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<td>Digital Cinema</td>
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<td>Interactive Media (Joint with SoC)</td>
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<th>Special Programs</th>
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<td>Professional Development</td>
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<th>Courses</th>
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<td>Courses</td>
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General Information

Catalog Version

Undergraduate Update: April 15, 2010

Please use the menu items to the left for current catalog navigation. Access archived catalogs by choosing the link to the right.

Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please consult your major field grid for your requirements.
About the College

DePaul’s College of Computing and Digital Media (CDM) is organized into two schools: the School of Computing (SoC) and the School of Cinema and Interactive Media (CIM) featuring 16 degree programs designed to keep pace with the latest developments in technology while remaining grounded in the liberal arts and sciences. As one of the largest IT programs in the nation, DePaul CDM has a reputation for offering an extraordinary selection of degree programs and courses from traditional computer science, information systems, and network technologies to game development, digital cinema, and our newest undergraduate program in animation. At CDM, students will experience a dynamic interdisciplinary curriculum and the opportunity to explore their academic curiosity through 18 minor concentrations that reflect the diverse offerings of CDM's majors.

Administration

DAVID MILLER, Ph.D.
Dean

LUCIA DETTORI, Ph.D.
Associate Dean

MARTIN KALIN, Ph.D.
Associate Dean

LIZ FRIEDMAN, Ph.D.
Assistant Dean of Student Services

MARGIE MARTYN, Ph.D., CCNA
Assistant Dean of Academic Administration

Student Services

Assistant Dean of Student Services

LIZ FRIEDMAN, PH.D.

Advising Staff

JOHN GLATZ
Director of Advising
DePaul University maintains an extensive technological infrastructure which is available for students, faculty and staff. In addition, many schools and departments maintain their own resources dedicated for use by their own constituents.

The College of CDM itself operates specialized laboratories in the following:

- Requirements Engineering Lab
- Mobile Commerce Lab
- Solid Objects and Graphics Lab
- Animation Lab
- Network Security Lab
- Game Development Lab
- Console Gaming Lab
- Digital Cinema Advanced Editing Lab
- High Definition Editing Suite
- Medical Informatics Lab
- Digital Cinema Studio
- Usability Testing Lab
- Intelligent Multimedia Processing Lab
- Supercomputing Cluster Lab
- Software Research Lab
- Multimedia Networking Lab
- Centre for Web Intelligence
- E-Commerce Technology Lab

More information on Labs and Resources at CDM.

Admission

First Year Student Applicants

Deadlines And Requirements

1. We recommend you apply by November 15th for Early Action Program admission. The
We recommend you apply by November 15th for Early Action Program admission. The regular submission deadline for all materials is February 1st. Applications are considered on a space available basis until August 15th by rolling notification.

2. Either the SAT or ACT is required. If your ACT or SAT scores do not appear directly on your high school transcript, request the testing agency to forward a score report to DePaul, if you have not already done so. Our college code number for ACT is 1012 and for SAT is 1165.

3. If you have earned college credit while in high school, request the college or Advanced Placement service which granted you credit to forward your official record to DePaul.

4. Send all materials to:

   Office of Admission
   1 E. Jackson Blvd.
   Chicago, IL 60604

NOTE: If you have ever enrolled in another college or university (regardless if you earned any credit) after high school graduation, please fill out the Transfer Student application.

Transfer Student Applicants

Transfer students (under age 24) who currently attend another college/university and plan to complete a baccalaureate degree at DePaul should complete and submit this application, the $40 application fee ($25 if you apply online) and official transcripts from every college/university attended. Students who have earned fewer than 30 semester (44 quarter) hours of transferable college work at the time of application submission must additionally provide an official high school transcript and an ACT/SAT score report. If you are currently in college, please indicate (on a separate sheet of paper) what courses you will be enrolled in for the current term or for a future term. (Example: Eng 101/English Composition I - 3 semester hours.)

Note: Students educated outside the United States or with international credit, and students with F1 or J1 visa status should apply for admission a minimum of two months before the beginning of the desired quarter using the application for international student admission.

Academic Advisement

The College believes that academic advising is necessary for the vitality and success of the student’s undergraduate education. Students are assigned a faculty advisor upon admission to the school. All students are encouraged to meet with their faculty advisor at least once each year for assistance in planning a course of study that best reflects their academic and career interests, skills, and lifestyle.

Professional Development

The College of Computing and Digital Media established the Institute for Professional Development in 1985 to offer certificate programs designed to meet the needs of both individuals and businesses in the Chicagoland area. These non-degree offerings provide intensive training in a wide variety of areas, with each standalone certificate program
addressing a different set of theoretical concepts and practical skills. Emphasis is placed on gaining practical experience through a combination of lectures and demonstrations complemented by laboratory exercises and homework assignments. Certificate programs are typically taught by a team of instructors, that includes both full-time faculty and part-time instructors from industry. The programs require a substantial commitment of time, as most meet two nights per week and in the morning on approximately half of the Saturdays during the program.

For application and registration information pertaining to the certificate programs offered by the Institute for Professional Development, please call the Institute office at (312) 362-6282.

Current certificate program offerings include:

**IPD 356 Web Development with Ajax Technologies Program**
A 7-week program covering Web development with Ajax technologies

**IPD 357 Wireless LAN Security Program**
An 8-week program covering the latest solutions in wireless LAN security

**IPD 358 SharePoint Developer Program**
A 10-week comprehensive program covering Microsoft SharePoint development

**IPD 359 Web Development with Python Program**
A 5-week program covering Web development with the Python programming language.

