# Spring 2185 Semester Enrollment Guide

## New Media Interactive Development

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## 1 What courses should I take?

**Students who entered Fall 2017:** by now, you should have attended a mandatory advising group meeting in which you worked out a plan for the Fall semester. If you did not attend a meeting, please schedule through Starfish (refer to e-mails from your advisor about this meeting). Please use your program worksheet that was given to you at Orientation as well as the Academic Advising Report (AAR) on SIS to plan your schedule.

**Students who entered RIT before Fall 2017:** you need to follow your program worksheet and/or the Individualized Advising Plan (IAP). The IAP was drafted four or more years ago specifically for each student who enrolled in classes during the quarter and semester calendars and was discussed with you.
during an appointment with your advisor. Note: your IAP is “one, suggested path to degree completion.” You should be aware that if you have deviated from the path outlined by your academic advisor, it may impact your ability to graduate in the timeframe that was outlined for you.

Students who entered RIT in (or before) Fall 2012:

If you have an *Arts of Expression* course left to complete, you may enroll in a General Education Elective (any Math, Science, or Liberal Arts course coded as a General Education course). If you are required to complete a *foundational elective*, you may enroll in a General Education Elective (any Math, Science, or Liberal Arts course coded as a General Education course) to fulfill this requirement.

Students who entered RIT in Fall 2013:

- First Year Seminar: take a General Education Elective (any Math, Science, or Liberal Arts course coded as a General Education course).
- If you have an *Arts of Expression* course left to complete, you may enroll in a General Education Elective (any Math, Science, or Liberal Arts course coded as a General Education course).
- If you are required to complete a *foundational elective*, you may enroll in a General Education Elective (any Math, Science, or Liberal Arts course coded as a General Education course) to fulfill this requirement.

Students who entered RIT in Fall 2013:

- First Year Seminar: take a General Education Elective (any Math, Science, or Liberal Arts course coded as a General Education course).

2  IGM students taking (or who will take) 101, 102, 201 and 202

The following IGM classes, IGME-102, IGME-201, and IGME-202, have grade pre-requisites which SIS shows. If you earn a D or lower in a course that is a pre-requisite to one of those courses, you must retake the pre-requisite course. Here are the complete grade pre-requisites:

- If you earn a grade of D or lower in IGME-101, you cannot take IGME-102.
- If you earn a grade of D or lower in IGME-102, you cannot take IGME-201
- If you earn a grade of D or lower in IGME-102, you cannot take IGME-202.
- Please check with your academic advisor if you have any questions.

3  How do I search for courses?

Searching for all courses: see https://sis.rit.edu or https://tigercenter.rit.edu. All courses are coded with 4 letter subject codes. Courses offered by IGM are listed as IGME courses.

General Enrollment Questions: For more information regarding how to use SIS for Enrollment please view https://www.rit.edu/gccis/igm/academic-resources.

Arts & Science Perspectives: To search for these courses please follow these instructions:

2. Select Student Info System.
3. Click on Student Center.
4. Click Search For Classes button on the right.
5. Change the Term menu to the term you wish to look for courses.
6. Use Course Career menu to select Undergraduate.
7. Change course number to Greater than or equal to.
8. Enter the number 1 in the course field.
9. To see all options, uncheck Show Open Classes.
10. In the course attribute field, enter PERS.
11. Select the perspective you wish to search by clicking on the magnifying glass under course attribute value.
12. Click Search. This list displays all scheduled open and closed General Education classes for the perspective you chose.
13. To add a class to your shopping cart, click Select.

Tiger Center: A new class search tool developed by RIT students in partnership with ITS is now available. Tiger Center has the same functionality as SIS but may be more intuitive when searching for classes. https://classsearch.rit.edu/classSearch/home##/search

4 Co-op and Career Skills Preparation (IGME-99)

This course targets, and is required for, second-year students. This course helps students prepare for co-operative education employment (“co-op”) by developing job search strategies and material. Students will explore current and emerging aspects of IGM fields to help focus their skill development strategies. Students are introduced to RIT’s Office of Cooperative Education and Career Services, and learn about professional and ethical responsibilities for their co-op and subsequent professional experiences. Students will work collaboratively to build résumés and digital portfolios, and to prepare for interview situations.

