outside organization, in order to explore a range of research approaches and issues, professional and research ethics, and reflective practice within academic, professional and arts contexts. An important component is the discussion of critical issues related to cultural interactions with new
and emerging technologies, including an appreciation of how art-making practices have shaped, and been shaped by, trajectories of technological change. Advanced Vertical Studio/Lab I will normally be taken in the second year of the program. There is a possibility for student teams to be co-supervised by program faculty and a program associate, which is a practitioner from an outside organization (for-profit - Ubisoft, not-for-profit, NGO, arts festival, trade organization, artist collective, design group, museum, MCC). Program associates may not be the sole supervisor.

9. **Evaluation:**

Please supply a detailed breakdown of course requirements, including the type and percentage value of each assignment. The expectation is that course assignments can normally be accomplished within the course period. If applicable, details regarding expectations and corresponding grading requirements with respect to attendance and participation should be provided.

**COURSE EVALUATION**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrations/Proposals:</td>
<td>40%</td>
</tr>
<tr>
<td>Final Research Paper:</td>
<td>30%</td>
</tr>
<tr>
<td>Final Creative Project:</td>
<td>30%</td>
</tr>
</tbody>
</table>

**COURSE REQUIREMENTS**

1) **In-Progress Demonstrations/Proposals** – Throughout the course, students will present their in-progress project demonstrations and proposals. Demonstrations allow for critical feedback of artistic and technical work, while proposals are speculative thought experiments designed at guiding collective discussion of potential directions for the larger collaborative work.

2) **Final Research Paper** – a 10-15 page paper that presents a critical analysis of the student's specific role within the project, through one of the conceptual lenses put forth in the course. Paper will synthesize from among the assigned readings as well as outside scholarly sources, and will address the final project as a case study.

3) **Final Project** – Students will complete, present and document their contribution to the larger research project. Their project should directly engage with the theoretical concepts discussed in the research paper, and should contribute positively to the larger collaborative work. The grading is based on the conceptual, technical or artistic rigor of the final product, as well as its presentation and successful documentation.

10. **Integrated Courses:**

Graduate courses may be integrated only with undergraduate courses at the 4000-level, where it is understood that 4000-level indicates an advanced level. Graduate students will be expected to do work at a higher level than undergraduates. If the proposed course is to be integrated, please provide a grading scheme that clearly differentiates between the work that undergraduate and graduate students perform, including a description of how the work performed by graduate students is at a higher level. As well, please indicate the course information for the undergraduate course (i.e., Faculty/unit/course number/credit value) and include a statement from the relevant undergraduate chair or undergraduate director indicating agreement to the integration.
11. Rationale:
Please indicate how the proposed course will contribute to the academic objectives of the program. As well, please indicate the relationship of the proposed course to other existing options, particularly with respect to focus/content/approach. If overlap with other existing courses exists, please indicate the nature and extent of consultation that has taken place.

The Digital Media graduate program's academic objectives include promotion of an interdisciplinary approach to computational art-making and technology development, providing students with 21st century “real-world” skills such as creativity, critical thinking and collaboration. The proposed course is the primary context for students to engage in collaborative, interdisciplinary work that merges methodologies from research-creation and scientific practice. It does this through application to a professional context defined by a contemporary research question or major artwork. The course further is required for all incoming Masters and PhD students, ensuring a context for students to engage their peers in a rigorous environment of making. The specific context of focus will vary from year to year depending on the faculty teaching the course, and will be chosen so as to complement and build upon other collaborative project-based course initiatives that are being offered within a given year.

12. Faculty Resources:
Provide the names of faculty members in your program qualified to teach this course. Stipulate the frequency with which you expect this course to be offered, including the impact that this course will have on faculty resources.

Frequency:
Yearly

Faculty:
Shawn Brixey
Mark-David Hosale
Michael Longford
Don Sinclair
Nell Tenhaaf
Doug Van Nort
Graham Wakefield

13. Crosslisted Courses:
Crosslisted courses are offered between two or more graduate programs. For crosslisted courses, please include a statement of agreement from the director of the other graduate program(s).

N/A

14. Bibliography and Library Statement:
Please provide an appropriate and up-to-date bibliography in standard format. A statement from the University librarian responsible for the subject area certifying that adequate library resources are available for the new course must be provided.

The bibliography is dependent upon the course director for a given year.

15. **Physical Resources:**

Dependent on the course leader and content of the course. Options include Transmedia Lab (ACW 103) and Art and Technology Learning Lab (ACW 102)
New Course Proposal Template

The following information is required for all new course proposals. To facilitate the review/approval process, please use the headings below (and omit the italicized explanations below each heading).

1. **Program:** Digital Media Program

2. **Course Number:** DMG 6020

3. **Credit Value:** 3.0

4. **Long Course Title:** Vertical Studio-Lab II

5. **Short Course Title:** Vertical Studio-Lab II

6. **Effective Session:** Fall 2016

7. **Calendar (Short) Course Description:**
   This is the description of the course as it will appear in the University course repository and related publications. Calendar (short) course descriptions should be written in the present tense and may be a maximum of 60 words. Please include information with respect to any pre-/co-requisites and/or crosslisting or integration in the course description. Please indicate if the language of instruction is other than English.

   Students will lead a team of Masters students working collaboratively on a large-scale project that tackles a well-defined research problem spanning art and science methods and practices. Students are expected to take leadership roles. The problem domain will be defined by contexts such as a research laboratory of a Digital Media faculty member or an outside organization, in order to explore a range of research approaches and issues, professional and research ethics, and reflective practice within academic, professional and arts contexts. An important component is the discussion of critical issues related to cultural interactions with new and emerging technologies, including an appreciation of how art-making practices have shaped, and been shaped by, trajectories of technological change. Advanced Vertical Studio/Lab I will normally be taken in the second year of the program. There is a possibility for student teams to be co-supervised by program faculty and a program associate, which is a practitioner from an outside organization (for-profit - Ubisoft, not-for-profit, NGO, arts festival, trade organization, artist collective, design group, museum, MCC). Program associates may not be the sole supervisor.

8. **Expanded Course Description:**
   This is the detailed course description that will be published in course outlines, program handbooks, etc.

   Students will lead a team of Masters students working collaboratively on a large-scale project that tackles a well-defined research problem spanning art and science methods and practices. Students are expected to take leadership roles. The problem domain will be defined by contexts such as a research laboratory of a Digital Media faculty member or an outside organization, in order to explore a range of research approaches and
issues, professional and research ethics, and reflective practice within academic, professional and arts contexts. An important component is the discussion of critical issues related to cultural interactions with new and emerging technologies, including an appreciation of how art-making practices have shaped, and been shaped by, trajectories of technological change. Advanced Vertical Studio/Lab I will normally be taken in the second year of the program. There is a possibility for student teams to be co-supervised by program faculty and a program associate, which is a practitioner from an outside organization (for-profit - Ubisoft, not-for-profit, NGO, arts festival, trade organization, artist collective, design group, museum, MCC). Program associates may not be the sole supervisor.

9. Evaluation:
Please supply a detailed breakdown of course requirements, including the type and percentage value of each assignment. The expectation is that course assignments can normally be accomplished within the course period. If applicable, details regarding expectations and corresponding grading requirements with respect to attendance and participation should be provided.

<table>
<thead>
<tr>
<th>COURSE EVALUATION</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrations/Proposals:</td>
<td>30%</td>
</tr>
<tr>
<td>Project management:</td>
<td>15%</td>
</tr>
<tr>
<td>Final Research Paper:</td>
<td>30%</td>
</tr>
<tr>
<td>Final Creative Project:</td>
<td>25%</td>
</tr>
</tbody>
</table>

COURSE REQUIREMENTS

1) In-Progress Demonstrations/Proposals – Throughout the course, students will present their in-progress project demonstrations and proposals. Demonstrations allow for critical feedback of artistic and technical work, while proposals are speculative thought experiments designed at guiding collective discussion of potential directions for the larger collaborative work.

2) Project management – Students will play leadership roles guiding project research and realization. The project team will consist typically of 12 Masters students and 2 PhD students. A summative report will reflect on the process of managing and completing the project.

3) Final Research Paper – a 10-15 page paper that presents a critical analysis of the student's specific role within the project, through one of the conceptual lenses put forth in the course. Paper will synthesize from among the assigned readings as well as outside scholarly sources, and will address the final project as a case study.

4) Final Project – Students will complete, present and document their contribution to the larger research project. Their project should directly engage with the theoretical concepts discussed in the research paper, and should contribute positively to the larger collaborative work. The grading is based on the conceptual, technical or artistic rigor of the final product, as well as its presentation and successful documentation.

10. Integrated Courses:
Graduate courses may be integrated only with undergraduate courses at the 4000-level, where it is understood that 4000-level indicates an advanced level. Graduate students will be expected to do work at a higher level than undergraduates. If the proposed course is to be integrated, please provide a grading scheme that clearly differentiates between the work that undergraduate and graduate students perform, including a description of how the work performed by graduate students is at a higher level. As well, please indicate the course information for the undergraduate course (i.e., Faculty/unit/course number/credit value) and include a statement from the relevant undergraduate chair or undergraduate director indicating agreement to the integration.

11. Rationale:
Please indicate how the proposed course will contribute to the academic objectives of the program. As well, please indicate the relationship of the proposed course to other existing options, particularly with respect to focus/content/approach. If overlap with other existing courses exists, please indicate the nature and extent of consultation that has taken place.

The Digital Media graduate program's academic objectives include promotion of an interdisciplinary approach to computational art-making and technology development, providing students with 21st century “real-world” skills such as creativity, critical thinking and collaboration. The proposed course is the primary context for students to engage in collaborative, interdisciplinary work that merges methodologies from research-creation and scientific practice. It does this through application to a professional context defined by a contemporary research question or major artwork. The course further is required for all incoming Masters and PhD students, ensuring a context for students to engage their peers in a rigorous environment of making. The specific context of focus will vary from year to year depending on the faculty teaching the course, and will be chosen so as to complement and build upon other collaborative project-based course initiatives that are being offered within a given year.

12. Faculty Resources:
Provide the names of faculty members in your program qualified to teach this course. Stipulate the frequency with which you expect this course to be offered, including the impact that this course will have on faculty resources.

Frequency: Yearly

Faculty:
Shawn Brixey
Mark-David Hosale
Michael Longford
Don Sinclair
Nell Tenhaaf
Doug Van Nort
Graham Wakefield

13. Crosslisted Courses:
Crosslisted courses are offered between two or more graduate programs. For crosslisted courses, please include a statement of agreement from the director of the other graduate program(s).

N/A

14. Bibliography and Library Statement:
   Please provide an appropriate and up-to-date bibliography in standard format. A statement from the University librarian responsible for the subject area certifying that adequate library resources are available for the new course must be provided.

The bibliography is dependent upon the course director for a given year.

15. Physical Resources:

Dependent on the course leader and content of the course. Options include Transmedia Lab (ACW 103) and Art and Technology Learning Lab (ACW 102)
New Course Proposal Template

The following information is required for all new course proposals. To facilitate the review/approval process, please use the headings below (and omit the italicized explanations below each heading).

1. **Program:** Digital Media Program
2. **Course Number:** DMG 5200
3. **Credit Value:** 3.0
4. **Long Course Title:** Experimental Telepresence
5. **Short Course Title:** Experimental Telepresence
6. **Effective Session:** Fall 2016
7. **Calendar (Short) Course Description:**
   This is the description of the course as it will appear in the University course repository and related publications. Calendar (short) course descriptions should be written in the present tense and may be a maximum of 60 words. Please include information with respect to any pre-/co-requisites and/or crosslisting or integration in the course description. Please indicate if the language of instruction is other than English.

   This course engages the Internet as a medium for performance, exploring the concept of remote presence through personal and group projects. Students collaborate on multimedia performance pieces with partner universities in order to develop their own aesthetic vision of this largely-uncharted territory in a way that challenges established notions of audience participation, staging, human/agent interaction and inter-performer dialogue.

8. **Expanded Course Description:**
   This is the detailed course description that will be published in course outlines, program handbooks, etc.

   This course engages the Internet as a medium for performance, exploring the concept of remote presence through personal and group projects. Students collaborate on multimedia performance pieces with partner universities in order to develop their own aesthetic vision of this largely-uncharted territory in a way that challenges established notions of audience participation, staging, human/agent interaction and inter-performer dialogue. Pressing technical issues related to networking, visual and spatial rendering and audio engineering for telematic performance are engaged in the context of real performance events, bringing together students of both performing arts and digital media development in collaboration. The course accommodates and leverages student backgrounds across disciplines including music, dance, computer science, visual arts, film/video, theatre, engineering and digital media. Network-based multimedia improvisation sessions are used as a resource in project development, as well as critical examination of existing pieces from the telematic performance literature.

9. **Evaluation:**
Please supply a detailed breakdown of course requirements, including the type and percentage value of each assignment. The expectation is that course assignments can normally be accomplished within the course period. If applicable, details regarding expectations and corresponding grading requirements with respect to attendance and participation should be provided.

<table>
<thead>
<tr>
<th>COURSE EVALUATION</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>20%</td>
</tr>
<tr>
<td>Research Presentation</td>
<td>20%</td>
</tr>
<tr>
<td>Assignments</td>
<td>20%</td>
</tr>
<tr>
<td>Final Research Paper</td>
<td>20%</td>
</tr>
<tr>
<td>Final Creative Project</td>
<td>20%</td>
</tr>
</tbody>
</table>

**COURSE REQUIREMENTS**

1) Regular contribution to weekly activities is essential to the success and functioning of the course, which privileges an incremental building upon weekly experiences and the process of creative collaboration.

2) Students research and give a mid-term presentation on concepts and historical works related to telematic technologies used for the purpose of telepresence.

3) There are three assignments that students engage in as etudes, studying the telematic framework as an instrumentation or as a medium. These inform the final project.

4) The final project is a structured event, involving a remote partner, which utilizes the class as a resource. The work is performed and documented.

5) The final paper is a 10-15 page document that presents a critical analysis of telepresence in performance, through one of the conceptual lenses put forth in the course. Paper will synthesize from among the assigned readings as well as outside scholarly sources, chosen in consultation with the instructor. The paper will address the creative class projects as case studies.

10. **Integrated Courses:**

   Graduate courses may be integrated only with undergraduate courses at the 4000-level, where it is understood that 4000-level indicates an advanced level. Graduate students will be expected to do work at a higher level than undergraduates. If the proposed course is to be integrated, please provide a grading scheme that clearly differentiates between the work that undergraduate and graduate students perform, including a description of how the work performed by graduate students is at a higher level. As well, please indicate the course information for the undergraduate course (i.e., Faculty/unit/course number/credit value)
and include a statement from the relevant undergraduate chair or undergraduate director indicating agreement to the integration.

XXXXXXXXXX

11. Rationale:
Please indicate how the proposed course will contribute to the academic objectives of the program. As well, please indicate the relationship of the proposed course to other existing options, particularly with respect to focus/content/approach. If overlap with other existing courses exists, please indicate the nature and extent of consultation that has taken place.