**IPD 360/460 SQL Server Business Intelligence Program**
An 11-week in-depth program covering SQL Server analysis services, integration services, and reporting services

**IPD 363 SQL Server Database Administration Program**
An 11-week in-depth program covering database administration using SQL Server

**IPD 364 Lightweight Java Web Development Program**
An 8-week comprehensive program covering open-source, lightweight Java enterprise Web development using POJOs (Plain Old Java Objects)

**IPD 365 Ruby on Rails Program**
A 8-week in-depth program covering Web development using Ruby on Rails

**IPD 366 Java Web Services Program**
A 7-week concentrated program covering service-oriented architecture and the development of Web services using Java

**IPD 370 Advanced SQL Program**
A 2-week program covering advanced Structured Query Language (SQL) features

**IPD 380 IT Project Management Program**
A 10-week comprehensive program covering best practices in IT project management

**IPD 382 Java Developer Program**
A 10-week comprehensive program covering object-oriented applications development using Java

**IPD 389 .NET Developer Program**
A 10-week comprehensive program covering .NET technologies
Prospective students may transfer credit from an accredited college to DePaul University. All transfer credit will be initially evaluated by an Admission counselor; final course placement will be made by an academic advisor in the College of Computing and Digital Media (CDM). For specific information governing transfer admission and evaluation of credit, please consult the DePaul University Undergraduate Transfer webpage. Current CDM students may take courses at another accredited college either in the summer or during the regular school year and transfer the credit back to DePaul University only with prior approval from the students academic advisor.

Grades and Credit Hours Requirements

Grades

Students must earn grades of C or above in all courses taken for credit in the major field. Grades of C- may be accepted for major field credit provided the overall grade point average within the major is 2.0 or above. All other courses require grades of D or better.

Credit Hours

All students must complete a minimum of 192 quarter hours of college credit.

Minors

A minor is a combination of courses that provides a cohesive introduction to an area of study. Typically, courses taken to satisfy minor field requirements are credited as open electives; however, there are some instances where minor field courses may be used for credit in other areas of the students curriculum. Grades for all courses, taken to fulfill a minor field requirement must be C or above. Grades of C- may be accepted for credit in the minor provided the minor GPA is 2.0 or above. A minimum of one-half of the courses required for a minor must be completed at DePaul University.

MINORS IN THE COLLEGE OF COMMERCE

Students enrolled in the College of Computing and Digital Media (CDM) may obtain a minor in Accounting, Business Administration, E-Business, Economics, Management, MIS, Marketing, and Pre-MBA. Please see the College of Commerce Section for Minor Requirements.

MINORS IN THE COLLEGE OF LIBERAL ARTS AND SCIENCES

Students enrolled in the College of Computing and Digital Media (CDM) may obtain a minor through the College of Liberal Arts and Sciences. Most Liberal Arts and Science departments offer minor concentrations of study. In general, a minor in a Liberal Arts and Sciences discipline consists of a set of introductory courses plus another set of more specialized courses. Most minors require six courses, some of which may also be used for credit in the Liberal Studies Program. For a complete list of minors offered through the College of Liberal Arts and Sciences, please consult that section of this online Bulletin.

MINORS IN THE COLLEGE OF COMPUTING AND DIGITAL MEDIA

Computer technology is an omnipresent part of our world, used in academic disciplines from physics to history to geography. CDM offers several minors that will appeal to all DePaul
University students.

Political science and geography majors can pursue a minor in Data Analysis, Databases, or Data Visualization, which is important to understanding how to analyze census or GPS data.

Communications majors may be interested in Digital Cinema which will give you skills in creating videos for advertising.

Art majors interested in a career in graphics programming, animation or design may be interested in CDM's tech-focused minors in Animation or Computer Graphics Software Development.

An academic foundation in E-Commerce Technology, Networks or Information Systems can give Commerce students an edge in a tough job market.

There are other examples too numerous to mention. So if you have questions or want advice on what minor is best for you, can email our CDM Undergraduate Services team: gocdm@cdm.depaul.edu or call them at: 312-362-8714.

Policies for Academic Minors
Students must:

1. earn at least a grade of C- in each minor course and a GPA of no less than 2.0 for all courses in the minor;
2. earn at least a cumulative GPA of 2.0 for all courses applied to the minor;
3. not select the pass/fail option for courses in the minor
4. meet the following residency requirement: no more than 50% of the requirements of a minor may be fulfilled by transfer credits, AP credit, IB credit of CLEP credit.

Finally, students cannot earn a minor in their major program. Courses required to fulfill a minor are determined by the unit in which the minor resides.

CDM Minors for CDM Students
To obtain a minor in CDM when the major is also in CDM:

1. Satisfy all requirements for the major
2. Satisfy all requirements for the minor
3. Students must take at least 6 courses in the minor area that do not count towards their CDM major

Note: If you have already taken some of the courses listed under your minor on this page, work with your advisor to choose other courses within the same program area, ie. NT minor would look under NT major courses and Computer Graphics Software Development would look under Computer Graphics Courses, in order to have 6 distinct courses.