The course will be offered Wednesdays from 3:00 PM – 3:50 PM in GOL-1400. Students can enroll through SIS or Tiger Center.

5 IGME Spring Semester core course descriptions

5.1 Reminders

These courses are offered in spring semester and are required (eventually) of all NMID majors. They are listed in numerical order. Any prerequisites for a course are listed in parentheses with quarter “equivalents” for those prerequisites [between square brackets]. Note that the quarter prerequisite courses are not necessarily equivalent to the corresponding semester courses—material from the quarter curriculum has been updated and repackaged under semesters. So, the quarter prerequisite courses listed encompass the necessary material for each semester course.

Remember that 4080-XYZ indicates courses under the quarter system, whereas IGME-ABC indicates courses under the semester system.

5.2 Descriptions

IGME-099 Co-op Preparation Workshop (0 credits):
This course helps students prepare for co-operative education employment (“co-op”) by developing job search strategies and material. Students will explore current and emerging aspects of IGM fields to help
focus their skill development strategies. Students are introduced to RIT’s Office of Cooperative Education and Career Services, and learn about professional and ethical responsibilities for their co-op and subsequent professional experiences. Students will work collaboratively to build résumés and digital portfolios, and to prepare for interview situations.

The course will be offered Wednesdays from 3:00 PM – 3:50 PM in GOL-1400. Students who started in New Media Interactive Development in fall 2015 and later are required to take this course. Ideally, a student will take this course in their second year. Students can enroll in the class through SIS or Tiger Center. This class covers the mandatory co-op orientation normally held for IGM students.

**NMDE-111  New Media Design Digital Survey** (3 credits): This course repackages material from 2009-221. If you’ve completed 2009-221, do not take this course.

This project-based course is an investigation of the computer as an illustrative, imaging, and graphical generation tool. It develops foundational design skills in raster and vector image creation, editing, compositing, layout, and visual design for online production. Emphasis will be on the application of visual design organization methods and principles for electronic media. Students will create and edit images, layouts and typography to form effective design solutions for online delivery. (None)

**NMDE-112  New Media Design Digital Survey II** (3 credits): This course repackages material from 2009-213. If you’ve completed 2009-213, do not take this course.

Through formal studies and perceptual understanding, including aesthetics, graphic form, structure, concept development, visual organization methods and interaction principles, students will design graphical solutions to communication problems for static and interactive projects. Students will focus on creating appropriate and usable design systems through the successful application of design theory and best practices. Assignments exploring aspects of graphic imagery, typography, usability and production for multiple digital devices and formats will be included. (None)

**IGME-101  New Media Interactive Design and Algorithmic Problem Solving I** (4 credits): This course, along with IGME-102, are the semester equivalents of 4080-229, 230, and 231 (the New Media programming sequence). If you have completed both 4080-229 and 230, do not enroll in IGME-101 (you’ll take IGME 102 instead).

This course provides students with an introduction to problem solving, abstraction, and algorithmic thinking that is relevant across the field of new media. Students are introduced to object-oriented design methodologies through the creation of event-driven, media-intensive applications. Students will explore the development of software through the use of a range of algorithmic concepts related to the creation of applications by writing classes that employ the fundamental structures of computing, such as conditionals, loops, variables, data types, functions, and parameters. There is an early emphasis on object oriented concepts and design. (None)

**IGME-102  New Media Interactive Design and Algorithmic Problem Solving II** (4 credits): This course, along with IGME-101 are the semester equivalents of 4080-229, 230, and 231 (the New Media programming sequence). If you have completed both 4080-229 and 230 **but not 231**, enroll in IGME 102.