The Digital Media graduate program's academic objectives include promotion of an interdisciplinary approach to computational art-making and technology development, providing students with 21st century “real-world” skills such as creativity, critical thinking and collaboration. The proposed course allows students to engage with a uniquely 21st century creative context afforded by contemporary networked society. Spanning from mobile-based interaction to embodied engagement in co-located spaces, the course challenges students to re-imagine a future in which communication, culture and expressive interaction have been deeply evolved beyond their current state. Further, this will occur in application to professional performance contexts, providing an opportunity for students to hone the skills most closely aligned with the proposed degree program.

12. Faculty Resources:
Provide the names of faculty members in your program qualified to teach this course. Stipulate the frequency with which you expect this course to be offered, including the impact that this course will have on faculty resources.

Frequency:
Yearly

Faculty:
Doug Van Nort,

13. Crosslisted Courses:
Crosslisted courses are offered between two or more graduate programs. For crosslisted courses, please include a statement of agreement from the director of the other graduate program(s).

N/A

14. Bibliography and Library Statement:
Please provide an appropriate and up-to-date bibliography in standard format. A statement from the University librarian responsible for the subject area certifying that adequate library resources are available for the new course must be provided.
Bibliography


http://web.media.mit.edu/~minsky/papers/Telepresence.html


15. Physical Resources:

Distributed Digital Performance Laboratory
Transmedia Laboratory
New Course Proposal Template

The following information is required for all new course proposals. To facilitate the review/approval process, please use the headings below (and omit the italicized explanations below each heading).

1. **Program:** Physical Computing III

2. **Course Number:** 5510

3. **Credit Value:**

4. **Long Course Title:**

5. **Short Course Title:** This is the title that will appear on University documents where space is limited, such as transcripts and lecture schedules. The short course title may be a maximum 40 characters, including punctuation and spaces.

6. **Effective Session:**

7. **Calendar (Short) Course Description:** This is the description of the course as it will appear in the University course repository and related publications. Calendar (short) course descriptions should be written in the present tense and may be a maximum of 60 words. Please include information with respect to any pre-/co-requisites and/or crosslisting or integration in the course description. Please indicate if the language of instruction is other than English.

   Builds on the material covered in Introduction to Physical Computing II to explore more advanced topics in physical computing such as circuit board design and manufacturing, embedded computing, communications and protocols, among other topics, with an emphasis on research-creation in the development of novel projects. During the course students will develop a larger work for public presentation.

8. **Expanded Course Description:** This is the detailed course description that will be published in course outlines, program handbooks, etc.

   Builds on the material covered in Introduction to Physical Computing II to explore more advanced topics in physical computing such as circuit board design and manufacturing, embedded computing, communications and protocols, among other topics, with an emphasis on research-creation in the development of novel projects. During the course students will develop a larger work for public presentation.

   Prerequisites: DATT 2010 Physical Computing II, or equivalent, or by permission of the instructor.

9. **Evaluation:**
Please supply a detailed breakdown of course requirements, including the type and percentage value of each assignment. The expectation is that course assignments can normally be accomplished within the course period. If applicable, details regarding expectations and corresponding grading requirements with respect to attendance and participation should be provided.

Overall grad students will have to have a higher quality of work in the realization of the assignments and final projects, and more stringent criteria will apply.

Assessment is based on assignments, quizzes, final project, and final presentation, which will be given the following weight in the final grade:

<table>
<thead>
<tr>
<th></th>
<th>Undergrad (4010)</th>
<th>Grad (5510)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40% Assignments</td>
<td>40% Assignments</td>
<td></td>
</tr>
<tr>
<td>25% Quizzes</td>
<td>15% Quizzes</td>
<td></td>
</tr>
<tr>
<td>25% Final Project</td>
<td>25% Final Project</td>
<td></td>
</tr>
<tr>
<td>10% Final Presentation</td>
<td>5% Final Presentation</td>
<td>15% Final Report</td>
</tr>
</tbody>
</table>

Assignments
Exercises and supporting readings will be assigned throughout the course. The readings will present theories that inform the exercises, while the exercises will be an execution of concepts presented in the readings.

Assignments are evaluated on the following criteria:

1) The execution of the concept: How well instructions were followed and the goals of the assignment are met.

2) Aesthetic quality: A consistent, clear and well-articulated composition based on the constraints given in the assignment and framed by the readings and lectures.

3) Technical achievement: A reasonable technical extension of the assignment, showing an ability to comprehend and be creative beyond what is demonstrated in the lab.

Final Projects
For Undergrads: Final Projects can be individual or realized in groups. For Grads: Projects will be independent. Projects will be an experiment in generative and parametric modelling leading to a fabricated or real time interactive form, as informed by the discussions and exercises presented in the context of this course.

Quizzes
Quizzes will be given periodically through out the course. All quizzes will be announced ahead of time.

Final Presentations
Final Presentations will be given to the class at the end of the term and will be in the form of a critical discussion that reflects on the results of the experience gained over duration of the course.
Final Reports
Gradient students will provide a final report that provides a documentation of the development of the project, overview of the concepts and motivation of the work, assessment of related works, and a description of future work to be done on this project.

10. Integrated Courses:
Graduate courses may be integrated only with undergraduate courses at the 4000-level, where it is understood that 4000-level indicates an advanced level. Graduate students will be expected to do work at a higher level than undergraduates. If the proposed course is to be integrated, please provide a grading scheme that clearly differentiates between the work that undergraduate and graduate students perform, including a description of how the work performed by graduate students is at a higher level. As well, please indicate the course information for the undergraduate course (i.e., Faculty/unit/course number/credit value) and include a statement from the relevant undergraduate chair or undergraduate director indicating agreement to the integration.

Overall grad students will have to have a higher quality of work in the realization of the assignments and final projects, and more stringent criteria will apply.

Assessment is based on assignments, quizzes, final project, and final presentation, which will be given the following weight in the final grade:

- Undergrad (4010) 40% Assignments
- Grad (5510) 40% Assignments
- 25% Quizzes
- 25% Final Project
- 10% Final Presentation
- 15% Final Report

For more details see the evaluation section above.

11. Rationale:
Please indicate how the proposed course will contribute to the academic objectives of the program. As well, please indicate the relationship of the proposed course to other existing options, particularly with respect to focus/content/approach. If overlap with other existing courses exists, please indicate the nature and extent of consultation that has taken place.

12. Faculty Resources:
Provide the names of faculty members in your program qualified to teach this course. Stipulate the frequency with which you expect this course to be offered, including the impact that this course will have on faculty resources.

1. Mark-David Hosale, Don Sinclair
2. This course will be offered every other year.
3. Contact hours will be 4 hours per week, with 1.5 hours of lecture and 2.5 hours for lab
work. Lectures will be focused on the introduction and discussion of theoretical, aesthetic, and conceptual content of the course. Labs will focus on the application of theories and concepts presented in the lectures in the form of exercises/studies and larger projects. Also, time will be spent in the lab portion of the course to meet one-on-one with the students. Students will need to spend up to 1-2 hours per week outside of lab to finish their work.

13. Crosslisted Courses:
Crosslisted courses are offered between two or more graduate programs. For crosslisted courses, please include a statement of agreement from the director of the other graduate program(s).

14. Bibliography and Library Statement:
Please provide an appropriate and up-to-date bibliography in standard format. A statement from the University librarian responsible for the subject area certifying that adequate library resources are available for the new course must be provided.


Igoe, Tom. "Making Things Talk." O'Reilly Media


15. **Physical Resources:**

*Please provide a statement regarding the adequacy of physical resources (equipment, space, labs, etc.), including whether or not additional/other physical resources are required and how the need for these additional/other physical resources will be met.*

The Transmedia Lab (ACW 103) is used for current physical computing courses and would accommodate this course.
New Course Proposal Template

The following information is required for all new course proposals. To facilitate the review/approval process, please use the headings below (and omit the italicized explanations below each heading).

1. **Program:** Digital Media Program

2. **Course Number:** DMG 5520

3. **Credit Value:** 3.0

4. **Long Course Title:** Spatial Computing in Responsive Environments

5. **Short Course Title:**
   This is the title that will appear on University documents where space is limited, such as transcripts and lecture schedules. The short course title may be a maximum 40 characters, including punctuation and spaces.

   Spatial Computing in Responsive Environments

6. **Effective Session:** Fall 2016

7. **Calendar (Short) Course Description:**
   This is the description of the course as it will appear in the University course repository and related publications. Calendar (short) course descriptions should be written in the present tense and may be a maximum of 60 words. Please include information with respect to any pre-/co-requisites and/or crosslisting or integration in the course description. Please indicate if the language of instruction is other than English.

   This practice-based course addresses 3D space as a creative computational medium drawing upon human-computer interaction (HCI), virtual and augmented reality, computer vision, projection-mapping, and natural interaction.

   It is integrated with DATT 4520.

8. **Expanded Course Description:**
   This is the detailed course description that will be published in course outlines, program handbooks, etc.

   This course addresses 3D space as a creative computational medium, by weaving theory, practice, software, and code drawn from research in human-computer interaction (HCI), mixed reality (a spectrum of merging real and virtual space, including virtual reality and augmented reality), computer vision, computer graphics, embodied and natural interaction, projection-mapping, ambient intelligence, and responsive environments. Students will develop systems and responsive environments of aesthetic and technological complexity, utilizing technologies such as RGBD cameras, stereoscopic projections, head-mounted displays, and loudspeaker arrays.

9. **Evaluation:**
   Please supply a detailed breakdown of course requirements, including the type and percentage value of each assignment. The expectation is that course assignments can normally be accomplished
within the course period. If applicable, details regarding expectations and corresponding grading requirements with respect to attendance and participation should be provided.

Assignments.

Four projects, with supported readings, are distributed through the course schedule to ensure development of essential capabilities, practice-informed critique and experiential learning. Each assignment contributes 10% of the final grade. Assignments are assessed by the following criteria:

1. Execution: How well instructions were followed and conceptual goals of the assignment were met.
2. Aesthetic qualities: The clear and consistent articulation and composition of a creative whole, and the experiential and/or conceptual depth thereof, within the frame of the given assignment and context of the course.
3. Technical completeness: Functionality, accuracy, efficiency, creativity, and clear structure in the development and in the results.
4. Novel contribution: Ingenuity in response to unanticipated challenges, comprehension and creativity beyond what is demonstrated in labs, and vision in further extension.

Quizzes.

Quizzes are given periodically through the course, based on readings from landmark papers or book excerpts, chosen to directly support the development of practical work and tutorial discussion. Participation incorporates contributions to tutorial discussions, awareness of issues in readings, and the ability to relate tutorial issues to the broader concerns of the course.

Final project.

Final projects, realized individually or in groups, demonstrate the effective application of understanding through the course in novel expressions of adaptive media and art. Projects are evaluated in the same terms as the assignments outlined above. Projects will be presented to the class at the end of the term and will be in the form of a critical discussion that reflects on the results of the experience gained over duration of the course.

Graduate students will provide a final report that provides a documentation of the development of the project, overview of the concepts and motivation of the work, assessment of related works, and a description of future work to be done on this project.

10. Integrated Courses:

Graduate courses may be integrated only with undergraduate courses at the 4000-level, where it is understood that 4000-level indicates an advanced level. Graduate students will be expected to do work at a higher level than undergraduates. If the proposed course is to be integrated, please provide a grading scheme that clearly differentiates between the work that undergraduate and graduate students perform, including a description of how the work performed by graduate students is at a higher level. As well, please indicate the course information for the undergraduate course (i.e., Faculty/unit/course number/credit value) and include a statement from the relevant undergraduate chair or undergraduate director indicating agreement to the integration.

Graduate students are expected to achieve a higher calibre of work and depth of research underlying the realization of the assignments and project. Assessment is based on assignments, quizzes, and final project, which will be given the following weight in the final grade:
11. Rationale:

Please indicate how the proposed course will contribute to the academic objectives of the program. As well, please indicate the relationship of the proposed course to other existing options, particularly with respect to focus/content/approach. If overlap with other existing courses exists, please indicate the nature and extent of consultation that has taken place.

This course addresses how meaning can be built into technically sophisticated architectures and profoundly-mediated environments that allow us to simultaneously perceive and interact with real and virtual objects and processes in a combined and perceptually intuitive space, using all of our senses and our whole body. The course addresses the spatialization of interactive computation, such that very part of space around participants, in physical and virtual worlds, is rife with responsive behavior. This means being able to apply methodologies effectively in creative practice to interactive 3D sensing and display as evidenced in assignments/projects, being able to both implement and interpret and reflect critically on a variety of 3D interactive application areas, and leverage experience in the application of cutting-edge creative coding in interactive 3D spatial & computational arts in order to intelligently extrapolate into future technologies, showing strong grounding in multiple methodologies of spatial computing, including a good understanding of mathematical, theoretical as well as aesthetic concerns.

We are moving into an age in which daily immersion within computation is increasingly spatialized, surrounded by ever-denser interactive arrays of sensors, displays, and networked computational devices. This is an age of mixed realities in which virtual spaces of information blend spatially with our real environments, through audio-visually and somatically aware ambient sensing and immersive display; together forming an eversive disruption that turns the world we inhabit inside out. End-user technology is about to pivot toward augmented visual experiences incorporated with our audio-visual and somatic experience to create a transparent natural human integration with technology that will become a disruptive and enabling transformation for society on par with the personal computer revolution of the 1980s and the Internet revolution of the 1990s. A diversity of industries are also already investing heavily in each of these areas, yet acknowledge the necessity of new creative technologies, techniques, genres, and aesthetic practices to carry this work forward into the next generation of information technology. The environments that surround us have a profound influence on shaping human potentials for access and interaction with the world we inhabit, with the virtual information spaces, and with each other. This course is necessary to understand, explore, and pioneer such developments from their arts and science foundations, in both theory and practice. It has a wide range of applications in arts, culture, and industry.

This course complements existing engineering-focused courses such as GS/CSE 6335 Topics in Virtual Reality, GS/CSE 6329 Advanced Human-Computer Interaction and GS/CSE 5323 Computer Vision, with a technologically advanced practice-based creative focus. Within DMG it is complemented by DMG 5200 Experimental Telepresence, DMG 5510 3.0 Physical Computing III, and DMG 5950 3.0 Artificial Life, Generative Art and Creative Code.

12. Faculty Resources:
Provide the names of faculty members in your program qualified to teach this course. Stipulate the frequency with which you expect this course to be offered, including the impact that this course will have on faculty resources.

Graham Wakefield, Matt Kyan, Rob Allison, Don Sinclair, Mark-David Hosale.
This course will be offered every second year.
Contact hours are 4 per week, split between lectures and lab work. Lectures focus on the introduction of theoretical, aesthetic and conceptual content of the course. Labs focus on the application of lecture material in the form of instructor-led reconstructions, exercises/studies, and larger projects, and will include time for one-on-one meetings.

13. Crosslisted Courses:
Crosslisted courses are offered between two or more graduate programs. For crosslisted courses, please include a statement of agreement from the director of the other graduate program(s).