- Animation Minor
- Computer Graphics Software Development
- Computer Science
- Data Analysis and Data Mining
- Database
- Data Visualization Development
- Digital Cinema
- E-Commerce Technology
- Game Design
- Game Programming
- Interactive Media
- Information and Computing in the Modern World
- Information Systems
- Information Technology
- Network Technologies
- Screenwriting
- Security
CDM Minor Requirements

Animation Minor

ANI 101 Animation for Non-Majors
or ANI 201 (not both) Animation I
ANI 230 3D Design & Modeling
ANI 231 3D Animation
ANI 206 History of Animation

3 courses from the following list: (at least 1 must be ANI)
DC 201 Introduction to Screenwriting
DC 210 Digital Cinema Production I
DC 220 Editing I
Any ANI course

Computer Graphics Software Development Minor

Liberal Studies
GPH 211 Perceptual Principles for Digital Environments I
GPH 212 Perceptual Principles for Digital Environments II

Course Requirements
CSC 261 Programming Languages I: C/C++
CSC 262 Programming Languages II: C/C++
CSC 393 Data Structures in C++
GPH 329 Computer Graphics Development II
GPH 339 Advanced Rendering Techniques
GPH 372 Principles of Computer Animation

Computer Science Minor

CSC 241 Introduction to Computer Science I
and CSC 242 Introduction to Computer Science II
and CSC 224 Java for Programmers
or
CSC 211 Programming in Java I
and CSC 212 Programming in Java II
and CSC 309 Object-Oriented Programming in C++
or
CSC 261 Programming Languages I: C/C++
and CSC 262 Programming Languages II: C/C++
and CSC 224 Java for Programmers
CSC 393 Data Structures in C++
or CSC 383 Data Structures and Algorithms in Java
MAT 140 Discrete Mathematics I
CSC 373  Computer Systems I
CSC 374  Computer Systems II

Data Analysis and Data Mining Minor

IT 240  Introduction to Desktop Databases
IT 223  Data Analysis
CSC 324  Data Analysis and Statistical Software II
CSC 367  Introduction to Data Mining
CSC 334  Advanced Data Analysis
2 CDM Electives

Database Minor

CSC 211  Programming in Java I
and CSC 212  Programming in Java II
IT 223  Data Analysis
IT 240  Introduction to Desktop Databases
CSC 352  Database Programming
CSC 367  Introduction to Data Mining
1 CDM Elective

Data Visualization Development Minor

Liberal Studies
GPH 211  Perceptual Principles for Digital Environments I
GPH 212  Perceptual Principles for Digital Environments II

Course Requirements
CSC 261  Programming Languages I: C/C++
CSC 262  Programming Languages II: C/C++
CSC 323  Data Analysis
CSC 393  Data Structures in C++
GPH 329  Computer Graphics Development II
GPH 372  Principles of Computer Animation
GPH 380  Visualization

Digital Cinema Minor

DC 205  Foundations of Cinema
DC 225  Digital Still Photography
DC 201  Introduction to Screenwriting
DC 220  Editing I
3 courses from the following list:
ANI 101  Animation for Non-Majors
DC 210  Digital Cinema Production I
DC 270  Topics in Digital Cinema
GAM 224  Introduction to Game Design
DC 215  Digital Sound Design
DC 275  Cinematography
DC 310  Digital Cinema Production II
DC 320  Editing II
### E-Commerce Technology Minor

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>IT 130</td>
<td>The Internet and the Web</td>
</tr>
<tr>
<td>CSC 211</td>
<td>Programming in Java I</td>
</tr>
<tr>
<td>CSC 212</td>
<td>Programming in Java II</td>
</tr>
<tr>
<td>IT 230</td>
<td>Building Internet Applications</td>
</tr>
<tr>
<td>ECT 330</td>
<td>Advanced Internet Application Development</td>
</tr>
<tr>
<td>IM 210</td>
<td>Introduction to Human-Computer Interaction</td>
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</table>

1 course from the following list:

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<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>ECT 355</td>
<td>Internet Systems: Collaboration, Commerce, and Media</td>
</tr>
<tr>
<td>ECT 360</td>
<td>Introduction to XML</td>
</tr>
<tr>
<td>ECT 365</td>
<td>Web Server Operations</td>
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### Game Design Minor

<table>
<thead>
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<tbody>
<tr>
<td>DC 201</td>
<td>Introduction to Screenwriting</td>
</tr>
<tr>
<td>ANI 105</td>
<td>Intro to Visual Design</td>
</tr>
<tr>
<td>ANI 101</td>
<td>Animation for Non-Majors</td>
</tr>
<tr>
<td>or ANI 201</td>
<td>Animation I</td>
</tr>
<tr>
<td>ANI 230</td>
<td>3D Design &amp; Modeling</td>
</tr>
<tr>
<td>GAM 224</td>
<td>Introduction to Game Design</td>
</tr>
<tr>
<td>or GAM 226</td>
<td>Game Design for Majors</td>
</tr>
<tr>
<td>GAM 244</td>
<td>Game Development I</td>
</tr>
<tr>
<td>GAM 245</td>
<td>Game Development II</td>
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### Game Programming Minor

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<tbody>
<tr>
<td>GAM 224</td>
<td>Introduction to Game Design</td>
</tr>
<tr>
<td>or GAM 226</td>
<td>Game Design for Majors</td>
</tr>
<tr>
<td>GAM 244</td>
<td>Game Development I</td>
</tr>
<tr>
<td>GAM 245</td>
<td>Game Development II</td>
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<td>GAM 374</td>
<td>Action Games Programming</td>
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2 courses from the following list:

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<tr>
<td>ANI 230</td>
<td>3D Design &amp; Modeling</td>
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<tr>
<td>GPH 321</td>
<td>Computer Graphics Development I</td>
</tr>
<tr>
<td>GPH 329</td>
<td>Computer Graphics Development II</td>
</tr>
<tr>
<td>GPH 350</td>
<td>Digital Modeling II</td>
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</table>

Any other 300-Level GAM or GPH course

### Information and Computing in the Modern World Minor

<table>
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<tr>
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<tbody>
<tr>
<td>ECT 350</td>
<td>Internet, Commerce and Society</td>
</tr>
<tr>
<td>HCI 201</td>
<td>Multimedia and the World Wide Web</td>
</tr>
<tr>
<td>IT 201</td>
<td>Introduction to Information Systems</td>
</tr>
<tr>
<td>IT 215</td>
<td>Analysis and Design Techniques</td>
</tr>
<tr>
<td>CSC 223</td>
<td>The Impact of Computing Technology on Our Lives</td>
</tr>
<tr>
<td>or IT 228</td>
<td>Ethics in Computer Games and Cinema</td>
</tr>
<tr>
<td>or CSC 208</td>
<td>The Computer and Social Responsibility</td>
</tr>
<tr>
<td>or IS 208</td>
<td>Information Technology, Economy and Society</td>
</tr>
<tr>
<td>IS 356</td>
<td>Knowledge Management Systems</td>
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</table>
Interactive Media Minor

Required Courses

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<tr>
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<tbody>
<tr>
<td>HCI 201</td>
<td>Multimedia and the World Wide Web</td>
</tr>
<tr>
<td>or IT 130</td>
<td>The Internet and the Web</td>
</tr>
<tr>
<td>IM 210</td>
<td>Introduction to Human-Computer Interaction</td>
</tr>
<tr>
<td>ANI 105</td>
<td>Intro to Visual Design</td>
</tr>
<tr>
<td>or GPH 211</td>
<td>Perceptual Principles for Digital Environments</td>
</tr>
<tr>
<td>IM 220</td>
<td>Interactive Media I</td>
</tr>
<tr>
<td>IM 270</td>
<td>User-centered Web Design</td>
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2 courses from the following list:

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<th>Course Title</th>
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<tbody>
<tr>
<td>IM 222</td>
<td>Information Visualization</td>
</tr>
<tr>
<td>IM 208</td>
<td>Virtual Worlds and Online Communities</td>
</tr>
<tr>
<td>IM 230</td>
<td>Scripting for Interactive Media</td>
</tr>
<tr>
<td>IM 320</td>
<td>Interactive Media II</td>
</tr>
<tr>
<td>IM 330</td>
<td>Advanced Scripting for Interactive Media</td>
</tr>
<tr>
<td>IT 231</td>
<td>Web Development I</td>
</tr>
<tr>
<td>IM 320</td>
<td>Interactive Media II</td>
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</table>

Information Systems Minor

<table>
<thead>
<tr>
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<th>Course Title</th>
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<tbody>
<tr>
<td>IT 240</td>
<td>Introduction to Desktop Databases</td>
</tr>
<tr>
<td>IT 201</td>
<td>Introduction to Information Systems</td>
</tr>
<tr>
<td>IT 215</td>
<td>Analysis and Design Techniques</td>
</tr>
<tr>
<td>IS 372</td>
<td>Fundamentals of Software Project Management</td>
</tr>
<tr>
<td>IS 373</td>
<td>Introduction to Large Systems Implementation</td>
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</table>

Information Technology Minor

<table>
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<th>Course Title</th>
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<tbody>
<tr>
<td>IT 130</td>
<td>The Internet and the Web</td>
</tr>
<tr>
<td>IT 231</td>
<td>Web Development I</td>
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<tr>
<td>IT 240</td>
<td>Introduction to Desktop Databases</td>
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<tr>
<td>IT 263</td>
<td>Applied Networks and Security</td>
</tr>
<tr>
<td>or TDC 261</td>
<td>Basic Communication Systems</td>
</tr>
<tr>
<td>IT 215</td>
<td>Analysis and Design Techniques</td>
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<tr>
<td>1 CDM Elective</td>
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</table>

Network Technology Minor

<table>
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<th>Course Title</th>
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<tbody>
<tr>
<td>CSC 211</td>
<td>Programming in Java I</td>
</tr>
<tr>
<td>or CSC 261</td>
<td>Programming Languages I:C/C++</td>
</tr>
<tr>
<td>CSC 212</td>
<td>Programming in Java II</td>
</tr>
<tr>
<td>or CSC 262</td>
<td>Programming Language II:C/C++</td>
</tr>
<tr>
<td>IT 201</td>
<td>Introduction to Information Systems</td>
</tr>
<tr>
<td>IT 263</td>
<td>Applied Networks and Security</td>
</tr>
<tr>
<td>TDC 362</td>
<td>Principles of Data Communication</td>
</tr>
<tr>
<td>TDC 363</td>
<td>Introduction to Local Area Networks</td>
</tr>
<tr>
<td>TDC 365</td>
<td>Network Interconnection Technologies</td>
</tr>
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</table>
Screenwriting Minor
DC 201 Introduction to Screenwriting
DC 205 Foundations of Cinema
DC 301 Advanced Screenwriting I
DC 302 Advanced Screenwriting II
DC 303 Advanced Screenwriting III
DC 304 Topics in Screenwriting