This course provides students a continued introduction to problem solving, abstraction, and algorithmic thinking that is relevant across the field of new media. As the second course in programming for New Media students, this course continues an object-oriented approach to programming for creative practice. Topics will include reusability, data structures, rich media types, event-driven programming, loaders, XML, object design and inheritance. Emphasis is placed on the development of problem-solving skills as students
develop moderately complex applications. (C- or better in IGME-101 New Media Interactive Design and Algorithmic Problem Solving I [4080-230])

**IGME-110 Introduction to Interactive Media** (3 credits): This course is the semester “equivalent” of 4080-295, so **if you’ve completed 4080-295, don’t enroll in IGME-110.**

This course provides an overview of media in historical, current and future contexts. Incorporating lectures and discussion with hands on work involving written and interactive media assets, students examine the role of written and visual media from theoretical as well as practical perspectives. The course also provides an introduction to interactive media development techniques, including digital media components and delivery environments. Students will be required to write formal analysis and critique papers along with digital modes of writing including collaborative editing and effective presentation design. (None)

**IGME-201 New Media Interactive Design and Algorithmic Problem Solving III** (3 credits): This course is the semester “equivalent” of 4080-333 Programming III for New Media. **If you have completed 4080-333, you should not enroll in IGME 201.**

This is the third course in the software development sequence for New Media Interactive Development students. Students further their exploration of problem solving and abstraction through coverage of topics such as GUI development, events, file I/O, networking, threading, and other advanced topics related to the design and development of modern dynamic applications. Programming assignments are an integral part of the course. (C- or better in IGME-102 New Media Interactive Design and Algorithmic Problem Solving II [4080-231])

**IGME-202 Interactive Media Development** (3 credits): This course repackages material from 4080-330 and 4080-434 (Interactive Digital Media and Programming for Digital Media). If you have not taken 4080-334 Programming IV for New Media, you can take IGME 202 in its place. **If you have completed 4080-334, you may take IGME 202 as an Advanced Elective.**

In this course, students will learn to create visually rich interactive experiences. It is a course in programming graphics and media, but it is also a course on the relationship between ideas and code. Students will explore topics in math and physics by building programs that simulate and visualize processes in the natural world. Assignments will include major programming projects, such as building a virtual world inhabited by digital creatures that display observable behaviors. (C- or better in IGME-201 New Media Interactive Design and Algorithmic Problem Solving III [4080-333] or IGME-106 Game Development and Algorithmic Problem Solving II [4080-223]) & MATH-185 Math of Graphical Simulation I)

**IGME-230 Website Design & Implementation** (3 credits): this course is the semester “equivalent” of 4080-309 (Introduction to Web Development), but it will include server-side programming, which is “new” material. If you have completed 4080-309, do not enroll in IGME-230.

This course provides an introduction to web development tools and technologies, such as X/HTML, CSS, Javascript and DHTML, AJAX, web platforms and environments, and server-side programming methods. (IGME-102 New Media Interactive Design and Algorithmic Problem Solving II [4080-231] or IGME-106 Game Development and Algorithmic Problem Solving II [4080-223], and IGME-110 Introduction to Interactive Media [4080-295])

**IGME-236 Interaction, Immersion, & the Media Interface** (3 credits): This is a new course that replaces 4002-425 Human Computer Interaction I, which was offered by the Department of Information Sciences and Technology. It also replaces 4080-323 Design of the Graphical User Interface in the New Media program. **If you have completed 4002-425 or 4080-323, you should not enroll in IGME 236.**
This course examines the concepts of interface and interaction models in a media-specific context, with particular emphasis on the concept of the immersive interface. This course explores concepts such as perception, expectation, Gestalt Theory, interactivity, Semiotics, presence, and immersion in the context of media application development and deployment. In addition, underlying concepts of cognitive psychology and cognitive science will be integrated where appropriate. These theories are then integrated in the exploration of the immersive interface, and with related concepts such as user-level-interface modification, augmentation of identity, and the interface as a social catalyst. (IGME-102 New Media Interactive Design and Algorithmic Problem Solving II [4080-231] or IGME-106 Game Development and Algorithmic Problem Solving II [4080-223], and IGME-110 Introduction to Interactive Media [4080-295])

IGME-330  Rich Media Web Application Development I (3 credits): This is a new course that presents material from 4080-431 Introduction to Web Technologies and 4080-432 New Media Web Technologies II. If you have completed 4080-432, you should not enroll in IGME-330. If you have not completed 4080-432, you may take IGME-330 as an Advanced Elective. If you are a first year student who entered in Fall 2012 (2121) or later, IGME-330 is required for your degree program. 