14. Bibliography and Library Statement:
Please provide an appropriate and up-to-date bibliography in standard format. A statement from the University librarian responsible for the subject area certifying that adequate library resources are available for the new course must be provided.


15. Physical Resources:
Please provide a statement regarding the adequacy of physical resources (equipment, space, labs, etc.), including whether or not additional/other physical resources are required and how the need for these additional/other physical resources will be met.

Digital Media teaching resources: ACW 102 Art & Technology Lab, ACW 103 Transmedia Lab. No new resources are required to mount this course.
New Course Proposal Template

The following information is required for all new course proposals. To facilitate the review/approval process, please use the headings below (and omit the italicized explanations below each heading).

1. **Program:** Digital Media

2. **Course Number:** 5940

3. **Credit Value:** 3.0

4. **Long Course Title:** Generative and Parametric 3D Modeling for the Arts

5. **Short Course Title:** This is the title that will appear on University documents where space is limited, such as transcripts and lecture schedules. The short course title may be a maximum 40 characters, including punctuation and spaces.

   Generative and Parametric 3D Modeling for the Arts

6. **Effective Session:** 2017

7. **Calendar (Short) Course Description:**

   This is the description of the course as it will appear in the University course repository and related publications. Calendar (short) course descriptions should be written in the present tense and may be a maximum of 60 words. Please include information with respect to any pre-/co-requisites and/or crosslisting or integration in the course description. Please indicate if the language of instruction is other than English.

   This course explores the techniques of generative and parametric 3D modeling through the use of scripting and programming interfaces to professional grade render-time 3D modeling software tools (Rhinoceros/Grasshopper, Maya, Solid Works, Blender), real-time 3D graphics tools (Max/MSP/Jitter, Processing), and software libraries that incorporate OpenGL and GLSL Shading Languages (OpenFrameworks, Cinder). Students will develop fixed image-based content and 3D fabricated objects.

8. **Expanded Course Description:**

   This is the detailed course description that will be published in course outlines, program handbooks, etc.

   This course explores the techniques of generative and parametric 3D modeling through the use of scripting and programming interfaces to professional grade render-time 3D modeling software tools (Rhinoceros/Grasshopper, Maya, Solid Works, Blender), real-time 3D graphics tools (Max/MSP/Jitter, Processing), and software libraries that incorporate OpenGL and GLSL Shading Languages (OpenFrameworks, Cinder). Students will develop fixed image-based content and 3D fabricated objects. Because the techniques presented in this course have wide implications, the concepts and approaches introduced draw from the fields of architecture, industrial design, art making, and other fields where computational methods are used to create 3D objects and forms.
9. Evaluation:

Please supply a detailed breakdown of course requirements, including the type and percentage value of each assignment. The expectation is that course assignments can normally be accomplished within the course period. If applicable, details regarding expectations and corresponding grading requirements with respect to attendance and participation should be provided.

Overall grad students will have to have a higher quality of work in the realization of the assignments and final projects, and more stringent criteria will apply.

Assessment is based on assignments, quizzes, final project, and final presentation, which will be given the following weight in the final grade:

<table>
<thead>
<tr>
<th></th>
<th>Undergrad (4940)</th>
<th>Grad (5940)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>25%</td>
<td>15%</td>
</tr>
<tr>
<td>Final Project</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td>Final Presentation</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td>Final Report</td>
<td></td>
<td>15%</td>
</tr>
</tbody>
</table>

Assignments
Exercises and supporting readings will be assigned throughout the course. The readings will present theories that inform the exercises, while the exercises will be an execution of concepts presented in the readings.

Assignments are evaluated on the following criteria:

1) The execution of the concept: How well instructions were followed and the goals of the assignment are met.

2) Aesthetic quality: A consistent, clear and well-articulated composition based on the constraints given in the assignment and framed by the readings and lectures.

3) Technical achievement: A reasonable technical extension of the assignment, showing an ability to comprehend and be creative beyond what is demonstrated in the lab.

Final Projects
For Undergrads: Final Projects can be individual or realized in groups. For Grads: Projects will be independent. Projects will be an experiment in generative and parametric modelling leading to a fabricated or real time interactive form, as informed by the discussions and exercises presented in the context of this course.

Quizzes
Quizzes will be given periodically through out the course. All quizzes will be announced ahead of time.

Final Presentations
Final Presentations will be given to the class at the end of the term and will be in the form of a critical discussion that reflects on the results of the experience gained over duration of the course.

Final Reports
Graduate students will provide a final report that provides a documentation of the development of the project, overview of the concepts and motivation of the work, assessment of related works, and a description of future work to be done on this project.

10. Integrated Courses:
Graduate courses may be integrated only with undergraduate courses at the 4000-level, where it is understood that 4000-level indicates an advanced level. Graduate students will be expected to do work at a higher level than undergraduates. If the proposed course is to be integrated, please provide a grading scheme that clearly differentiates between the work that undergraduate and graduate students perform, including a description of how the work performed by graduate students is at a higher level. As well, please indicate the course information for the undergraduate course (i.e., Faculty/unit/course number/credit value) and include a statement from the relevant undergraduate chair or undergraduate director indicating agreement to the integration.

Overall grad students will have to have a higher quality of work in the realization of the assignments and final projects, and more stringent criteria will apply.

Assessment is based on assignments, quizzes, final project, and final presentation, which will be given the following weight in the final grade:

<table>
<thead>
<tr>
<th>Undergrad (4940)</th>
<th>Grad (5940)</th>
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</thead>
<tbody>
<tr>
<td>40% Assignments</td>
<td>40% Assignments</td>
</tr>
<tr>
<td>25% Quizzes</td>
<td>15% Quizzes</td>
</tr>
<tr>
<td>25% Final Project</td>
<td>25% Final Project</td>
</tr>
<tr>
<td>10% Final Presentation</td>
<td>5% Final Presentation</td>
</tr>
<tr>
<td></td>
<td>15% Final Report</td>
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</tbody>
</table>

For more details see the evaluation section above.

11. Rationale:
Please indicate how the proposed course will contribute to the academic objectives of the program. As well, please indicate the relationship of the proposed course to other existing options, particularly with respect to focus/content/approach. If overlap with other existing courses exists, please indicate the nature and extent of consultation that has taken place.
This course will provide advanced knowledge in the domain of 3D modeling and fabrication and the application of computational aesthetics in this domain. It will contribute to a number of courses already being mounted in the area of 3D modelling, animation, and digital fabrication. 3D modelling, animation, and digital fabrication are core knowledge areas in the domain of Digital Media and a crucial part of the growth of the program. Expected enrollment of this course would be around 24 students.

12. Faculty Resources:
Provide the names of faculty members in your program qualified to teach this course. Stipulate the frequency with which you expect this course to be offered, including the impact that this course will have on faculty resources.

1. Mark-David Hosale, Graham Wakefield
2. This course will be offered every other year.
3. Contact hours will be 4 hours per week, with 1.5 hours of lecture and 2.5 hours for lab work. Lectures will be focused on the introduction and discussion of theoretical, aesthetic, and conceptual content of the course. Labs will focus on the application of theories and concepts presented in the lectures in the form of exercises/studies and larger projects. Also, time will be spent in the lab portion of the course to meet one-on-one with the students. Students will need to spend up to 1-2 hours per week outside of lab to finish their work.

13. Crosslisted Courses:
Crosslisted courses are offered between two or more graduate programs. For crosslisted courses, please include a statement of agreement from the director of the other graduate program(s).

14. Bibliography and Library Statement:
Please provide an appropriate and up-to-date bibliography in standard format. A statement from the University librarian responsible for the subject area certifying that adequate library resources are available for the new course must be provided.

Statement needed from Librarian


Beorkrem, Christopher, Material Strategies in Digital Fabrication London: Routledge, 2012


15. Physical Resources:

*Please provide a statement regarding the adequacy of physical resources (equipment, space, labs, etc.), including whether or not additional/other physical resources are required and how the need for these additional/other physical resources will be met.*

This course will utilize the computing lab in Digital Media and the Digital Sculpture laboratory (DSL) in Visual Arts. The infrastructure, equipment, and staffing (technicians and student monitors), are currently in place.
New Course Proposal Template

The following information is required for all new course proposals. To facilitate the review/approval process, please use the headings below (and omit the italicized explanations below each heading).

1. **Program:** Digital Media Program

2. **Course Number:** DMG 5950

3. **Credit Value:** 3.0

4. **Long Course Title:** Artificial Life, Generative Art and Creative Code

5. **Short Course Title:** Artificial Life, Generative Art and Creative Code

   *This is the title that will appear on University documents where space is limited, such as transcripts and lecture schedules. The short course title may be a maximum 40 characters, including punctuation and spaces.*

6. **Effective Session:** Fall 2016

7. **Calendar (Short) Course Description:**

   *This is the description of the course as it will appear in the University course repository and related publications. Calendar (short) course descriptions should be written in the present tense and may be a maximum of 60 words. Please include information with respect to any pre-/co-requisites and/or crosslisting or integration in the course description. Please indicate if the language of instruction is other than English.*

   This course addresses computation as a creative medium from a biologically-inspired standpoint to develop artworks, adaptive media and simulations approaching the fascinating complexity of nature.

   It is integrated with DATT 4950.

8. **Expanded Course Description:**

   *This is the detailed course description that will be published in course outlines, program handbooks, etc.*

   This course addresses computation as a creative medium from a biologically-inspired standpoint to develop artworks, adaptive media and simulations approaching the fascinating complexity of nature.

   Artists, composers, designers and architects have always drawn inspiration from nature, but until recently only rarely have they been able to leverage nature’s creative mechanisms. From its origins computing has also found biological inspiration in pattern formation, self-construction and reproduction, intelligence, autonomy and collective behaviour. Frameworks explored in the course include complex dynamical systems, fractals, cellular automata, agent-based systems, evolutionary and developmental programming, artificial chemistries and ecosystems.
The course is focused on practice in the arts, interactive media, and design: interactive audiovisual applications are implemented both in-class and through student projects, and are critically examined by interweaving the history, theory and landmark works in the literature of generative art, evolutionary music and art, and process art, as well as artificial life, systems biology, and bioinformatics research, and philosophies of process, creativity, and the aesthetics of nature.

9. **Evaluation:**

*Please supply a detailed breakdown of course requirements, including the type and percentage value of each assignment. The expectation is that course assignments can normally be accomplished within the course period. If applicable, details regarding expectations and corresponding grading requirements with respect to attendance and participation should be provided.*

**Assignments.**

Four projects, with supported readings, are distributed through the course schedule to ensure development of essential capabilities, practice-informed critique and experiential learning. Each assignment contributes 10% of the final grade. Assignments are assessed by the following criteria:

1. Execution: How well instructions were followed and conceptual goals of the assignment were met.
2. Aesthetic qualities: The clear and consistent articulation and composition of a creative whole, and the experiential and/or conceptual depth thereof, within the frame of the given assignment and context of the course.
3. Technical completeness: Functionality, accuracy, efficiency, creativity, and clear structure in the development and in the results.
4. Novel contribution: Ingenuity in response to unanticipated challenges, comprehension and creativity beyond what is demonstrated in labs, and vision in further extension.

**Quizzes.**

Quizzes are given periodically through the course, based on readings from landmark papers or book excerpts, chosen to directly support the development of practical work and tutorial discussion. Participation incorporates contributions to tutorial discussions, awareness of issues in readings, and the ability to relate tutorial issues to the broader concerns of the course.

**Final project.**

Final projects, realized individually or in groups, demonstrate the effective application of understanding through the course in novel expressions of adaptive media and art. Projects are evaluated in the same terms as the assignments outlined above. Projects will be presented to the class at the end of the term and will be in the form of a critical discussion that reflects on the results of the experience gained over duration of the course.

Graduate students will provide a final report that provides a documentation of the development of the project, overview of the concepts and motivation of the work, assessment of related works, and a description of future work to be done on this project.

10. **Integrated Courses:**
Graduate courses may be integrated only with undergraduate courses at the 4000-level, where it is understood that 4000-level indicates an advanced level. Graduate students will be expected to do work at a higher level than undergraduates. If the proposed course is to be integrated, please provide a grading scheme that clearly differentiates between the work that undergraduate and graduate students perform, including a description of how the work performed by graduate students is at a higher level. As well, please indicate the course information for the undergraduate course (i.e., Faculty/unit/course number/credit value) and include a statement from the relevant undergraduate chair or undergraduate director indicating agreement to the integration.

Graduate students are expected to achieve a higher calibre of work and depth of research underlying the realization of the assignments and project. Assessment is based on assignments, quizzes, and final project, which will be given the following weight in the final grade:

<table>
<thead>
<tr>
<th></th>
<th>Undergraduate (4520)</th>
<th>Graduate (5520)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40% Assignments</td>
<td></td>
<td>40% Assignments</td>
</tr>
<tr>
<td>30% Quizzes</td>
<td></td>
<td>10% Quizzes</td>
</tr>
<tr>
<td>30% Final Project</td>
<td></td>
<td>30% Final Project</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20% Final Report</td>
</tr>
</tbody>
</table>

11. Rationale:
Please indicate how the proposed course will contribute to the academic objectives of the program. As well, please indicate the relationship of the proposed course to other existing options, particularly with respect to focus/content/approach. If overlap with other existing courses exists, please indicate the nature and extent of consultation that has taken place.

Autonomous complexity is one of the fundamental hallmarks of computational art; an integral message of the medium. Biologically-inspired methods of digital media formation have found wide applications in art, film, music, video games, robotics, and other computationally-facilitated experiences, frequently drawing upon scientific models of pattern formation, system dynamics, and symbol processing in large populations. Art has always been deeply concerned with its relationship to nature, though the forms of the relationship have changed many times. Likewise, from its origins computing has also found biological inspiration in pattern formation, self-construction and reproduction, intelligence, autonomy and collective behaviour. This course is necessary to understand such developments from their arts and science foundations, in both theory and practice.

This course is complemented by DMG 5940 Generative and Parametric Modelling, and GS/CSE 5326 Artificial Intelligence.

12. Faculty Resources:
Provide the names of faculty members in your program qualified to teach this course. Stipulate the frequency with which you expect this course to be offered, including the impact that this course will have on faculty resources.

Graham Wakefield, Mark-David Hosale, Nell Tenhaaf.
This course will be offered every year.
Contact hours will be 4 hours per week, with 1.5 hours of lecture and 2.5 hours for lab work. Lectures will be focused on the introduction and discussion of theoretical, aesthetic, and conceptual content of the course. Labs will focus on the application of theories and concepts presented in the lectures in the
form of exercises/studies and larger projects. Also, time will be spent in the lab portion of the course to meet one-on-one with the students.

13. Crosslisted Courses:
Crosslisted courses are offered between two or more graduate programs. For crosslisted courses, please include a statement of agreement from the director of the other graduate program(s).

14. Bibliography and Library Statement:
Please provide an appropriate and up-to-date bibliography in standard format. A statement from the University librarian responsible for the subject area certifying that adequate library resources are available for the new course must be provided.

Library resources are already provided in virtue of existing integrated course DATT 4950.