Security Minor
CSC 211 Programming in Java I
and CSC 212 Programming in Java II
or
CSC 261 Programming Language I: C/C++
and CSC 262 Programming Language II: C/C++
CSC 233 Codes and Cyphers
or CSC 333 Cryptology
CNS 378 Host and Information Security
CNS 320 Computer Forensic and Incident Response
CNS 228 Legal, Ethical and Social Issues in Information Security
CNS 340 Fundamentals of Information Assurance

Security in the Electronic World Minor
IT 130 The Internet and the Web
and IT 231 Web Development I
and IT 232 Web Development II
or
CSC 261 Programming Language I: C/C++
and CSC 262 Programming Language II: C/C++
or
CSC 241 Introduction to Computer Science I
and CSC 242 Introduction to Computer Science II
or
CSC 211 Programming in Java I
and CSC 212 Programming in Java II
CNS 228 Legal, Ethical and Social Issues in Information Security
CSC 233 Codes and Ciphers
CNS 320 Computer Forensic and Incident Response
CNS 340 Fundamentals of Information Assurance

Software Engineering Minor
CSC 261 Programming Languages I: C/C++
and CSC 262 Programming Languages II: C/C++
and CSC 224 Java for Programmers
or
CSC 241 Introduction to Computer Science I
and CSC 242 Introduction to Computer Science II
and CSC 224 Java for Programmers
or
CSC 211 Programming in Java I
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>CSC 212</td>
<td>Programming in Java II</td>
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<tr>
<td>CSC 383</td>
<td>Data Structures and Algorithms in Java</td>
</tr>
<tr>
<td>SE 325</td>
<td>Principles and Practices of Software Engineering</td>
</tr>
<tr>
<td>SE 330</td>
<td>Object-Oriented Modeling</td>
</tr>
<tr>
<td>SE 350</td>
<td>Object-Oriented Software Development</td>
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<tr>
<td><strong>Sound Design Minor</strong></td>
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</tr>
<tr>
<td>DC 215</td>
<td>Digital Sound Design</td>
</tr>
<tr>
<td>DC 312</td>
<td>Music for Film and Video</td>
</tr>
<tr>
<td>DC 313</td>
<td>Production Sound</td>
</tr>
<tr>
<td>DC 315</td>
<td>Advanced Digital Sound Design</td>
</tr>
<tr>
<td>3 courses from the following list</td>
<td></td>
</tr>
<tr>
<td>GAM 250</td>
<td>Digital Sound for Computer Games</td>
</tr>
<tr>
<td>DC 317</td>
<td>Advanced Sound Mixing for Cinema</td>
</tr>
<tr>
<td>DC 318</td>
<td>Advanced Dialogue Recording and Editing</td>
</tr>
<tr>
<td>DC 319</td>
<td>Advanced Sound Effects Recording and Editing</td>
</tr>
<tr>
<td>DC 313</td>
<td>Sound for Multimedia</td>
</tr>
<tr>
<td>DC 203</td>
<td>History of Motion Picture Sound</td>
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<tr>
<td><strong>Visual Effects Minor</strong></td>
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<tr>
<td>ANI 230</td>
<td>3D Design &amp; Modeling</td>
</tr>
<tr>
<td>ANI 379</td>
<td>Advanced 3D Compositing</td>
</tr>
<tr>
<td>DC 220</td>
<td>Editing I</td>
</tr>
<tr>
<td>DC 325</td>
<td>Color Correction</td>
</tr>
<tr>
<td>VFX 200</td>
<td>Introduction to Visual Effects</td>
</tr>
<tr>
<td>VFX 278</td>
<td>Digital Compositing I</td>
</tr>
<tr>
<td>VFX 378</td>
<td>Digital Compositing II</td>
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<tr>
<td><strong>Visual Computing Minor</strong></td>
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<tr>
<td>MAT 140</td>
<td>Discrete Mathematics I</td>
</tr>
<tr>
<td>or MAT 220</td>
<td>Linear Algebra with Applications</td>
</tr>
<tr>
<td>or 1 quarter of Calculus (Prerequisite for CSC 381)</td>
<td></td>
</tr>
<tr>
<td>IT 223</td>
<td>Data Analysis (Prerequisite for CSC 367)</td>
</tr>
<tr>
<td>CSC 381</td>
<td>Introduction to Digital Image Processing</td>
</tr>
<tr>
<td>CSC 382</td>
<td>Applied Image Analysis</td>
</tr>
<tr>
<td>IT 300</td>
<td>Research Experience</td>
</tr>
<tr>
<td>CSC 367</td>
<td>Introduction to Data Mining (IT 223 requirement)</td>
</tr>
</tbody>
</table>
Programs in CDM

College of Computing and Digital Media - Undergraduate Studies

Current Degree Descriptions

Bachelor of Science Degree Programs

School of Computing
Computer Game Development (joint with CIM)
Computer Graphics and Motion Technology (joint with CIM)
Computer Science
Information Assurance and Security Engineering
Information Systems
Information Technology
Interactive Media (joint with CIM)
Math & Computer Science (joint with LA & S)
Network Technologies

School of Cinema and Interactive Media
Animation
Computer Game Development (joint with SoC)
Computer Graphics and Motion Technology (joint with SoC)
Digital Cinema
Interactive Media (joint with SoC)

Bachelor of Arts Degree Programs

School of Cinema and Interactive Media
Animation
Digital Cinema

School of Computing
Computing (joint with SNL)
Information Technology

Combined Bachelor/Master Degree Programs

Professional Development Programs

Minors
School of Computing (SoC)

About the School of Computing

The School of Computing (SoC) houses CDM's technical degrees. With an emphasis on the theoretical as well as practical, students can earn degrees that prepare them for work in computing, programming, data storage, information processing, network security, software development, and computer graphics and motion technology.