This course provides students the opportunity to explore the design and development of Media Rich Internet Applications (MRIAs). This course moves beyond client and server side web development, and explores issues of presentation, interactivity, persistence, and extensibility common among such applications. Specifically, items explored include framework characteristics, data management, persistence, data binding, information manipulation, as well as data presentation. (IGME-202 Interactive Media Development [4080-330] & IGME-230 Website Design & Implementation [4080-309])

IGME-588  New Media Team Project (3 credits): This course is the semester replacement for 4080-560 & 565, New Media Team Project I & II. This course should be taken immediately after NMDE-401 New Media Design Career Skills in the last full year of the NMID program. This course is ONLY offered in spring semester. If you have completed 4080-560 & 565, do not enroll in IGME-588.

This course is designed to engage the New Media major in a capstone production experience. The instructor will form interdisciplinary student teams that will design, plan, prototype, and implement new media projects. Student groups are required to test their product with users and provide written feedback and analysis. (Fourth-year standing)

6  New Media Interactive Development Advanced Elective Courses.

6.1  Policies

These courses are advanced elective options for all NMID majors. Like your core courses, some of these courses are new courses, and others are “semester versions” of previous offerings. Some of the new Advanced Electives are stable, semester versions of courses that were offered as seminars under quarters. So, we have noted situations where you should not take a course if you took a specific seminar under quarters.

IGM EXPECTS that in SEMESTERS at least 50% of your Advanced Electives come from IGM. The courses that are currently on the schedule for the current semester are noted below, but we expect that the list of available courses from IGM will continue to grow.

If you would like to take a non-IGM course and have it count as an Advanced Elective, please note the following:

- At least 50% of your Advanced Electives must come from IGM.
For a course outside of IGM to be considered an Advanced Elective, it should come from the College of Computing and Information Sciences (GCCIS) and/or the College of Imaging Arts and Sciences (CIAS).

The course must be a 200-400 level course (CIAS) or a 300-400 level course (GCCIS) and have at least one pre-requisite requirement(s) to take the course.

You will also need permission to take a non-IGM course and have it count as an Advanced Elective. IGM permission is required. You should contact your Academic Advisor if this is an option that you would like to pursue. If the course cannot be counted as an Advanced Elective, it may be possible to have it count as a General Education or Free Elective; again, this is something that your Academic Advisor can assist you with.

Please note that you may not “repeat” a semester version of a course and expect it to count towards your Advanced or Free Electives. Aside from the IGM Production Studio and Research Studio courses, the only time/reason that you may re-take a course and expect it to “count” is to replace a grade and/or meet the semester course pre-requisites.

Advanced Elective courses are listed in numeric order. Any prerequisites for a course are listed in parentheses.

### 6.2 Descriptions

**IGME-119 2D Animation & Asset Production** (3 credits): This course combines material from 4080-346 and 347. If you have completed 4080-346, you should not enroll in IGME-119. If you have completed 4080-347, **but not 346**, enroll in IGME-119.

This course provides a theoretical framework covering the principles of animation and its use in game design to affect user experience. Emphasis will be placed upon principles that support character development and animations that show cause and effect. Students will apply these principles to create animations that reflect movement and character appropriate for different uses and environments. (IGME-110 Introduction to Interactive Media [4080-295])

**IGME-219 3D Animation & Asset Production** (3 credits): This course is the semester “equivalent” of 4080-347 3D Animation. If you have completed 4080-347, you should not enroll in IGME-219. If you have completed 4080-346 but not 347, enroll in IGME-219.

This course provides an overview of 3D game asset production. Basic ideas learned within the first asset production course are also revisited within the 3D environs. Topics covered include modeling, texturing, skinning and animation. Emphasis is put on low polygon modeling techniques, best practices in game art production, and effective communication strategies between artists, programmers, and designers. (IGME-119 2D Animation & Asset Production [4080-346])

**IGME-220 Game Design & Development I** (3 credits): this course is the semester “equivalent” of 4080-380 Game Design and Development Fundamentals I. If you have completed 4080-380, do not enroll in IGME 220.