Samuel Butler. "Erewhon, Chapter 24, The book Of the Machines".

15. Physical Resources:

*Please provide a statement regarding the adequacy of physical resources (equipment, space, labs, etc.), including whether or not additional/other physical resources are required and how the need for these additional/other physical resources will be met.*

Digital Media teaching resources: ACW 102 Art & Technology Lab, ACW 103 Transmedia Lab. No new resources are required to mount this course.
New Course Proposal Template

The following information is required for all new course proposals. To facilitate the review/approval process, please use the headings below (and omit the italicized explanations below each heading).

1. **Program**: Digital Media Program

2. **Course Number**: DMG 5960

3. **Credit Value**: 3.0

4. **Long Course Title**: Applications of Machine Learning & Artificial Intelligence to the Performing Arts

5. **Short Course Title**: Machine Learning & AI for Performance

6. **Effective Session**: Fall 2016

7. **Calendar (Short) Course Description**: This is the description of the course as it will appear in the University course repository and related publications. Calendar (short) course descriptions should be written in the present tense and may be a maximum of 60 words. Please include information with respect to any pre-/co-requisites and/or crosslisting or integration in the course description. Please indicate if the language of instruction is other than English.

   This course allows students to apply cutting edge research in machine learning and artificial intelligence to the performing arts, with particular emphasis on music and sonic arts, dance and movement arts, and performance art. Different paradigms for modeling behaviour will be explored (human perception/cognition, artificial evolution, agent-based systems), as well as critical questions surrounding machine creativity and intentionality.

8. **Expanded Course Description**: This is the detailed course description that will be published in course outlines, program handbooks, etc.

   This course allows students to apply cutting edge research in machine learning and artificial intelligence to the performing arts, with particular emphasis on music and sonic arts, dance and movement arts, and performance art. Different paradigms for modeling learning and behaviour will be explored (human perception/cognition, artificial evolution, agent-based systems), as well as critical questions surrounding machine creativity and intentionality. Students will have the chance to create software/hardware systems that challenge the boundaries between human and machine expression in performance, and explore pressing questions of knowledge representation and embodiment through creation of works that blend science, engineering and the arts. Systems created during the course will sense and learn human actions (sound, motion, biophysical signals), and will artificially create new content in media that may include sound, visuals, light and haptics. These systems will have the opportunity for application to public and professional performance contexts that equally challenge existing paradigms of music, dance and performance art while exploring new research territories in the area of computational creativity.
9. **Evaluation:**

*Please supply a detailed breakdown of course requirements, including the type and percentage value of each assignment. The expectation is that course assignments can normally be accomplished within the course period. If applicable, details regarding expectations and corresponding grading requirements with respect to attendance and participation should be provided.*

<table>
<thead>
<tr>
<th>COURSE EVALUATION</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Presentation</td>
<td>20%</td>
</tr>
<tr>
<td>Assignments</td>
<td>20%</td>
</tr>
<tr>
<td>Final Research Paper:</td>
<td>20%</td>
</tr>
<tr>
<td>Final Research Project:</td>
<td>40%</td>
</tr>
</tbody>
</table>

**COURSE REQUIREMENTS**

1) Students research and give a presentation on concepts and historical works related to machine learning and AI. This will serve as the beginning of a research basis for their final project.

2) There are four assignments that students engage in as etudes, which will lead to the larger final project. Areas covered include sensing and analysis, pattern learning, behaviour modeling, and output display systems. As the course progresses, these will be increasingly constrained by the students' chosen area of exploration (e.g. musical improvisation, tai chi, public performance art piece, etc.).

3) The final paper is a research report on the final project, with scholarly references. The length, citation and scholarly style will adhere to proceedings papers found within topically-relevant international conferences offered by ACM, IEEE, NIME. (see bibliography for more).

4) The final project is a working interactive software/hardware system that applies machine learning & artificial intelligence principles to a performing arts event. The work will build upon and integrate the research presentation as well as smaller assignments. Grading will be based on level of scholarly and conceptual progress of the work, its ability to run effectively, the students' ability to effectively collaborate with a performer (chosen in consultation with instructor), and the effectiveness of a final demonstration of the system/piece.

10. **Integrated Courses:**

*Graduate courses may be integrated only with undergraduate courses at the 4000-level, where it is understood that 4000-level indicates an advanced level. Graduate students will be expected to do work at a*
higher level than undergraduates. If the proposed course is to be integrated, please provide a grading scheme that clearly differentiates between the work that undergraduate and graduate students perform, including a description of how the work performed by graduate students is at a higher level. As well, please indicate the course information for the undergraduate course (i.e., Faculty/unit/course number/credit value) and include a statement from the relevant undergraduate chair or undergraduate director indicating agreement to the integration.

N/A

11. Rationale:
Please indicate how the proposed course will contribute to the academic objectives of the program. As well, please indicate the relationship of the proposed course to other existing options, particularly with respect to focus/content/approach. If overlap with other existing courses exists, please indicate the nature and extent of consultation that has taken place.

Contemporary society is becoming ever-more mediated by networked agents that adapt to our human actions and biorhythms in order to transform our lived environment. This not only is changing the technological apparti within which we interact, but the social, experiential and philosophical contexts which emerge from and define us. There is a great deal of attention currently being paid to applying these trends to the performing arts, where news streams of techno-aesthetic works that blend art, engineering and science are starting to emerge. This requires a course that is not simply system design, but does this in light of a real-world embodied practice, informed by humanistic inquiry. This course creates precisely the context at York for students to become conversant in these emerging trends, and indeed to join the larger conversation through creating projects that are both research and creation.

This course is complemented by GS/CSE 5326 Artificial Intelligence.

12. Faculty Resources:
Provide the names of faculty members in your program qualified to teach this course. Stipulate the frequency with which you expect this course to be offered, including the impact that this course will have on faculty resources.

Frequency:
Yearly

Faculty:
Doug Van Nort,

13. Crosslisted Courses:
Crosslisted courses are offered between two or more graduate programs. For crosslisted courses, please include a statement of agreement from the director of the other graduate program(s).

N/A
14. Bibliography and Library Statement:

Please provide an appropriate and up-to-date bibliography in standard format. A statement from the University librarian responsible for the subject area certifying that adequate library resources are available for the new course must be provided.

Bibliography


15. Physical Resources:

Distributed Digital Performance Laboratory
Transmedia Laboratory
New Course Proposal Template

The following information is required for all new course proposals. To facilitate the review/approval process, please use the headings below (and omit the italicized explanations below each heading).

1. **Program**: Digital Media Program

2. **Course Number**: DMG 5990

3. **Credit Value**: 3.0

4. **Long Course Title**: Directed Reading

5. **Short Course Title**: Directed Reading

6. **Effective Session**: Fall 2016

7. **Calendar (Short) Course Description**: This is the description of the course as it will appear in the University course repository and related publications. Calendar (short) course descriptions should be written in the present tense and may be a maximum of 60 words. Please include information with respect to any pre-/co-requisites and/or crosslisting or integration in the course description. Please indicate if the language of instruction is other than English.

   Students have the option of taking a Directed Reading course with any faculty member appointed to the Program, provided a suitable graduate course is not available in the current curriculum, and provided the course does not overlap significantly with a course taken previously. In all cases, the course will be directly relevant to the student’s thesis/dissertation project.

8. **Expanded Course Description**: This is the detailed course description that will be published in course outlines, program handbooks, etc.

   Students have the option of taking a Directed Reading course with any faculty member appointed to the Program, provided a suitable graduate course is not available in the current curriculum, and provided the course does not overlap significantly with a course taken previously. In all cases, the course will be directly relevant to the student’s thesis/dissertation project.

9. **Evaluation**: Please supply a detailed breakdown of course requirements, including the type and percentage value of each assignment. The expectation is that course assignments can normally be accomplished within the course period. If applicable, details regarding expectations and corresponding grading requirements with respect to attendance and participation should be provided.

   Variable, depending on the course content.
COURSE REQUIREMENTS

Guidelines for a Directed Reading course proposal:

- The course requires a title and rationale provided by the student with the agreement of the course director. The rationale should include objectives for the course, and explain the context in which the course material will be studied.
- A schedule should state the frequency and length of time the student and course instructor will meet.
- Evaluation methods should be clear, i.e., assignments as agreed upon with the instructor including the number of written assignments and the length of each. The relative weighting of each component of the grade should also be given.
- A bibliography relevant to the course is to be attached.

10. Integrated Courses:

Graduate courses may be integrated only with undergraduate courses at the 4000-level, where it is understood that 4000-level indicates an advanced level. Graduate students will be expected to do work at a higher level than undergraduates. If the proposed course is to be integrated, please provide a grading scheme that clearly differentiates between the work that undergraduate and graduate students perform, including a description of how the work performed by graduate students is at a higher level. As well, please indicate the course information for the undergraduate course (i.e., Faculty/unit/course number/credit value) and include a statement from the relevant undergraduate chair or undergraduate director indicating agreement to the integration.

N/A

11. Rationale:

Please indicate how the proposed course will contribute to the academic objectives of the program. As well, please indicate the relationship of the proposed course to other existing options, particularly with respect to focus/content/approach. If overlap with other existing courses exists, please indicate the nature and extent of consultation that has taken place.

N/A

12. Faculty Resources:

Provide the names of faculty members in your program qualified to teach this course. Stipulate the frequency with which you expect this course to be offered, including the impact that this course will have on faculty resources.

Frequency: at any time. All faculty appointed to the program.

13. Crosslisted Courses:

Crosslisted courses are offered between two or more graduate programs. For crosslisted courses, please include a statement of agreement from the director of the other graduate program(s).
14. Bibliography and Library Statement:
   Please provide an appropriate and up-to-date bibliography in standard format. A statement from the University librarian responsible for the subject area certifying that adequate library resources are available for the new course must be provided.

N/A

15. Physical Resources:

N/A
APPENDIX B: DIGITAL MEDIA CALENDAR COPY

DIGITAL MEDIA

The Graduate Program in Digital Media offers courses and opportunities for advanced training and research leading to the degrees of Master of Arts (MA), Master of Science (MSc), and Doctor of Philosophy (PhD). The Program is jointly offered by the Department of Computational Arts (CA), and the Department of Electrical Engineering and Computer Science (EECS). The program provides highly qualified students with the opportunity to do specialised hybrid research work in a program that uniquely combines computational science and artistic practices. Work in digital media focuses on a broad range of current and emerging forms of digitally supported media, with applications that range from computer games to interactive art.

The degree designations for the MA and MSc programs provide students the opportunity to tailor their program to suit the methodology required for their Major Research Project. Students pursuing an MA focus on research-creation for art applications, which combines creative and academic research practices to produce critically informed work in a variety of media. Students pursuing an MSc focus on scientific/engineering research methods for technology, hardware and/or software development within digital media.

Across all three Digital Media graduate degrees, in both courses and project development, students work within a shared environment that enables them to develop expertise complementary to their research specialization in computational science or artistic practice.

Portfolio Requirements

A portfolio is required for entry into all programs. A portfolio shows evidence of prior creative outputs primarily in the form of artworks but could also include outputs from computer engineering-based projects. Projects represented in the portfolio should emphasize a cross-disciplinary approach. Examples of art-based portfolios could include drawings/images, audio recordings, sound compositions, video documentation of interactive systems, other gallery/curatorial documentation, games and interactive demonstrations but must include some works that utilize programming. Examples of computer engineering-based projects could include source code for applications (preferably interactive), games, microcontroller code (from physical computing), video documentation of projects, publications, and prototypes but must include some works that engage with the arts.

Letters of recommendation can be from previous professors, employers, or other persons whom the applicant has had interactions with and can attest to their professional and/or academic qualifications.
MASTER OF ARTS PROGRAM

Admission Requirements

Graduates with an honours degree or equivalent from a recognized university in Digital Media or related Bachelor’s program, such as an art program that focuses on technology, with at least a B average in the final two years of study, may be considered for admission as candidates for the MA degree. Applicants are expected to provide a portfolio, a Statement of Interest letter, a curriculum vitae, and two recommendations. Applicants must show that they have experience in both programming and the arts, and in particular a cross-disciplinary approach. Experience creating art or creative works (including games) using programming languages is required. Those whose formal background in programming is incomplete will be required to take appropriate supplemental undergraduate course(s) in addition to required courses. For students who have not graduated from a university where the language of instruction is English, there is no formal language requirement but the supervisory committee will require a student to demonstrate an acceptable competence in a language which is considered necessary for purposes of doing their research.

Degree Requirements

- DMG 5010 3.0 Foundations of Digital Media
- DMG 5020 3.0 Advanced Vertical Studio/Lab I
- 3.0 credits from a specified list of computer science graduate level courses
- 3.0 credits from a specified list of computational arts graduate level courses
- 6.0 credits at the graduate level, with GPD/ supervisor approval

No more than 6.0 credits can be integrated with undergraduate courses.

Candidates for the MA degree must complete 18 credits and conduct a major research-creation project under the general direction of a supervisor with a review essay that details and contextualizes the project. The Digital Media MA is research degree and projects are defined as a body of work similar to a thesis in quality, scope and/or degree of originality. Projects entail a public presentation and critique of the work, which could include an exhibition.

Time Requirements

Normal expected degree completion time for full-time MA students is 5 terms (2 years). All requirements for a Master’s degree must be fulfilled within 12 terms (4 years) of registration as a full-time or part-time Master’s student in accordance with Faculty of Graduate Studies’ registration policies.
MASTER OF SCIENCE PROGRAM

Admission Requirements

Graduates with an honours degree or equivalent from a recognized university in Digital Media or related Bachelor’s program, such as computer science, with at least a B average in the final two years of study, may be considered for admission as candidates for the MSc degree. Applicants are expected to provide a portfolio, a Statement of Interest letter, a curriculum vitae, and two recommendations. Applicants must show that they have experience in the arts, and in particular a cross-disciplinary approach. Those whose formal background in the arts is incomplete will be required to take appropriate supplemental undergraduate course(s) in addition to required courses. There is no formal language requirement but the supervisory committee will require a student to demonstrate an acceptable competence in a language which is considered necessary for purposes of doing their research.

Degree Requirements

- DMG 5010 3.0 Foundations of Digital Media
- DMG 5020 3.0 Advanced Vertical Studio/Lab I
- 6.0 credits from a specified list of computer science graduate level courses
- 6.0 credits at the graduate level, with GDP/supervisor approval

No more than 6.0 credits can be integrated with undergraduate courses.

Candidates for the MSc degree must complete 18 credits and conduct a major research project under the general direction of a supervisor with a review essay that details and contextualizes the project. The Digital Media MSc is research degree and projects are defined as a body of work similar to a thesis in quality, scope and/or degree of originality. Projects entail a public presentation and critique of the work, which could include an exhibition.

Time Requirements

Normal expected degree completion time for full-time MSc students is 5 terms (2 years). All requirements for a Master’s degree must be fulfilled within 12 terms (4 years) of registration as a full-time or part-time Master’s student in accordance with Faculty of Graduate Studies’ registration policies.