Faculty

DAVID MILLER, Ph.D.
Dean
University of Chicago

OLAYELE ADELAKUN, Ph.D.
Associate Professor
Turku School of Economics & Business Adm.

GARY ANDRUS, Ph.D.
Associate Professor
Wayne State University

ANDRE BERTHIAUME, Ph.D.
Associate Professor
University of Montreal

GIAN MARIO BESANA, Ph.D.
Associate Professor
University of Notre Dame

GREGORY BREWSTER, Ph.D.
Associate Professor
University of Wisconsin, Madison

ROBIN BURKE, Ph.D.
Associate Professor
Northwestern University

SUSY CHAN, Ph.D.
Professor
Syracuse University

I-PING CHU, Ph.D.
Associate Professor
State University of New York at Stony Brook

ANTHONY CHUNG, Ph.D.
Associate Professor
University of Maryland Baltimore County

LUCIA DETTORI, Ph.D.
LUCIA DETTORI, Ph.D.
Associate Professor and Associate Dean
University of Paris XI

MASSIMO DIPIERRO, Ph.D.
Associate Professor
University of Southampton, UK

CLARK ELLIOTT, Ph.D.
Associate Professor
Northwestern University

HELMUT EPP, Ph.D.
Professor
Northwestern University

XIAOWEN FANG, Ph.D.
Associate Professor
Purdue University

ROBERT FISHER, Ph.D.
Associate Professor
Harvard University

JACOB FURST, Ph.D.
Associate Professor
University of North Carolina at Chapel Hill

GERALD GORDON, Ph.D.
Associate Professor
University of California, Berkeley

PETER HASTINGS, Ph.D.
Associate Professor
University of Michigan, Ann Arbor

HENRY HARR, Ph.D.
Professor Emeritus
Illinois Institute of Technology

JANE HUANG, Ph.D.
Associate Professor
University of Illinois at Chicago

RADHA JAGADEESAN, Ph.D.
Professor
Cornell University

XIAOPING JIA, Ph.D.
Professor
Northwestern University

STEVE JOST, Ph.D.
Associate Professor
Northwestern University

MARTIN KALIN, Ph.D.
Professor and Associate Dean
Northwestern University

IYAD KANJ, Ph.D.
Associate Professor
Texas A & M University

LINDA KNIGHT, Ph.D.
College of Computing and Digital Media - Undergraduate Studies ⊙ School of Computing (SoC) ⊙ Liberal Studies Program and Modern Language Option

**Liberal Studies Program and Modern Language Option**

The Liberal Studies Program is the common curriculum taken by all students in the seven undergraduate colleges of DePaul University. Overall, the Program is designed to develop students' writing abilities, computational and technological proficiencies, and critical and creative thinking skills.

Each major in the University has unique Liberal Studies requirements.

Please consult the Liberal Studies catalog for your relevant requirements as a CDM student as well as for information about the Modern Language Option.

**CDM Liberal Studies Courses**

CDM offers dozens of courses in many domains of the Liberal Studies Program. You can experiment with Screenwriting, Digital Photography, Game Design, Computer Graphics and Programming and fulfill a requirement at the same time. Many of these courses also serve as gateway courses into more advanced CDM courses. Courses can be grouped in two lists:

- Liberal Studies Course Offered by CDM
- CDM Liberal Studies Courses Offer by CDM - Grouped by Topic

Click to view Restrictions for CDM Students

**Liberal Studies Courses Offered by CDM**

This list represents Liberal Studies Program (LSP) courses taught by CDM only. For a complete list of LSP courses, visit the Liberal Studies homepage.

- **Arts and Literature**
  - *ANI 101 Animation for Non-Majors*
    Course introduces a variety of basic animation techniques for cinema and gaming, such as hand-drawn, cutout, stop-motion and (very basic) 3D, with an emphasis on the use of computer technology.
  - *ANI 206 History of Animation*
    History of Animation: This course is an introduction to the history and development of the field of animation.
• **DC 125 Digital Still Photography for Non-Majors**
  This course is an introduction to the history and aesthetics of still photography and to the concept of photography as a descriptive and interpretive artistic medium. Students studying photographs in this context will discover relationships between individual photographers choices and their own understanding of meaning. Students will learn the fundamental concepts necessary to shoot, edit, manipulate, and print digital still photographs.

• **DC 120 Video Editing**
  Students analyze and assemble dramatic scenes under a variety of conditions and narrative strategies. Editing theories, techniques, and procedures, issues of continuity, effects, movement and sound are examined as they relate to the fundamentals of cinematic montage and visual storytelling. This class present a variety of topics and experiences that are designed to broaden the student's understanding of the art of cinematic storytelling and montage. Work on more advanced projects is integrated into the class as a means to an understanding of advanced editing tools and techniques.

• **DC 201 Introduction to Screenwriting**
  This course focuses on narrative storytelling and encourages students to find their unique voices, while emphasizing the critical importance of working as part of a creative team.

• **DC 205 Foundations of Cinema**

• **DC 222 Story Structure in Cinema**
  This course focuses on the critical analysis of narrative structure in Cinema. Students will learn how to identify key story concepts and break down three act structure in finished films and scripts.