This course examines the core process of game design, from ideation and structured brainstorming in an entertainment technology context through the examination of industry standard processes and techniques for documenting and managing the design process. This course specifically examines techniques for assessing and quantifying the validity of a given design, for managing innovation and creativity in a game development-specific context, and for world and character design. Specific emphasis is placed on both the
examination and deconstruction of historical successes and failures, along with presentation of ethical and cultural issues related to the design and development of interactive software and the role of individuals in a team-oriented design methodology. Students in this class are expected to actively participate and engage in the culture of design and critique as it relates to the field. (IGME-202 Interactive Media Development [4080-330])

***A note about IGME 317 3D Asset Pipeline for Videogames*** This course is for students in the College of Imaging Arts and Sciences (CIAS) degree programs, only.

**IGME-320 Game Design & Development II** (3 credits): This course is the semester “equivalent” of 4080-381 (Game Design and Development Fundamentals II). If you have completed 4080-380, but not 381, enroll in IGME-320.

This course continues to examine the core theories of game design as they relate to the professional field. Beginning with a formalized pitch process, this course examines the design and development paradigm from storyboarding and pre-visualization through rapid iteration, refinement, and structured prototyping exercises to further examine the validity of a given design. Specific emphasis is placed on iterative prototyping models, and on methodologies for both informal and formal critique. This course also explores production techniques and lifecycle in the professional industry. (IGME 202 Interactive Media Development [4080-330] and IGME-220 Game Design & Development I [4080-380])

**IGME-340 Multi-Platform Media Application Development** This course is the semester “equivalent” of IGME 590: Multi-Platform Media Application Development. If you have completed IGME 590: Multi-Platform Media Application Development, DO NOT enroll in IGME-340.

Interactive media applications are no longer restricted to personal computers. They can now be found on many distinct hardware platforms including mobile, tablet, wearable, and large-screened computing devices. In this course, students will learn to design, prototype and develop media rich interactive experiences that can be deployed to a wide variety of hardware devices. Programming projects are required. (IGME 106 Game Development and Algorithmic Problem Solving II or IGME 201 Interactive Design and Algorithmic Problem Solving III or equivalent)

**IGME-420 Level Design** (3 Credits) This course is the semester “equivalent” of IGME 590: Level Design. If you have completed IGME 590: Level Design, DO NOT enroll in IGME 420.

This course introduces level design theory and best practice through game level analysis, evaluation, and creation. Students will learn by analyzing game levels from existing games and discussing what made those levels successful or unsuccessful. Through their analysis and hands on experience, students will gain an understanding of overall level design including layout, flow, pacing, and balance. They will enhance their understanding of level design principles by creating their own game levels. (IGME-219 2D Animation and Asset Production [4080-347] and IGME-220 Game Design & Development I [4080-380]).

**IGME-421 Tabletop Game Design and Development** (3 credits): This course is the semester “equivalent” of IGME 590: Modern Board Game Design. If you have completed IGME 590: Modern Board Game Design, DO NOT enroll in IGME 420.

This course explores issues pertaining to design, mechanics, development, and production of analog, tabletop “hobby” games, which include board games, card games, wargames, and other non-digital games catering to multiple players. Students will analyze and apply concepts and mechanics of modern tabletop game design, and build and test tabletop games. Students will work with development and prototyping tools, explore component design and art direction, and work with desktop publishing technologies. In addition, they will work directly with board game publishing and manufacturing technologies and services,
and study factors pertaining to the business of tabletop games. (IGME 220 Game Design and Development I [4080-380] of equivalent course).