DOCTOR OF PHILOSOPHY PROGRAM
Admission Requirements

Applicants must have a masters degree or equivalent from a recognized university in a digital media or related program, such as computer science, or an art program that focuses on technology, with at least a B+ average. Applicants are expected to provide a portfolio, a Statement of Interest letter, a qualifying research paper or similar significant contribution to the field, and two letters of recommendation. Applicants must show that they have experience in both computer science and the arts, and in particular a cross-disciplinary approach. For students who have not graduated from a university where the language of instruction is English, there is no formal language requirement but the supervisory committee will require a student to demonstrate an acceptable competence in a language which is considered necessary for purposes of doing their research.

Degree Requirements

- DMG 5020 3.0 Advanced Vertical Studio/Lab II
- 6.0 credits at the graduate level, with GPD/supervisor approval
- additional courses if assessed as deficient

No more than 3.0 credits can be integrated with undergraduate courses.

An assessment is given at the beginning of the program to determine the student's ability to fulfill the degree requirements. If a student is deemed not ready then they may be asked to take courses to help in resolving any deficiencies.

Candidates must successfully complete a comprehensive examination that tests proficiency in their major research field and demonstrates competence (including methodology) to continue to the dissertation, under guidance and assessment of supervisors; and hold an oral defense of the report; present a dissertation proposal outlining the research questions and anticipated results of their dissertation; conduct a significant body of original research or research-creation under the supervision of a supervisory committee; and submit a dissertation embodying its results. The doctoral dissertation must constitute a significant contribution to knowledge in the field of Digital Media. It should contain evidence of critical understanding of the relevant literature. The material embodied in the dissertation should merit publication.

Time Requirements

Normal degree completion time for full-time PhD students is 12 terms (4 years). All requirements for a doctoral degree must be fulfilled within 18 terms (6 years) of registration as a full-time or part-time doctoral student in accordance with Faculty of Graduate Studies’ registration policies.
Appendix C: Degree and Examination requirements

MA, MSc MRP Requirements
The research requirements in the Master’s are: a major research or research-creation project under the general direction of a supervisor with a review essay that details and contextualizes the project. As in the MSc degree in Computer Science in EECS, project topics for the Digital Media MSc may include implementation and evaluation of recent published ideas, development of novel software/hardware applications or improvements of algorithms. The Digital Media MSc and MA are, however, research degrees and projects are defined as a body of work similar to a thesis in quality, scope and/or degree of originality. Both the MSc and the MA can take up research-creation, as a core methodology.

Coursework
In support of the hybrid nature of Digital Media practice, the program requirements integrate courses from both AMPD and EECS. The MA and MSc require 18.0 credits of coursework. There are two core courses which provide students with a breadth component that covers fundamental digital media knowledge, skills and methodologies. There is an additional depth requirement which specializes the student in a focus area in either artistic practice or scientific application. This is complemented by an elective course from anywhere in the University.

The minimum course requirements for the MA are:

· DMG 5010 3.0 Foundations of Digital Media
· DMG 5020 3.0 Advanced Vertical Studio/Lab I
· 3.0 credits from a specified list of computer science graduate level courses
· 3.0 credits from a specified list of computational arts graduate level courses
· 3.0 credits at the graduate level, with GPD/principal supervisor approval
· additional courses if assessed as deficient

The minimum course requirements for the MSc are:

· DMG 5010 3.0 Foundations of Digital Media
· DMG 5020 3.0 Advanced Vertical Studio/Lab I
· 6.0 credits from a specified list of computer science graduate level courses
· 3.0 credits at the graduate level, with GPD/principal supervisor approval
· additional courses if assessed as deficient

An assessment is given at the beginning of the program to determine the student’s ability to take the required courses. If they are not ready then they may be asked to take a number of courses to help in resolving these deficiencies.

Graduate students may not take or receive credit for an integrated course at the graduate level if they took it at York or elsewhere at the undergraduate level.
Following initial registration in the graduate program, and prior to completion of the first term of study, graduate students may request transfer credit (advanced standing) for graduate-level courses completed at York University or another institution that have not been used to fulfill the requirements of another degree program or graduate diploma. Credit for such work will be determined by the Office of the Dean, Faculty of Graduate Studies, on the recommendation of the program concerned. Transfer credit accepted towards fulfillment of the degree program to which the student has been admitted may count for up to 50% of the coursework requirements.

In addition to those courses specified as constituting the minimum required program of studies, students with permission of the program director, may elect, on registration, to enrol in additional courses.

**Independent research**

Conduct a major research or research-creation project under the general direction of a supervisor. A paper detailing and contextualizing the project must be submitted to the supervisory committee.

A major research paper/project/review essay is a milestone component of a program that requires independent research. The academic requirements, format and length of master’s research papers/projects/review essays should be consistent with master’s degree-level and program-specific expectations.

The topic must be approved by the student’s supervisor and supervisory committee, including ethics review and approval if appropriate. The supervisory committee reviews a student’s research proposal and recommend its approval not less than 6 months prior to the oral examination date.

Writing should be in English but approval may be given to a written request from a student for it to be written in French or in the language of any Aboriginal/First Nations people in North America, subject to confirmation from the director of the graduate program concerned that relevant supervision and sufficient support for the completion of such written work can be provided.

**Supervision**

MRPs are supervised by a principal supervisor and second reader. Supervisors must be approved no later than the end of the second term of master’s study.

**Progress Reports**

Students are required to submit a progress report to the graduate program director on an annual basis, normally in the Spring.

Reports to the graduate program director of unsatisfactory progress may require a student to withdraw from a program of studies, or withdraw from the graduate program.
Evaluation
MRPs include a public presentation and critique of the work. This could include an exhibition. The form of the presentation is at the discretion of the supervisory committee. MRPs are evaluated by the supervisor and reader on a pass/fail basis.

Ph.D. Requirements
All entering Ph.D. Candidates plan a research program with their supervisor at the start of their degree studies, and must successfully complete a significant body of original research of high calibre in Digital Media, under the general direction of a Supervisor and the Dissertation Supervisory Committee, and describe it in an appropriate dissertation. The research must be of such calibre that it satisfies program standards. Dissertation research should be of such quality that it would be publishable in prominent Digital Media journals.

Coursework
The Ph.D. requires 9.0 credits of coursework, unless an assessed deficiency requires additional courses. It is assumed that Ph.D. Candidates will have the fundamental knowledge gained at the master’s level, and so the only required core course is the Advanced Vertical Studio/Lab that is integrated with master’s students. This is a particularly innovative course that is based on collaborative approach to contemporary research problems in Digital Media with real-world applications.

The minimum course requirements for the Ph.D. are:

- DMG 6020 3.0 Advanced Vertical Studio/Lab II
- 6.0 credits at the graduate level, with GPD/principal supervisor approval
- additional courses if assessed as deficient

An assessment is given at the beginning of the program to determine the student’s ability to take the required courses. If they are not ready then they may be asked to take a number of courses to help in resolving these deficiencies.

Graduate students may not take or receive credit for an integrated course at the graduate level if they took it at York or elsewhere at the undergraduate level.

Following initial registration in the graduate program, and prior to completion of the first term of study, graduate students may request transfer credit (advanced standing) for graduate-level courses completed at York University or another institution that have not been used to fulfill the requirements of another degree program or graduate diploma. Credit for such work will be determined by the Office of the Dean, Faculty of Graduate Studies, on the recommendation of the program concerned. Transfer credit accepted towards fulfillment of the degree program to which the student has been admitted may count for up to 50% of the coursework requirements.
In addition to those courses specified as constituting the minimum required program of studies, students with permission of the program director, may elect, on registration, to enrol in additional courses.

Supervision
A dissertation supervisory committee must have at least three faculty members appointed to FGS, at least two of whom must be in Digital Media. The principal supervisor must be a Full Member of the Digital Media Graduate Program.

The supervisor shall be accessible to the Candidate, normally meeting once a month and never less than once each term.

Progress reports
Candidates must submit a progress report to the graduate program director on an annual basis, normally in the Spring.

Once established, the dissertation supervisory committee shall meet annually with the Candidate to evaluate the Report on Progress submitted by the Candidate and submit a completed copy of the Report on Progress to the graduate program director after the meeting.

Reports to the graduate program director of unsatisfactory progress may require a Candidate to withdraw from a program of studies, or withdraw from the graduate program.

Comprehensive Exams
In the Ph.D., successfully completing the written exam shows evidence of excellence in the candidate's field of interest, and passing the oral examination demonstrates ability to articulate all aspects of the field.

A. Area of research.
Roughly half way through the second year of the program, the Ph.D. Candidate is expected to have mastered a general understanding of the area in which they plan to complete their Dissertation.

B. Reading list.
The Candidate will work closely with the supervisory committee to build reading lists for the area they have selected. The bibliography should be annotated and organized by sub-fields or topics rather than a simply alphabetical ordering. It may also be helpful to keep a list of keywords for each area (e.g., library subject keywords) to help in organizing the reading lists. While citations styles may vary depending on the field chosen it is important that the candidate use a clear and consistent format that follows an established referencing style that is determined by the examining committee. The reading list needs to be approved by the entire committee before the Candidate can proceed with the written exam. Candidates are encouraged to use a bibliography program such as Zotero or Endnote.
C. Research questions.
Following the compilation of reading lists, the Candidate will work closely with the supervisory committee to compose the research questions that will motivate the dissertation. Formulating strong research questions helps the Candidate, on the one hand, to develop a better understanding of the foundational knowledge and dominant paradigms and perspectives within a research area—the status of the question—and on the other hand, to identify new potential avenues of research which open up new perspectives and interventions into a research area. Candidates should ask themselves: what are the key questions that interest them in relation to the questions that dominate the field? The research questions need to be approved by the entire committee before the Candidate can proceed with the written exam.

D. Written examination.
Under the supervision of the Candidate’s Dissertation Supervisory Committee, the Candidate prepares a written exam in the Candidate’s chosen field of research. It is the responsibility of the Candidate’s Dissertation Supervisory Committee to ensure that this exam covers the chosen field in sufficient depth and breadth. The written exam is an examination method that enables students to draw out interpretive and methodological frameworks for the areas of knowledge in which they will be tested. The written exam further allows students to begin formally to develop frameworks that will help to initiate their doctoral research. The written exam shall normally comprise one written exam totaling 5000-8000 words, not counting footnotes and bibliography. Students are encouraged to give an early clean draft of their written exams to members of their comprehensive committee, but the committee may reserve the right to restrict the number of drafts that they will read before the final submission.

Finally, it is the responsibility of the student and the committee supervisor to drive the exam process forward within program deadlines. When students submit drafts to their committee members, a suggested deadlines for feedback (the FGS guidelines is 2-3 weeks), which can be negotiated depending on faculty schedules, should be established. Students are also responsible for being persistent in arranging meetings with their committee as a whole and/or individual faculty. If students do not receive adequate feedback within acceptable timeframes (after reminding faculty members at least twice), they should consult with the Graduate Program Director, who can consult directly with the delinquent faculty members.

E. Oral examination.
In order to demonstrate the Candidate’s understanding of their chosen field, the Candidate presents their area of research to the members of the Graduate Program and to other Candidates, and is examined orally by the Candidate’s Dissertation Supervisory Committee as well as by other members of the graduate program. Upon completion of the Oral Examination the Supervisory Committee will determine either:

- That the Candidate has passed the qualifying examination and should be permitted to continue on towards their Dissertation Proposal.
• That the Candidate has not demonstrated sufficient understanding of the area to proceed directly towards their Dissertation Proposal and that the Candidate should either:
  ■ Be required to take additional courses before proceeding towards their Dissertation Proposal, or
  ■ Be required to complete additional readings before proceeding towards their Dissertation Proposal and potentially that the Candidate should re-sit the Qualifying Examination, or
  ■ Recommendation for withdrawal from the program.

Independent research
Once the comprehensive exams are complete the Candidate must present a completed dissertation proposal based on the research questions developed during the exam, and outlining the anticipated approach to their dissertation. The topic must be approved by the student’s supervisor and supervisory committee, including ethics review and approval if appropriate. The supervisory committee reviews a student’s research proposal and recommend its approval not more than 6 months after the oral examination date.

The candidate will conduct a significant body of original research or research-creation under the supervision of a supervisory committee, and submit a dissertation embodying its results.

The doctoral dissertation must constitute a significant contribution to knowledge. It should contain evidence of critical understanding of the relevant literature. The material embodied in the dissertation should merit publication.

Candidates must comply with the requirements for the preparation, submission and distribution of dissertation as described in the Faculty of Graduate Studies’ Guide for the Preparation and Examination of Theses and Dissertations.

Writing should be in English but approval may be given to a written request from a student for it to be written in French or in the language of any Aboriginal/First Nations people in North America, subject to confirmation from the director of the graduate program concerned that relevant supervision and sufficient support for the completion of such written work can be provided.

Evaluation
Candidates defend the dissertation at a public oral examination. Dissertation defenses can be accepted with or without specified or major revisions. In the case of major revisions, once completed the examination committee must vote for pass/fail.

A dissertation examining committee shall consist of at least five voting members, including the Dean of FGS or representative, who serves as chair; two graduate faculty members chosen from the program and/or supervisory committee, at least one of whom must be from the supervisory committee; one graduate faculty member at arm’s length from the dissertation, and normally from outside the program;
one external examiner, from outside York University, at arm’s length from the dissertation, recommended by the program director and includes at least:

- 3 Faculty Members at least one of whom has major research interests outside of the area of the Candidate’s dissertation (typically the Dissertation Supervisory Committee)
- 1 Faculty Member from outside the Program but within the University (representative of the Dean of Graduate Studies).
- 1 Representative from outside the University (the External Examiner).

The membership of the committee and designation of the chair must be recommended no later than four weeks before the date set for the oral examination.

In addition to the University Regulations, the External Examiner will submit a written appraisal of the dissertation before the Oral Examination.
Appendix D: Support Letters

- Vice-President Academic and Provost Lenton
- Dean Brixey
- Associate Dean Pagiatakis
- Joy Kirchner, University Librarian
- Carol Altilia, University Registrar
- Interactive Ontario
- Ellefson Technology Consulting
- The Canadian Digital Media Network
Memorandum

To: Rebecca Pillai Riddell, Chair, Senate APPRC
    Franck van Breugel, Chair, Senate ASCP

From: Rhonda Lenton, Provost

Date: February 10, 2016

Subject: Proposal for Digital Media Graduate Programs

I have undertaken an initial review of the proposal to establish graduate programming in Digital Media (MA, MSc, and PhD degrees), to be offered collaboratively by the School of the Arts, Media, Performance and Design and the Lassonde School of Engineering. It is my intention to provide a more detailed statement with regard to this proposal, including its resource implications, following receipt of the external reviewers’ report, AMPD’s response, and the final version of the proposal incorporating any revisions to take account of the reviewers’ comments. At this stage, however, I am pleased to signal that I am satisfied that this proposal is ready to go forward for consideration by external reviewers.