• **DC 233 Cinema & Art**
  This course will provide an overview of avant-garde film, video, animation and installation, and the relationship of these cinematic forms to Modern and Contemporary art.

• **DC 250 Working with Actors 1**
  This course is an introduction and examination of the collaborative process between the actor and director. Methods of study include lecture, discussion, assignments, and in-class acting exercises.

• **GAM 224 Introduction to Game Design**
  Students will learn about a game's "hook", its "high concept" and the crucial needs of marketing for a successful game design. Students will also learn to design a game's component pieces.

• **GPH 211 Perceptual Principles for Digital Environments I**

• **GPH 212 Perceptual Principles for Digital Environments II**

• **GPH 213 Perceptual Principles for Digital Environments III**
  These three foundational courses in computer animation take you through the process of creating 2-D and 3-D representations on the computer. The last course teaches you how to animate them!

• Junior Experiential Learning Credit

  • **CSC 298 Internship**
    Computer Science Internship in cooperation with local employers this course offers students the opportunity to integrate their academic experience with on-the-job training in computer related work areas.

  • **CSC 378 Software Projects for Community Clients**

  • **CSC 379 Technology Partnerships in Urban Schools**
    Students in this course will have the opportunity to assess urban community needs in the technology arena and develop skills in assisting and developing methods for bridging the digital divide that exists.

  • **DC 298 Internship in Media Production/Post-Production**
    This course offers students an excellent opportunity to gain professional experience, industry contacts, and referrals while still in school. Opportunities in post-production, motion picture production, advertising, television, animation,
motion graphics and interactive media. Admission to the program requires consent of internship course instructor. Current work experience plus classroom time is required. Supervisor evaluation will contribute to the final grade.

- **DC 380 Project BlueLight**
  Production of a feature-length digital motion picture written by students or faculty within the Digital Cinema program.

- **GPH 360 Modeling Spaces**
  The digital design and modeling of environmental spaces with attention to human use parameters.

- **IT 300 Research Experience**
  This course involves the exploration of a research topic under the supervision of a research advisor.

- **IT 398 Topics in Global Information Technology**
  This course focuses on current topics in the information and communications technologies that together support the "networked world." Sample topics are global software development and deployment, global data and information management, and cross-cultural project management for information systems. The course may be offered for variable credit hours (2, 4, 8, 16, and 32).

- **Scientific Inquiry**

  - **CSC 200 Survey of Computing**
    Learn about careers using computers and pick up some skills to help you manage your own PC or network!

  - **CSC 210 Introduction to Computing**
    A brief history of computers and an introduction to programming.

  - **CSC 211 Programming in Java I**

  - **CSC 212 Programming in Java II**
    Two courses in programming JAVA, a cross-platform, web-enabled language.

  - **CSC 233 Codes and Ciphers**
    A history of code making and breaking and the math and (computer) science behind it

  - **CSC 235 Problem Solving**
    How do you solve a problem? In this course we discuss different problem solving techniques and strategies such as modeling, establishing subgoals, and searching and pruning.

  - **CSC 239 Personal Computing**
    You will learn how to use Excel to analyze data and how to publish data and retrieve it from the World Wide Web.

  - **CSC 261 Programming Languages I: C/C++**

  - **CSC 262 Programming Languages II: C/C++**
    Two courses in programming C++

  - **ECT 250 Internet, Commerce, and Society**
    Ever shop online? Learn the basics behind how these kinds of web sites function

  - **IM 222 Information Visualization**
    This course discusses the basic problems and techniques of visualizing quantitative and qualitative data.

  - **IT 130 The Internet and the Web**
    Learn to design your own web site!

  - **IT 236 User Interface Development**

  - **IT 240 Introduction to Desktop Databases**
    Learn introductory concepts in constructing databases and networking files.

  - **IT 263 Applied Networks and Security**

  - **TDC 361 Basic Communication Systems**
    Learn about how networks work and how they impact your daily life.

- **Scientific Inquiry: Lab**

  - **DC 274 Image, Optics and Cinematic Motion**
    Cinematography is the scientifically-grounded discipline of making lighting and camera choices in order to record moving images. This course deals with the basic mathematics, physics, and photochemistry that underlie cinematography.
and that motivate camera design and construction. A student who masters the foundations of cinematography through a mixture of lectures, readings, exercises, and labs will be able to evaluate and understand how motion-based recording choices affect perception of moving images they see every day.

- **GPH 259 Design Geometry (cross-listed as ART 295)**
  Learn the basics of Computer Aided Design.

- **Self, Society, and the Modern World**
  - **CSC 223 The Impact of Computing Technology On Our Lives**
    This course will introduce students to an overview of social analysis techniques and the theories of social change.
  - **DC 105 Digital Media Literacies**
    This course is designed to help students develop an informed, critical and practical understanding of new communication media, including ways to read, write and produce in a digital environment.
  - **DC 235 Adaptation: The Cinematic Recrafting of Meaning**
    This course explores contemporary cinematic adaptations of literature and how recent reworkings in film open viewers up to critical analysis of the cultural practices surrounding the promotion and reception of these narratives.
  - **IS 208 IT, Economy and Society**
    This course broadly surveys the history of IT applications and information systems from the historical perspective, and critically assesses the digital impact on industry, the economy, workers, citizens, social class and the future.
  - **IT 201 Introduction to Information Systems**
    This course examines how various types of computer-based information systems form a critical part of modern organizations, how they work, and how they impact workers, organizations and the economy.