**IGME-430 Rich Media Web Application Development II** (3 credits): this is a new course.

This course provides students the opportunity to continue the exploration of Media Rich Internet Applications (MRIs). Topics include communications for media ecologies, distributed web application frameworks, advanced interactivity, data transformation, representation, automation, persistence, and large scale systems deployment. In addition, students are exposed to concepts and technologies related to the next generation of MRI development. (IGME-330 Rich Media Web Application Development I [4080-431 & 432])

*Additional course notes about IGME-430 Rich Media Web Application Development II*

A primarily Javascript/Node.js server and client course for building rich media web apps (desktop and/or mobile). The class will focus a lot on web servers. We'll be looking at login systems, the MVC (Model View controller) design pattern, the MVVM (Model-View View-Model) design pattern, noSQL databases, memory caching, API design, client-side web frameworks, server configuration & deployment, event-based servers vs threaded servers, dynamic pages & templating, unit testing & more. Though the class is rich web app focused, but the concepts apply to many other software projects across mobile, desktop and consoles.

**IGME-450 Casual Game Development** (3 credits): This is a new course.

This course explores the design and construction of casual game experiences. Topics include modes of casual game play, mechanics for casual games, characteristics of successful games, development processes, and the distribution of casual games. Students will create casual games, and employ technologies to address issues of scalability, presentation, social interconnectivity, and game analytics. (IGME 202 Interactive Media Development [4080-330])

**IGME-470 Physical Computing and Alternative Interfaces** (3 credits): This is a new course.

The rich variety and widespread adoption of gestural touch screens, motion-sensing devices, weight-reactive surfaces, wearable digital devices, and similar interface products demonstrates the demand for well-integrated devices and services that seamlessly couple people and environments. Such products can interface computers with real-world inputs and outputs, and give people new ways of controlling and experiencing their devices and information. This course provides a rapid technical introduction to basic electronics (components, circuits, microcontrollers, etc.) and emphasizes the application of interface design concepts to physically interactive and innovative product development. The course requires solo and team projects that blend electronics, programming, and design. (Third-year standing and IGME-102 New Media Interactive Design and Algorithmic Problem Solving II [4080-231] or IGME-106 Game Development and Algorithmic Problem Solving II [4080-222]).

**IGME-571 Interactive Game Audio** (3 credits): this is the semester equivalent of 4080-535 Interactive Game Audio. If you have completed 4080-535, do not enroll in IGME-571.

This course provides students with exposure to the design, creation and production of audio in interactive applications and computer games. Students will become familiar with the use of sound libraries, recording sounds in the studio and in the field, generating sound with synthesizers, and effects processing. Students will create sound designs for interactive media, integrating music, dialog, ambient sound, sound effects and interface sounds within interactive programs (IGME-202 Interactive Media Development [4080-330])
IGME-582 Humanitarian Free & Open Source Software Development (3 credits): This is the semester equivalent of 4080-445 Humanitarian Free and Open Source Software Development. It may count for an IGM Advanced Elective, a General Education Elective, or a Free Elective (this is not a change). If you have completed 4080-445, you should not enroll in this course.

This course provides students with exposure to the design, creation and production of Open Source Software projects. Students will be introduced to the historic intersections of technology and intellectual property rights and will become familiar with Open Source development processes, tools and practices. They will become contributing members of humanitarian software development communities such as the One Laptop Per Child and Sugar communities. Students will actively document their efforts on Humanitarian Free and Open Source Software community hubs. (Third-Year Standing)

IGME-585 Project in FOSS Development (3 credits). This is a new course.

Free and Open Source Software development is an internationally growing methodology for distributing work across multiple developers. The process can be applied to small “garage-sized” teams (small utility packages, multimedia plugins, simple games) or teams of hundreds (Mozilla, Java, Linux). This course builds on the introductory experience provided in the prerequisite to provide hands-on open-source development experience in a large-scale, project that will be prepared for open-source distribution. The actual projects and domains addressed will vary offering to offering, but will be along the lines of those listed above. (IGME 582 Humanitarian Free & Open Source Software Development [4080-445]).

IGME 589-01 Research Studio (3 credits). This is a new course.
Course description coming soon.

IGME 589-02 Research Studio (3 credits). This is a new course.
Course description coming soon.

IGME 589-03 Research Studio in Medical Anatomy App Development with Virtual Reality (3 credits). This is a new course.