The proposal clearly sets out the case for the program in terms of demand, its contributions to our institutional objectives, its distinctiveness, its curriculum and structure, and the learning outcomes it is intended to promote. I note that the proposal has been developed in response to a need for graduates prepared to undertake research in this area and to work in the field, through a program integrating both artistic and engineering, science and technology elements. It is consistent with institutional objectives in relation to expansion of graduate programming and further development of this area of research and study. It builds on a strong undergraduate program in Digital Media and York’s growing profile in this area.

Dean Bixey’s strong letter of support details the rationale for this program and the opportunities it will provide for York and for our students.

I am happy to support this proposal and look forward to seeing the reviewers’ assessments.

Cc: Dean S. Bixey
    Dean J. Kozinski
    Vice-Provost Academic A. Pitt
April, 10, 2017

To: Don Sinclair, Program Coordinator, Digital Media

Re: Support for the Establishment of Graduate Program in Digital Media | AMPD | LSE

It is with sincere enthusiasm that I offer my support and endorsement for the proposed creation of a new joint Graduate Program (MA, MSc and PhD) in Digital Media housed in the Department of Computational Arts (pending approval) and the Department of Electrical Engineering and Computer Science.

With the concurrent creation of the Department of Computational Arts in AMPD, it is appropriate to consider this proposal at this time. The creation of the new Graduate Program will play an important and strategic role in supporting our faculty and institution to maintain their distinct leadership in this field, as well as pioneer new domains of creative practice across a rapidly converging, arts, computing, and engineering research landscape. The new Program will enable York to dramatically raise its profile in a highly competitive and expanding field, and differentiate its research character in contrast to similar programs developed by competitor institutions such as Concordia and Simon Fraser.

I am very pleased to see support of the graduate program proposal from: Christa Dickenson, Executive Director, Interactive Ontario; Avvey Peters, Managing Director, Canadian Digital Media Network; and Chris Ellefson President, Ellefson Technology Consulting, as well as our own Rob van der Bliek and Catherine Davidson from the library. Their comments were universally supportive and highlighted the unique structure and nature of the curriculum, and that the new DM graduate programming represents a critical need in Canada. Christina Dickenson from Interactive Ontario (IO represents approximately 300 local and global companies producing innovative experiences in a variety of subsectors including video games, eLearning, transmedia storytelling, mobile apps, augmented and virtual reality, web series and more.) stated the program will be at “the forefront of progress recognizing the value in interdisciplinary training and research toward STEAM”, as well as “preparing HQP with the knowledge and skills they require to enter this exciting and diverse industry”.

External supporters highlighted the flexibility our programs offer to students while providing a unique methodology that combines learning outcomes from the arts, engineering and sciences with unique graduate degree level expectations for emerging industries. Avvey Peters, Managing Director, Canadian Digital Media Network wrote, “The York Graduate Program in Digital Media promises to produce the next-generation of HQP trained in a sophisticated understanding of digital media, with
integrated capacities in science, technology, engineering and mathematics, creativity for digital media content and cultural literacies. Each of which is key to the success of students’ endeavours in next generation digital media jobs.” York Libraries are supportive and engaged as partners with unique contributions they’d like to engage with in regards to data mining, and creation of a more robust digital culture at York.

The program embraces its partner Lassonde’s ambitious goal of achieving 50:50 gender-balance as a crucial commitment we can make to transforming engineering education in Canada. With an enrolment of 45% women in the current undergraduate Digital Media Program, the growing STEM to STEAM intersection of arts, computing and engineering will likely be one of the first engineering areas to realize gender balance at York. The creation of the graduate program in Digital Media is another foundational investment in continuing to attract talent, accelerate research and achieve this extraordinary goal.

The program development was informed by extensive planning involving consultations with internal colleagues, external consultants, as well as by comparisons with leading institutions with similar programs in Canada and the US. The initiative is well aligned with the strategic directions of the School of the Arts, Media, Performance and Design, the Lassonde School of Engineering and the University. Feedback arising from collegial discussions within across AMPD and Lassonde have been incorporated into the proposal. The proposal is also aligned with the principal goals of the most recent University Academic Plan, Provostial White Paper and SRP, which call for the expansion of the scope of the University's teaching and research activities in the areas of digital cultures and digital media.

The financial resources for the new graduate program in Digital Media are in place, and long term planning processes are subject to the same stringent planning and accountability framework as other programs, and would be expected with any project of the magnitude and size as envisioned between AMPD and Lassonde School of Engineering. Plans for faculty complement and enrollment growth have been developed to strike the balance between professional and academic standards, with the average student-to-faculty ratios aligning with comparable programs of similar size. A plan will be developed to address the appropriate space needs of the program, including provisions for graduate student office space. Resources for relevant administrative, technical and student support staff will be supplied between the new Department of Computational Arts in AMPD and the Department of Electrical Engineering and Computer Science in Lassonde. Matters related to teaching contributions by faculty members in each participating Department have been discussed with the current Chairs.

In conclusion, I offer strong support for the introduction of master's and doctoral programs in Digital Media offered jointly between Department of Computational Arts and the Department of Electrical Engineering and Computer Science.
Most Sincerely,

Shawn Brixey

Dean | School of the Arts, Media, Performance and Design
201C | Goldfarb Centre for Fine Arts
4700 | Keele Street
York University | Toronto
Ontario | M3J 1P3
Tel. 416.736.2100 ext.33881
Fax. 416.736.5447
brixey@yorku.ca
http://ampd.yorku.ca
May 2, 2017

To: Don Sinclair, Program Coordinator, Digital Media
Subject: Support for the creation of a new graduate program in Digital Media

It is with great pleasure that I offer, on behalf of the Lassonde School of Engineering, my strong support for the establishment of a new and unique joint Graduate Program in Digital Media between our Electrical Engineering and Computer Science (EECS) Department and the newly proposed Department of Computational Arts in the School of the Arts, Media, Performance and Design (AMPD). This new graduate program will offer the full suite of degrees, namely MA, MSc and PhD.

The Lassonde School of Engineering embraces the Renaissance Engineering philosophy that integrates proven research strengths of the broader York University community to answer complex global socioeconomic questions, challenges and concerns. We promote a research culture that fosters and supports the cross pollination of ideas and disciplines, empowers critical thinkers, creative researchers and problem-solvers, and engages industry leaders and entrepreneurs, who understand and embrace humanism, social responsibility and cultural diversity. The creation of the new joint graduate program in Digital Media between the two Faculties is clearly in symphony with our "Renaissance Engineering" philosophy that sees no organizational structures or administrative boundaries when it comes to research. The Digital Media program is a solid and accurate step towards trans-disciplinary research; it strengthens, augments and empowers our researchers and promotes our research culture and recognition.

One of Lassonde's research priorities is Intelligent and Interactive Systems that addresses fundamental issues within the computational basis of intelligence and mediation between human and computer systems. Research in artificial intelligence, computer vision and data mining and analytics addresses systems that employ sensing, reasoning and action to mediate their interaction with the user and/or environment. It also includes interactive systems, assistive technology, computer graphics, digital media, human-computer interaction, virtual and augmented reality as well as social media. The new Digital Media program will attract highly qualified students to carry out research that uniquely combines science, technology, engineering, mathematics and artistic processes and practices. Such integration of activities is truly innovative and unique and comes to fill a void in Ontario. The Digital Media proposal articulates such a need and demand. We fully support this initiative.
The proposed program content and curriculum structure is complementary to both departments with very well thought out 'core' and 'depth' courses (existing and new courses alike) that provide ample flexibility to students from both Schools while promoting depth of knowledge with resources that are already in place. The enrolment targets presented in the program brief are realistic and aligned with the goals for both Schools. The proposed program is considered by Lassonde as an important and transformative investment in interdisciplinary research that is going to intensify York's research and increase impact by attracting very talented and enthusiastic graduate students who will be the heart and soul of our research programs.

At Lassonde, we maintain transparency, fairness and sustainability regarding the use of research space. Our space plan provisions an open inventory of Lassonde space resources, including room dimensions, services, equipment, images, etc. Space request, allocation and re-allocation mechanisms have been developed for regular periods and periods of increased research funding. Our high priority is the design of a new building that will provide primarily research space to accommodate our strategic research priorities and the associated significant increase of our graduate students. Our “intelligent and interactive systems” strategic research priority envisions significant strengthening and expansion of the digital media program that will be provided with new research space to grow and excel.

The Lassonde School of Engineering strongly believes that developing meaningful partnerships at the institutional level is a culture that creates strong potential for enhanced graduate education and scholarship and for truly impactful research enterprise through a sustainable inter- and trans-disciplinary research. The current proposal is promising to exactly achieve this. The Lassonde School of Engineering is strongly supportive of the proposed graduate program in Digital Media.

Sincerely yours

[Signature]

Spiros Pagiatakis PhD, PEng
Associate Dean Research and Graduate Studies
MEMORANDUM

To: Professor Donald Sinclair
   Co-ordinator, Digital Media Program
   School of the Arts, Media, Performance and Design.

From: Joy Kirchner, University Librarian

Date: January 4, 2016.

Subject: Library Statement of Support for the Proposed M.A., M. Sc. And Ph.D programs in Digital Media in the School of the Arts, Media, Performance and Design and the Lassonde School of Engineering

York University Libraries are well positioned to provide strong support for the proposed graduate programs in Digital Media housed jointly in the School of the Arts, Media, Performance and Design, and the Lassonde School of Engineering. As Rob van der Bliek has noted in his comprehensive statement, we are pleased to offer a wide array of resources, instructional services and research support across many disciplines that provide strong foundational library support. In anticipation of a positive outcome for these proposed programs, we look forward to working closely with faculty and students in the future to continue to build on this foundation.

Students in the School of the Arts, Media, Performance and Design and the Lassonde School of Engineering have been extremely well served by the outreach activities and expertise of all of the librarians and committed staff in York University Libraries. In addition to continuing to build extensive collections for teaching, learning, and research in the field, targeted library instruction has bolstered the research skills of current students and will do so for future students as well. Research assistance continues to be offered both in the libraries and online, and students may use the librarian consultation service which is available by appointment. The Libraries also have a complement of digital specialists on digitization, data mining, data management, digital publishing platforms and metadata expertise. There is opportunity to explore Library programmatic partnerships in a variety of areas where we have complementary expertise in the digital arena and research methods.

As noted in the new program brief, these proposed programs situate York in an important strategic development of digital culture research – an area of strategic interest for York University Libraries as well. We look forward to learning of a positive outcome and for the potential to collaborate with AMPD and the Lassonde School of Engineering in this critical emerging discipline.

cc: Rob van der Bliek, Liaison Librarian, Digital Media
    Catherine Davidson, Associate University Librarian, Collections and Research
I. INTRODUCTION

This library statement is written in support of the proposed M.A., M.Sc. and Ph.D. Program in Digital Media housed jointly in the School of the Arts, Media, Performance and Design and the Lassonde School of Engineering. The Libraries support the program in Digital Media through collections, instructional services, research assistance, access to knowledge resources, supporting research dissemination and providing adaptive services.

This library support statement has been prepared in accordance with the guidelines outlined in the Quality Assurance Framework as set out by the Ontario Universities Council on Quality Assurance.

II. COLLECTIONS SUPPORT

York University Libraries’ collections currently support undergraduate and graduate programs (where applicable) in the disciplines in the School of the Arts, Media, Performance and Design relating to the proposed degree i.e. Dance, Design, Digital Media, Film, Music, Theatre and Visual Arts. The Libraries also support undergraduate and graduate programs in the Lassonde School of Engineering in computer science, computer security, electrical engineering, computer engineering, software engineering and digital media.

Formats

The collection comprises print, digital, audio-visual, numeric and microform resources in the form of monographs, journals, reference materials, films, videos, DVDs, music, maps and statistics housed primarily in the Scott Library and the Steacie Science and Engineering Library, but material may also be found at the Frost Library, the Peter F. Bronfman Business Library, and the Law Library. Online resources can be accessed off-campus through the York University Libraries’ website (www.library.yorku.ca). Increasingly, a wide variety of scholarly open-access materials are available, stored in local institutional as well as international public repositories.

Reference Materials

Print and digital specialized encyclopedias, dictionaries, glossaries, handbooks, directories, bibliographies, and much more are available in the Libraries’ collections and on web pages.
Books and e-book collections

Materials of both research and instructional value are purchased to support the disciplines as well as professional practice in the areas of focus of the undergraduate and graduate programs. Divergent approaches to the disciplines are also represented. The collection includes both scholarly and trade monographs. All titles listed as prescribed or recommended reading for courses are routinely purchased. Electronic versions of texts are also provided where possible so that access is more readily available. The Libraries support undergraduate and graduate programs in a broad range of disciplines and acquire materials in a wide range of subject areas. Related and visual source material is found throughout the collection.

The Visual Arts, Design & Theatre Librarian, the Music Librarian and the Dance & Media Librarian are responsible for selecting material within the disciplines of the School of the Arts, Media, Performance and Design. The Electrical Engineering and Computer Science Librarian is responsible for selecting materials within across the various computing-related disciplines. Students in these programs often use materials that fall outside of the discipline itself. Therefore the Liaison Librarians work closely with other subject librarians to ensure that materials relevant to Digital Media falling outside of their selection areas are routinely acquired. For selection the Liaison Librarians rely on a variety of approval plans, alert slips provided by several different book vendors, and a wide range of publishers catalogues. York University Libraries currently have in place a large international approval plan with YBP Library Services which provides an online alert and ordering system. This approval plan also allows for an especially quick receipt of shelf-ready titles with cataloguing copy that allows them to be available to users shortly after arrival. The Liaison Librarians also respond to direct requests from both faculty and students.

Print Journals and e-journals

The collection includes a core collection of scholarly and trade periodicals. Full-text periodicals are increasingly available through electronic databases. Growth in the journal collection has been possible recently because of York University Libraries' participation in consortial purchases of electronic journals from major publishers.

Databases, Indexes and Bibliographies

To assist students in accessing periodical literature the library subscribes to all the major electronic indexes and databases available for Dance, Design, Film, Music, Theatre and Visual Arts. As well, the library subscribes to all the major Engineering and Computer Science indexes, ebook packages and journal publisher databases.

Films and Videos

In addition to traditional print materials the library collects films and videos in a wide range of subject areas, all of which are housed in the Sound and Moving Image Library.

Archival Materials and Special Collections

The York University Clara Thomas Archives and Special Collections is an important repository for media of all types, including film, sound recordings, author’s and composer’s fonds.
III. SUPPORT FOR TEACHING AND LEARNING

York University Libraries has an active information literacy program supporting undergraduate and graduate students.

Library Workshops

The Libraries offer research skills workshops to undergraduate and graduate students. These drop-in, hands-on workshops help undergraduate students develop higher-level research skills to support scholarly research. The Libraries also offer specialized workshops for graduate students, highlighting online tools and skills needed.

In-Class Instruction

The Liaison Librarians are available to offer course- or discipline-specific library instruction sessions in the studio, lecture hall, or library hands-on computer labs, focusing on research strategies and resources appropriate to particular assignments. The Liaison Librarians can collaborate with course directors to develop IL sessions and research-based assignments that will teach not only information retrieval skills, but also the skills to critically evaluate current research and advanced research and scholarship in the relevant disciplines.