This research studio will be a collaboration between IGM and a class in the RIT Medical Illustration department. Both classes will meet at the same time in the same lab, and work together on the same project. Students will develop a tool for medical professionals to study anatomy realtime using virtual reality. Users will be able to view animations and pose the model, to virtually dissect the model to see muscles, veins, bones, etc., and to rotate the model and interact with it realtime – all while in a virtual reality environment. Medical Illustration students will be focusing on the assets, including high poly sculpting, normal maps, rigging, and blendshapes. IGM students will be focusing on programming and design tasks using Unity 3D, such as visualization and simulation development, user interface design, asset integration and VR implementation. Both classes will be focused on optimization, agile software development, the asset pipeline, and game development best practices.

IGME 590-01 Data-Oriented Game Development (3 credits). This is a new course.

This course emphasizes sustainable software implementation in terms of both efficiency and power usage for game developers. The purpose of all programs, and all parts of those programs, is to transform data from one form into another. Some ways of designing software are more efficient in terms of both speed and power usage. As games challenge the limits of modern hardware and new designs force higher frame rates (e.g. VR and 90 fps), data-oriented design has become more important. A deep dive into the data-oriented design paradigm will be emphasized in terms of how hardware, compilers, algorithms, and the data layout
of programs can be improved both in terms of speed as well as power usage. Software projects are required. (Students should have completed IGME-309 Data Structures & Algorithms for Games & Simulations II [4080-487]).

**IGME-590-03 Undergraduate Seminar** (3 credits).

Course description coming soon.

**IGME 590-04 German Game Industry** (3 credits).

This course will immerse students in the German games industry via an immersive study-abroad experience. The course will hold several meetings on campus before departure, but the bulk of the course will center on a two-plus-week intensive experience in Germany. RIT students will attended lectures at the University of Paderborn with German students, participate in a game jam there over several days, and tour the Nixdorf Museum, the largest museum of computing in the world. Students will then spend the rest of the course visiting German game studios in Hamburg, Dusseldorf, and Cologne. International travel is required. Applications were due during fall semester and accepted students will be notified by Professor Stephen Jacobs. Accepted students will be added to this course by the IGM Department. (IGME-320 Game Design and Development I [4080-381] or IGME-330 Rich Media Web Application Development I [4080-432] or permission of instructor).

**IGME-590-05 Modding Games** (3 credits). This is a new course.

This course introduces video game design theory and implementation through modding. Modding is taking an existing game, developed by a AAA studio and examining how it is created by delving into the code and assets that make up the game. Then students will modify the codes and assets to create new content like levels, quests, creatures, NPCs, in game objects and many other things. Through their analysis and hands on experience, students will gain an understanding of how a professional game companies build the experience for the player. They will enhance their understanding of design and development principles by creating content that functions seamlessly within that experience. (Third-year standing and IGME-219 3D Animation and Asset Production [4080-347] and IGME-220 Game Design & Development I [4080-381]).

### 7 IGM Undergraduate Advanced Elective Project Classes

IGM offers a variety of project-based classes (e.g., Production Studio, Research Studio, and others) in addition to regular courses and seminars that often have term projects. The table below summarizes common project courses. Note that project courses provide an excellent opportunity for developing your portfolio and improving in your skills in a variety of areas. By planning ahead and obtaining instructor approval, students could connect/extend project work through many classes, which would potentially add significant polish.

<table>
<thead>
<tr>
<th>Class</th>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IGME-499</td>
<td>Undergraduate Co-op</td>
<td>If you are on co-op, you must not double-count that work for course credit. RIT requires this distinction when working on a project: pay or credit but not both. For example, if you are working with a professor on a co-op, and that project that has some components happening in Production Studio, you must not enroll in that class.</td>
</tr>
<tr>
<td>IGME-580</td>
<td>Production Studio</td>
<td>Student teams pitch projects to the instructor. Upon approval, students step through the production process to complete their project. This course is flexible and provides an ideal opportunity to develop your expertise, skills, and professional project portfolio. See Research Studio (IGME-589) for professor-generated projects. See also the FAQ below.</td>
</tr>
</tbody>
</table>
“I&I” fosters teamwork for new ideas, not pre-existing projects, across the campus. Although you can use Production Studio to explore new development, you may want to consider I&I.

This course is similar to other IGM project courses. However, students focus on the FOSS movement and particular software development practices.

NMID students take this course in their senior year. GDD students are sometimes invited to join the team. This course provides an excellent opportunity to collaborate with New Media Design majors in the design and development of a large-scale project.

The students work as domain specialists on teams completing one or more faculty research projects during the semester. The faculty member teaching the class will provide the research topic(s). (In IGME-580, the students generate the project ideas.) Students will learn about research methodology to implement, test, and evaluate results of projects. Students will complete research reports and final assessments of themselves and their teammates in addition to completing their assigned responsibilities on the main projects. See also the FAQ below.

Use this course to pursue something more research-oriented, especially for concepts not explored in-depth in any undergraduate RIT course. You need to contact a professor with a proposal. See also the FAQ below.

7.1 Course Listings

Enrollment guides, which are posted along with this document
https://sis.rit.edu – click on “SIS Course Catalog Search”
https://www.rit.edu/upub/pdfs/Undergrad_Course_Descriptions.pdf

7.2 Production/Research Studio FAQ

Enrollment Requirement
This course is restricted to students in NWMEDID-BS or GAMEDES-BS with at least 3rd year standing. If you have team members working on your project from outside IGM, please have them fill out the form at “I’m a non-IGM major…” from https://www.rit.edu/gccis/igm/advising-faq.

How many times can I take Production/Research Studio?
You can take it as many times as you want as an undergraduate student.

How many studios will count toward Advanced Electives?
Students can take any combination of 2 Production and/or Research Studios to count towards their advanced electives (ex: 2 Production Studios, 2 Research Studios, 1 Research Studio and 1 Production Studio). A student may choose to take additional Production and/or Research Studios, but these would count towards their Free Electives.

What projects can I work on?
In IGME-580 Production Studio, students pitch the projects.
In IGME-589 Research Studio, instructors pitch the projects.

7.3 Independent Study FAQ

This course seems a lot like Production/Research Studio.
You are correct! In most cases, students should take one of the “studios.” However, when you have a topic you’d like to research or a skill you’d like to develop, an independent study (IS) is a good
option. For example, a NMID student might want to study wearable computing, or a GDD student might want to explore networking in more detail. The main restriction is that there is no comparable IGM class.

**How do I find/generate an Independent Study?**

Unless a faculty member specifically advertises an IS, the work is up to you to find a faculty member, pitch the idea, and develop the proposal. Planning ahead by taking classes, visiting office hours, reading Insights, and talking with your faculty and academic advisors will help.

**Is there a form?**

You can obtain the form from a faculty member or your advisor.

**Who fills out the form?**

Both you and the faculty sponsor. Once your sponsor has obtained the form, please collaborate to fill in the required information. The form has additional instructions. Once complete, the faculty sponsor or the student will bring the completed application to the IGM office for approval from our Undergraduate Coordinator.

**Can I do an IS from outside of IGM?**

Yes, but you must check with your academic advisor in advance to determine if the course will count as an advanced elective (assuming you want it to).

### 8 Who to Contact?

Please refer to https://www.rit.edu/gccis/igm/undergraduate-advising. If you have any questions regarding what you read in this enrollment guide, your IAP, or for any other reason, please contact your Academic Advisor ASAP.

New Media Interactive Development advisor: Jeff Spain (jhsics@rit.edu)

Walk-In Advising Hours: Monday, Tuesday and Wednesday, 2:00-4:00 PM; Thursday and Friday, 10:00 AM-12:00 PM

To schedule an appointment with your advisor:

https://sis.rit.edu/info/welcome.do

https://mycourses.rit.edu/index.asp

Steps to Scheduling an Appointment:

1. Log in to SIS or myCourses
2. Click “My Success Network”
3. Click on the link under your primary advisor’s name
4. Click “Schedule Appointment”