Individual Research Assistance

Individual research assistance is available to both undergraduate and graduate students in person, as well as via online chat, email, and telephone. All eight libraries at York University provide a Reference / Research Desk where students can request individual assistance with finding and using library resources and developing effective search strategies as well as technical assistance. At both the Scott Library and Steacie Libraries, in-person research assistance is available 7 days a week, including evenings and weekends. (Hours may be reduced during the summer and between academic terms.). The online chat reference service, “Ask-a-Librarian,” extends research assistance to 10 p.m. on weeknights. Graduate students are also able to arrange a one-on-one research consultation with the Liaison Librarians.

IV. LIBRARY SERVICES & PLACES

Library Website:  www.library.yorku.ca

The library website is the central starting point for accessing the range of resources and services York University Libraries have to offer. Access to library resources is provided through the library’s online catalogue which lists holdings for the entire library system. Through the library’s website users can also access the library’s vast array of electronic databases. Library research guides are available on the library homepage as well as course-specific research guides. Enhanced computer workstations that offer a wide range of computer software applications including Microsoft Office products are available throughout the libraries. Facilities for printing and photocopying are available in the library as well as options for saving to disk or emailing to a remote location.

Scott Library Learning Commons

The Scott Library Learning Commons brings together librarians, writing specialists, learning specialists and career advisors into a single, student-friendly space where students are welcome to drop-in for personal assistance with all aspects of the research and writing process. Professional staff can assist with choosing an appropriate research topic, identifying and
evaluating the best scholarly materials on the topic, improving reading and note-taking skills, developing a thesis statement, preparing an outline and learning to edit the essay, formatting a bibliography, and more.

Graduate Study Room

The Scott Library offers a large, attractive study room on its 4th floor for the exclusive use of York University graduate students, with desk seating space for 120+ people. Graduate students using the room have access to York’s wireless network as well as to hardwired network drops, electrical outlets for laptops, 6 computers, and a private printer activated by York student printing accounts. The room, fully accessible to accommodate differently abled graduate students, provides lounge seating, reading lamps, lockable carrels, and a noise reduction system for student comfort, and is accessible via a door code available to graduate students only.

Library Accessibility Services

Located on the first floor of Scott Library, Accessibility Services provides equitable access to the full range of library services, resources and facilities for all York University students, faculty and staff. Self-sufficient learning is promoted in a welcoming and supportive environment equipped with assistive technologies to accommodate our diverse community. A variety of services is available by arrangement with Library Accessibility Services. Facilitated library services include recording books to audiotape, transcribing materials to Braille, retrieving items from the library stacks, using adaptive technology, accessing the Scott Library’s adaptive equipment lab, and arranging individual research assistance.

Scholarly Communication and Open Access

Graduate students are invited to deposit their theses or major research papers (MRP) in York Space, York’s institutional digital repository. Scholarly materials self-archived in York Space are then findable and accessible worldwide via Google Scholar, with full bibliographic data intact and without the loss of authorial rights. The nonexclusive archiving of graduate student research work in York’s digital repository lends an institutional imprimatur and increases a student’s scholarly profile while protecting the work for future use.

Managing Research Results

While YUL has discontinued access to RefWorks, technical support for the use of citation management software, including Zotero and Mendeley, is available within the Libraries. Guides created by York librarians are available for both citation management tools: researchguides.library.yorku.ca/zotero researchguides.library.yorku.ca/mendeley

Dataverse is an online platform for management of research data provided by OCUL, the consortium of Ontario academic libraries. Researchers and students can create and manage their own records by depositing data, providing text descriptions of studies, and can determine their own access conditions to metadata. For further information please see the website guide for Dataverse at guides.scholarsportal.info/dataverse for assistance in setting up a Dataverse research data management account.

Off Campus Resources

Interlibrary Loan is available to supplement the resources of the York University Libraries by making available research material not held by the library from other libraries, organizations and document delivery services. York University Libraries participate in the Ontario universities’
interlibrary loan program RACER (Rapid Access to Collections by Electronic Requesting), an initiative of Scholars Portal. RACER expedites the process of borrowing materials from other libraries in the Ontario university libraries’ consortium as well as from other Canadian universities. RACER requests can be made through the library web site. York University Libraries fully subsidizes books and microforms obtained through interlibrary loan.

Students at York University have borrowing privileges at all Ontario universities that are members of the Ontario Council of University Libraries (OCUL) (excluding the University of Toronto). They may also borrow directly from Quebec university libraries through the Inter-University Borrowing Project. Students at York are fortunate to find themselves in close proximity to several rich repositories of resources in the Toronto area. For research and advanced study they depend on several libraries in downtown Toronto: the Robarts Library and Thomas Fisher Rare Book Library at the University of Toronto, the Royal Ontario Museum Library, the Art Gallery of Ontario Library, the Ontario College of Art and Design University Library, and the Metro Toronto Reference Library.

V. CONCLUSION

The Libraries’ collections and services are able to support the teaching, learning and research needs of the proposed M.A., M.Sc. and Ph.D. Program in Digital Media housed jointly in the School of the Arts, Media, Performance and Design and the Lassonde School of Engineering. Collection development is ongoing, and is based on a commitment to developing library resources that are in alignment with the University’s curricular and research activities. The Libraries look forward to maintaining its important working relationship with faculty in Digital Media Studies to ensure that the Libraries have the resources in place to support the teaching, learning and research needs of students and faculty.
## APPENDIX 1: LIBRARY STATISTICS (from 2013-14 York University Libraries Annual Report)

### CIRCULATION

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<thead>
<tr>
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<tbody>
<tr>
<td>Scott</td>
<td>78,661</td>
<td>102,247</td>
<td>78,545</td>
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<td>Reserves</td>
<td>180,576</td>
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<td>135,647</td>
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<td>Total</td>
<td>305,551</td>
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<tr>
<td>Sound and Moving Image Library</td>
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<td>Circulation</td>
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<td>803</td>
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<td>Total</td>
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<td>Map Library</td>
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<td>Total</td>
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<td>Bronfman</td>
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<td>Circulation</td>
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<td>Total</td>
<td>14,845</td>
<td>13,253</td>
<td>12,378</td>
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<tr>
<td>Frost</td>
<td>20,136</td>
<td>18,177</td>
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<tr>
<td>Circulation</td>
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<tr>
<td>Total</td>
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<tr>
<td>Steacie</td>
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<td>Circulation</td>
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<tr>
<td>Self check</td>
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<td>Total</td>
<td>52,382</td>
<td>45,846</td>
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<td><strong>Total Circulation</strong></td>
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<td><strong>Total Item Circulation</strong></td>
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<tbody>
<tr>
<td><strong>Nellie Rowell Langford Library</strong></td>
<td>1,636</td>
<td>1,425</td>
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<tr>
<td><strong>Education Resource Centre</strong></td>
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<td>14,021</td>
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### USE OF ERESOURCES

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<th>2011/2012</th>
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<tr>
<td>Number of successful fulltext article requests</td>
<td>2,580,451</td>
<td>2,967,518</td>
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<tr>
<td>Number of database searches</td>
<td>11,373,598</td>
<td>11,942,278</td>
<td>21,373,886</td>
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### LAPTOP LENDING

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<td>3,703</td>
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<tr>
<td>Bronfman</td>
<td>398</td>
<td>252</td>
<td>292</td>
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<tr>
<td>Frost</td>
<td>8</td>
<td>6</td>
<td>336</td>
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<tr>
<td>Steacie</td>
<td>1,335</td>
<td>581</td>
<td>208</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>8,697</strong></td>
<td><strong>4,542</strong></td>
<td><strong>2,224</strong></td>
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</tbody>
</table>
### APPENDIX 1: LIBRARY STATISTICS (from 2013-14 York University Libraries Annual Report)

#### ITEMS SHELVED

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<th>2011/2012</th>
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<th>2013/2014</th>
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<tr>
<td><strong>Scott</strong></td>
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<tr>
<td>Circulation</td>
<td>646,382</td>
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<td>Government Documents</td>
<td>7,039</td>
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<td>Microtext</td>
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<td>17,083</td>
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<td>Reference</td>
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<td>Reserves</td>
<td>9,679</td>
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<td>Map Library</td>
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<td>Archives &amp; Special Collections</td>
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<td><strong>Bronfman</strong></td>
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</tr>
<tr>
<td><strong>Frost</strong></td>
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<tr>
<td><strong>Steacie</strong></td>
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<tr>
<td>Total</td>
<td>830,039</td>
<td>671,782</td>
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#### COLLECTION GROWTH

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<th>As of April-30-14</th>
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<td>4,653</td>
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<td><strong>Digital Journal Titles</strong></td>
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<tr>
<td><strong>Digital Monograph Titles</strong></td>
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<td><strong>Media</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maps</td>
<td>112,934</td>
<td>113,477</td>
<td>113,534</td>
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<tr>
<td>Aerial Photographs</td>
<td>5,051</td>
<td>5,051</td>
<td>5,051</td>
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<tr>
<td>GIS Data titles</td>
<td>684</td>
<td>684</td>
<td>698</td>
</tr>
<tr>
<td>Sound Recordings</td>
<td>43,302</td>
<td>43,591</td>
<td>44,732</td>
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<tr>
<td>Videocassettes</td>
<td>8,922</td>
<td>8,870</td>
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<tr>
<td>Films</td>
<td>2,708</td>
<td>2,679</td>
<td>2,679</td>
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<tr>
<td>DVDs</td>
<td>18,110</td>
<td>19,454</td>
<td>21,315</td>
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<tr>
<td><strong>Manuscripts and Archives</strong></td>
<td>4,504</td>
<td>4,543</td>
<td>4,657</td>
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<tr>
<td>Manuscripts (Linear metres)</td>
<td>918</td>
<td>925</td>
<td>942</td>
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<tr>
<td>University Records (Linear metres)</td>
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<td>399</td>
<td>399</td>
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<tr>
<td>Photographs (Linear metres)</td>
<td>88,955</td>
<td>89,004</td>
<td>89,072</td>
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<td><strong>Titles Catalogued</strong></td>
<td>380,207</td>
<td>193,230</td>
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</table>

#### DIGITAL COLLECTIONS @ York

<table>
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<tr>
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<th>2011/2012</th>
<th>2012/2013</th>
<th>2013/2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Items Created</td>
<td>14,739</td>
<td>30,124</td>
<td>24,334</td>
</tr>
<tr>
<td>Total Digital Items</td>
<td>54,355</td>
<td>86,605</td>
<td>110,939</td>
</tr>
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</table>
### APPENDIX 1: LIBRARY STATISTICS (from 2013-14 York University Libraries Annual Report)

#### RESOURCE SHARING

<table>
<thead>
<tr>
<th></th>
<th>2011/2012</th>
<th>2012/2013</th>
<th>2013/2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>ILL, Interfilm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Lending</td>
<td>10,777</td>
<td>9,535</td>
<td>8,831</td>
</tr>
<tr>
<td>ILL, Interfilm</td>
<td>5,301</td>
<td>4,591</td>
<td>4,445</td>
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#### REFERENCE SERVICES

<table>
<thead>
<tr>
<th></th>
<th>2011/2012</th>
<th>2012/2013</th>
<th>2013/2014</th>
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</thead>
<tbody>
<tr>
<td>Scott</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information Desk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>2,543</td>
<td>9,341</td>
<td>8,848</td>
</tr>
<tr>
<td>Other</td>
<td>36,252</td>
<td>21,389</td>
<td>7,275</td>
</tr>
<tr>
<td>Total Transactions</td>
<td>38,795</td>
<td>30,730</td>
<td>16,123</td>
</tr>
<tr>
<td>Scott Reference</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>8,821</td>
<td>8,327</td>
<td>7,234</td>
</tr>
<tr>
<td>Other</td>
<td>3,360</td>
<td>1,546</td>
<td>1,289</td>
</tr>
<tr>
<td>Total Transactions</td>
<td>12,181</td>
<td>9,873</td>
<td>8,523</td>
</tr>
<tr>
<td>Sound and Moving Image</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>5,223</td>
<td>1,633</td>
<td>862</td>
</tr>
<tr>
<td>Other</td>
<td>980</td>
<td>181</td>
<td></td>
</tr>
<tr>
<td>Total Transactions</td>
<td>5,223</td>
<td>2,613</td>
<td>1,043</td>
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<tr>
<td>Map Library</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Reference</td>
<td>3,414</td>
<td>1,083</td>
<td>570</td>
</tr>
<tr>
<td>Other</td>
<td>2,253</td>
<td>1,499</td>
<td>1,423</td>
</tr>
<tr>
<td>Total Transactions</td>
<td>5,667</td>
<td>2,582</td>
<td>1,993</td>
</tr>
<tr>
<td>Archives &amp; Special Collections</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Users</td>
<td>675</td>
<td>641</td>
<td>345</td>
</tr>
<tr>
<td>Returning users</td>
<td>387</td>
<td>484</td>
<td>235</td>
</tr>
<tr>
<td>Total Users</td>
<td>1,062</td>
<td>1,125</td>
<td>580</td>
</tr>
<tr>
<td>Bronfman</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>5,559</td>
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<tr>
<td>Other</td>
<td>14,214</td>
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<td>14,863</td>
</tr>
<tr>
<td>Total Transactions</td>
<td>19,773</td>
<td>21,457</td>
<td>21,278</td>
</tr>
<tr>
<td>Steacie</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>12,409</td>
<td>4,203</td>
<td>4,305</td>
</tr>
<tr>
<td>Other</td>
<td>4,231</td>
<td>5,216</td>
<td>3,203</td>
</tr>
<tr>
<td>Total Transactions</td>
<td>16,640</td>
<td>9,419</td>
<td>7,508</td>
</tr>
<tr>
<td>Frost</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>2,693</td>
<td>1,908</td>
<td>1,557</td>
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<tr>
<td>Other</td>
<td>2,146</td>
<td>2,320</td>
<td>2,300</td>
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<tr>
<td>Total Transactions</td>
<td>4,839</td>
<td>4,228</td>
<td>3,857</td>
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<tr>
<td>Total Reference</td>
<td>44,050</td>
<td>33,952</td>
<td>30,371</td>
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<tr>
<td>All Transactions</td>
<td>105,439</td>
<td>82,727</td>
<td>60,905</td>
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<tr>
<td>Virtual Reference</td>
<td>2,435</td>
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<td>2,470</td>
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### LIBRARY INSTRUCTION

<table>
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<td>Classes</td>
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<td>Classes</td>
</tr>
<tr>
<td>Archives</td>
<td>31</td>
<td>801</td>
<td>33</td>
</tr>
<tr>
<td>Bronfman</td>
<td>115</td>
<td>3,338</td>
<td>98</td>
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<tr>
<td>Frost</td>
<td>64</td>
<td>2,169</td>
<td>73</td>
</tr>
<tr>
<td>Maps</td>
<td>48</td>
<td>1,423</td>
<td>39</td>
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<tr>
<td>Scott</td>
<td>347</td>
<td>13,099</td>
<td>382</td>
</tr>
<tr>
<td>Steacie</td>
<td>89</td>
<td>5,460</td>
<td>129</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>694</strong></td>
<td><strong>26,290</strong></td>
<td><strong>754</strong></td>
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</table>

### LIBRARY ACCESSIBILITY SERVICES

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<thead>
<tr>
<th></th>
<th>2012/13</th>
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</thead>
<tbody>
<tr>
<td>Pages Scanned</td>
<td>747,987</td>
<td>617,963</td>
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<tr>
<td>Total Texts Provided</td>
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### STUDY SEATS

<table>
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</tr>
</thead>
<tbody>
<tr>
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<td>2,108</td>
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<td>Frost</td>
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<td>Steacie</td>
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<td><strong>Total</strong></td>
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### Turnstile Count

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<th>2013/14</th>
</tr>
</thead>
<tbody>
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<td>Scott</td>
<td>2,559,753</td>
<td>2,512,098</td>
<td>2,426,675</td>
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<tr>
<td>Bronfman</td>
<td>292,911</td>
<td>282,736</td>
<td>287,969</td>
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<tr>
<td>Frost</td>
<td>108,575</td>
<td>89,598</td>
<td>82,480</td>
</tr>
<tr>
<td>Steacie</td>
<td>432,640</td>
<td>382,120</td>
<td>278,995</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,393,879</strong></td>
<td><strong>3,266,552</strong></td>
<td><strong>3,076,119</strong></td>
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</table>

### OPERATING BUDGET

<table>
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<tr>
<th></th>
<th>2011/2012</th>
<th>2012/2013</th>
<th>2013/2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries</td>
<td>$11,007,011</td>
<td>$11,360,677</td>
<td>$11,426,013</td>
</tr>
<tr>
<td>Part Time Assistance</td>
<td>$908,958</td>
<td>$772,729</td>
<td>$944,488</td>
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<tr>
<td>Benefits</td>
<td>$2,632,769</td>
<td>$2,685,270</td>
<td>$2,693,041</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td>$14,548,738</td>
<td>$14,818,676</td>
<td>$15,063,542</td>
</tr>
<tr>
<td>Collections</td>
<td>$10,374,644</td>
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<td>$10,547,459</td>
</tr>
<tr>
<td>Binding</td>
<td>$31,114</td>
<td>$30,000</td>
<td>$40,796</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>$10,405,758</td>
<td>$10,450,140</td>
<td>$10,588,255</td>
</tr>
<tr>
<td>General operating</td>
<td>$1,975,435</td>
<td>$2,002,775</td>
<td>$1,826,869</td>
</tr>
<tr>
<td>Total Expenses</td>
<td>$26,929,931</td>
<td>$27,271,591</td>
<td>$27,478,665</td>
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<tr>
<td>Recovery</td>
<td>$973,142</td>
<td>$965,004</td>
<td>$887,945</td>
</tr>
<tr>
<td><strong>Total Expenses less recovery</strong></td>
<td>$25,956,789</td>
<td>$26,306,587</td>
<td>$26,590,721</td>
</tr>
<tr>
<td>Gifts in Kind</td>
<td>$588,980</td>
<td>$890,825</td>
<td>$523,535</td>
</tr>
</tbody>
</table>
Don Sinclair  
School of the Arts, Media, Performance and Design  

December 18, 2015  

Re: Library support for proposed Digital Media courses  

I’ve looked at the proposals for the following in the context of library support:

- GS/DMG 5000 3.0 Digital Media Research Skills  
- GS/DMG 5010 3.0 Foundations of Digital Media  
- GS/DMG 5020 3.0 Advanced Vertical Studio/Lab  
- GS/DMG 5200 3.0 Experimental Telepresence  
- GS/DMG 5510 3.0 Physical Computing III  
- GS/DMG 5520 3.0 Spatial Computing and Responsive Environment  
- GS/DMG 5940 3.0 Generative and Parametric Modelling  
- GS/DMG 5950 3.0 Artificial Life, Generative Art and Creative Code  
- GS/DMG 5960 3.0 Machine Learning and Artificial Intelligence for Performance

I’ve looked through the reading lists and can report that, for the most part, the library can provide access to the material. Hardcopy items will mostly be held in the Steacie Science and Engineering Library, but there is also a growing collection on online books, journals and conference proceedings, especially in computer science. Collections such as Books 24/7, Engineering Pro, Safari Books Online, Synthesis Digital Library of Engineering and Computer Science, and SPIE Digital Library will be particularly useful. For journals, there are the large ACM and IEEE digital libraries. But I can also see that there is a broader scope that goes beyond the technology, and this is where the general social sciences and humanities collections in Scott Library will be invaluable, especially with respect to areas such as generative art and artificial intelligence.

I have placed orders for items listed with these courses but not found in our libraries. If there are items that need to be purchased, then let me know and I will coordinate the purchases with the librarians responsible for science and engineering.

Best regards,

Rob van der Bliek  
Music Librarian and Associate Faculty, Graduate Program in Music
Monday, February 8, 2016

To Academic Standards, Curriculum and Pedagogy Committee:

Re: New Program Brief of the M.A., M.Sc. and Ph.D. Program in Digital Media Proposal

I am supportive of the proposed new graduate degree program in Digital Media as described in the proposal from the School of the Arts, Media, Performance and Design and Lassonde School of Engineering.

I confirm that the implementation of the proposed admission requirements have been reviewed and are within capacity.

Regards,

Carol Altilia, University Registrar
Att: Nell Tenhaaf, Associate Dean, Research,
Graduate Studies and Planning
School of the Arts, Media, Performance and Design
York University

Dear Nell,

I am pleased to be writing you today to offer my support of the York Graduate Program in Digital Media, a program that is on the forefront of progress by recognizing the value in interdisciplinary training and research.

Today’s Interactive Digital Media (IDM) industry is a competitive field and employers are constantly on the lookout for highly trained candidates who have a multi-disciplinary background in not only design but also STEAM (Science / Technology / Engineering / Arts / Math.)

The York Graduate Program in Digital Media offers students the opportunity to develop critical skills in project development and management, interdisciplinary research methods, iterative design, and technology applications, key features in obtaining jobs in the digital media sector.

By offering training for students that includes a sophisticated understanding of digital media, with integrated capacities in science, technology, engineering and mathematics, creativity for digital media content (arts, entertainment, engineering design, etc.) and cultural literacies, they are being armed with the knowledge and skills they require to enter this exciting and diverse industry.

I look forward to seeing graduates of this program working in the IDM industry and creating the technologies of tomorrow.

Best,
Christa Dickenson

Executive Director
Interactive Ontario
April 29, 2015

To Whom it May Concern:

I am writing in support of York University’s Digital Media program and its proposal for a graduate program. The digital sector is increasingly challenged to find qualified personnel with both a comprehensive technological foundation and a creative mindset. An interdisciplinary candidate is ideal for many job positions in the digital sector because of their dual competency in formal logic and abstract thinking. This valuable combination is very hard to find and most often does not result from formal education.

An university program which could provide students with these real-world skills would be a great asset to the digital sector. Technology is continuously changing and a successful employee will need to demonstrate an ability to learn and adapt to a variety of situations and technology. Training for single task or skill is not longer a model works well anymore. A program which could prepare students for the varied challenges and requirements they will face in the digital sector is greatly needed.

The multifaceted nature of the digital sector is perfect for an interdisciplinary approach; the digital sector contains a broader scope than simply game development and web-based media. Graduates who can incorporate both aesthetics and pragmatics will be crucial in developing the next-generation of technology as the human-computer interface becomes ever more integrated. The exhibit I saw recently by York University’s Digital Media undergraduate program has confirmed to me that such a university program would be a tremendous benefit to its graduates and the digital sector as a whole.

Sincerely,

Chris Ellefson
Dear Dr. Tenhaaf:

It is my pleasure to write a letter in support of the Graduate Program in Digital Media at York University.

In my role as Managing Director of the Canadian Digital Media Network, I continually hear from companies right across our network that one of their key challenges is talent recruitment. Our sector is increasingly challenged to seek out and aggressively compete for highly qualified personnel (HQP) who are trained in highly specialized technical, scientific and design training in emerging media.

The York Graduate Program in Digital Media promises to produce the next-generation of HQP trained in a sophisticated understanding of digital media, with integrated capacities in science, technology, engineering and mathematics, creativity for digital media content and cultural literacies, each of which is key to the success of students’ endeavours in next generation digital media jobs.

Working in multidisciplinary project-based research, the critical skills that students in this program will learn in project development and management, interdisciplinary research methods, iterative design and technology applications are critical to many jobs in both traditional technology companies as well as in other companies looking to hire for technical roles.

The program proposed by York encompasses game development and web-based media, but I’m encouraged to note that its definition of digital media is broader: encompassing many aspects of technology development, computer science, media art, and cultural studies focused on emerging technologies.

A new generation of developers and practitioners can act in collaboration with science and engineering to pioneer the development of next-generation technology for a wide range of emerging areas.

I fully support the creation of a Graduate Program in Digital Media at York University. Not only will these graduates be in a better place to secure employment, but they will meet the increasing needs of the companies looking to hire them, helping Canada’s digital industries succeed in a global marketplace.

Sincerely,

Avvey Peters, Managing Director
Canadian Digital Media Network
Appendix E: Appointment Criteria

Graduate Program in Digital Media (MA, MSc, and PhD)

Program-Specific Criteria for Appointment and Re-Appointment

Applications

Potential candidates are invited to apply for appointment to the graduate program in Digital Media. Potential candidates are typically tenure stream/contractually limited faculty members from the Department of Computational Arts or the Department of Electrical Engineering and Computer Science at York but visiting faculty, and faculty in other departments are also invited to apply. In the case of periodic review of re-appointments, existing members of the program will be notified at least three months before the program's recommendations must be submitted to FGS. Potential candidates and existing members are asked to submit to the director an up-to-date curriculum vitae in the OCGS format including a description of graduate teaching and supervision.

Criteria

The overriding document is the latest FGS Policy on Appointments to the Faculty of Graduate Studies [1]. According to this document the criteria for membership in the Faculty of Graduate Studies include:

1. A Ph.D. (or equivalent) degree or otherwise demonstrated achievement as a researcher, scholar, professional or artist in accordance with the expectations of the discipline;
2. Evidence of continuing contribution to research or scholarship or professional or artistic activity in a form which is available for peer review and critical analysis; and
3. When previously engaged in graduate teaching or supervision, evidence of satisfactory performance as an instructor and/or supervisor.

The Digital Media Graduate Program Executive Committee serves as the committee to advise on program-specific appointment criteria, procedures and appointments. This committee may delegate responsibility to the Graduate Program Director regarding the approval or recommendation for approval of appointments, as appropriate.

Interpretations of Criteria Scholarly Activity

Reasonable expectations for members in the Graduate Program in Digital Media will vary according to their status, role and administrative responsibilities. It is reasonable to expect fewer publications and lower levels of research funding from faculty members who are (i) as yet untenured recent PhD’s, or (ii) heavily involved in administration, but can offer valuable contributions to the Graduate Program. However, the majority do not fall into the above (or similar) "exceptional" categories. For these "standard" members, it is expected that their curricula vitae will demonstrate sustained and continuing contribution to scholarly research, creative and artistic productivity, and/or professional activity in the field of digital media over the last 6-8 years. Sustained and continuing contribution to these fields is understood to include, above all, written scholarly publications and/or creative and artistic presentations which are peer-reviewed, curated, or critically reviewed. It also includes conference or symposia papers; and academic, artistic, and or/creative awards and honours.
**Full Members**, who may undertake principal supervision of doctoral dissertations, must have a PhD (or equivalent). Expectation of research/scholarly/creative activity is an average of one entry in the curriculum vitae per year over the 6-8 year span, including 3-4 outcomes such as peer or critically reviewed publications, major exhibition of creative work, successful applications for external grants or funding or activities with expectation of future outcomes. Outstanding contributions, e.g. a significant book, major exhibition of creative work, or major research grant, would be weighted more heavily. Insufficient evidence of continued research, scholarship, professional or creative activity at an advanced level will normally result in a recommendation for an Associate Member appointment that excludes principal supervision of doctoral dissertations.

**Associate Members** may undertake principal supervision of masters projects, and serve on doctoral dissertation supervisory committees. While a PhD is desirable for Associate Members, it is not essential. However, Associate Members are expected to hold, at a minimum, a master’s degree or equivalent, or have demonstrated achievement as an artist, professional, scholar, or researcher in accordance with the expectations of the discipline. Further restrictions may also be recommended for Associate Members whose contributions to the graduate program should be limited to specific activities that are consistent with the level of their continued research, scholarship, professional or artistic activity.

These represent reasonable expectations; however, it is recognized that not all forms of evidence of sustained scholarly activity are explicitly described by the guidelines. Any candidate not explicitly meeting the above guidelines will have their scholarly activity judged by the Graduate Program Executive Committee to see if they are commensurate with the above guidelines.

**Graduate Teaching and Supervision**

Satisfactory graduate teaching requires evidence of effective communication of relevant theoretical and conceptual material and the design of research level courses. Means of demonstrating satisfactory performance as a graduate instructor may include peer evaluation and student evaluation of teaching and curriculum design, taking into account such matters as the scholarly or creative content of teaching materials, the currency of such materials, the application of relevant research methodologies, the effectiveness of the individual’s communication as a graduate teacher, and the use of appropriate pedagogic techniques. Means of demonstrating satisfactory performance as a graduate supervisor may include student evaluation and peer evaluation by, in particular, members of supervisory and examining committees of students supervised by the individual, taking into account such matters as the availability and effectiveness of the supervisor and their relative contribution to the quality of the student’s work and its completion within a reasonable time. Research output from graduate students in the form of publications and presentations are viewed very positively.

**Appointments and recommendations**

The Graduate Program Director will examine each applicant's CV and also assess any previous graduate teaching and supervision as described above. The Graduate Program Director shall ask the Graduate Program Executive Committee to review the CVs and supporting documentation of all applicants.

For the categories of Associate Membership, Members Emeriti and Adjunct Membership, the Graduate Program Executive Committee will decide on appointments and report its decisions with rationales to the Graduate Program Director. In turn, the Graduate Program Director will report such appointments to the Faculty of Graduate Studies. For the categories of Full Membership and Associate Membership, the Graduate Program Executive Committee will provide recommendations with rationales to the Graduate Program Director. In turn, the Graduate Program Director will submit appointment packages to the Faculty of Graduate Studies Academic Planning and Policy Committee.
Decisions and recommendations on members of the Graduate Program Executive Committee (including the Graduate Program Director) will be made by the remaining members of the Graduate Program Executive Committee.

In very unusual situations of compelling and immediate Program needs, the Graduate Program Executive Committee may recommend (re)appointments of certain individuals who might not qualify under the formal conditions specified above. In such instances, the nature of the specific need must be clearly identified by the Graduate Program Executive Committee.

The Graduate Program Director will notify individuals of the Program's decision, by way of a copy of the Recommendation for Appointment/Reappointment form, which is to be submitted to FGS. Decisions against (re)appointment will be dealt with according to FGS policy.

Reference


February 2016