- **Understanding the Past: Intercontinental/Comparative**
  - **GAM 206 History of Games**
    This class will examine particular games and game genres in their historical context using a case study format.
  - **GPH 205 Historical Foundations of Visual Technology**
    This course is a survey of the development, application and meaning of visual technologies in a wide range of world cultures from pre-history to the present.

- **Philosophical Inquiry**
  - **CSC 208 The Computer and Social Responsibility**
    This course will research the impact technology has had in various areas of our lives, the new responsibilities technology presents, and our ability to deal with these changes in an ethical manner.
  - **DC 227 Film Philosophy**
    This course is a seminar on the philosophical analysis of film art, with an emphasis on the ways in which it creates meaning through techniques that define a formal structure. There is a particular focus on aesthetic problems about appearance and reality, literacy and visual effects, communication and alienation through film technology.
  - **DC 228 or GAM 228 or IT 228 Ethics in Computer Games and Cinema**
    Societies function based on normative ethics utilizing common sense to distinguish between ethical and unethical behavior. Most of us are not aware of the underlying theories when arriving at ethical judgments about right and wrong. However, the fast pace of progress in information technologies and digital entertainment creates an environment, in which ethical challenges are particularly complex. In the eyes of many, games and movies are violent, offensive and immoral. This course will concentrate on analyzing the impact of digital entertainment on an individual and society. Implications of certain values embedded in games and movies will be discussed. Elements of the ethical code of conduct for a game or movie creator will be formulated. The issue of balancing individual creativity vs. cultural impact, particularly on children, will be
The Internet and How It Works

- **CSC 200 Survey of Computing: Scientific Inquiry: Elective**
  Learn about Careers using computers and pick up some skills to help you manage your own PC or network!
- **CSC 210 Introduction to Computing: Scientific Inquiry: Elective**
  A brief history of computers and an introduction to programming
- **CSC 211 Programming in Java I: Scientific Inquiry: Elective**
- **CSC 212 Programming in Java II: Scientific Inquiry: Elective**
  Two courses in programming JAVA, a cross-platform, web-enabled language.
- **CSC 261 Programming Languages I: C/C++**
- **CSC 262 Programming Languages II: C/C++**
  Two courses in programming C++.
- **ECT 250 Internet, Commerce, and Society: Scientific Inquiry: Elective**
  Ever shop at Gap.com? Learn the basic behind how these kinds of web sites function.
- **HCI 201 Multimedia and the World Wide Web: Scientific Inquiry: Quantitative**
  Overview of the Web, its origins and capabilities. Create your own sample web page.
- **IT 130 The Internet and the Web**
  Learn to Design Your Own Website
- **IT 263 Applied Networks and Security**
  Programming and Basic Computer Know-How
- **TDC 361 Basic Communication Systems**

The Computer and Society

- **CSC 208 The Computer and Social Responsibility**
  This course will research the impact technology has had in various areas of our lives, the new responsibilities technology presents, and our ability to deal with these changes in an ethical manner
  This course will introduce students to an overview of social analysis techniques and the theories of social change.
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• **Computer Graphics and Motion Technology**

  • **ANI 101 Animation for Non-Majors**
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  • **GPH 360 Modeling Spaces**
  The digital design and modeling of environmental spaces with attention to human use parameters.

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  • **CSC 235 Problem Solving**
  How do you solve a problem? In this course we discuss different problem solving techniques and strategies such as modeling, establishing subgoals, and searching and pruning.

  • **CSC 239 Personal Computing: Scientific Inquiry: Quantitative**
  You will learn how to use Excel to analyze data and how to publish data and retrieve it from the World Wide Web.

  • **IT 223 Data Analysis**

  • **IT 240 Introduction to Desktop Databases: Personal Computing for Programmers: Scientific Inquiry: Elective**
  Learn introductory concepts in constructing databases and networking files.

  • **HCI 201 Multimedia and the World Wide Web: Scientific Inquiry: Quantitative**
  Overview of the Web, its origins and capabilities. Create your own sample web page.

  • **ECT 250 Internet, Commerce, and Society: Scientific Inquiry: Elective**
  Ever shop at Gap.com? Learn the basic behind how these kinds of web sites function.

  • **IT 130 The Internet and the Web (formerly ECT 270): Scientific Inquiry: Elective**
  Learn to design your own complex web site!

• **Codes, Ciphers and Computer Intelligence**

  • **CSC 233 Codes and Ciphers : Scientific Inquiry: Elective**
  A history of code making and breaking and the math and (computer) science behind it.

  • **CSC 250 Computers and Human Intelligence : Scientific Inquiry: Quantitative**
  Study how computers are designed to think like people.

• **Digital Cinema and Game Development**

  • **ANI 101 Animation for Non-Majors**
  Course introduces a variety of basic animation techniques for cinema and gaming, such as hand-drawn, cutout, stop-motion and (very basic) 3D, with an emphasis on the use of computer technology.

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History of Animation: This course is an introduction to the history and development of the field of animation.

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  This course is an introduction and examination of the collaborative process between the actor and director. Methods of study include lecture, discussion, assignments, and in-class acting exercises.

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- **GAM 224 Introduction to Game Design**
  Students will learn about a game's "hook", its "high concept" and the crucial needs of marketing for a successful game design. Students will also learn to design a game's component pieces.

- **Visualization**

  - **IM 222 Information Visualization**
    This course discusses the basic problems and techniques of visualizing quantitative and qualitative data.

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*Restrictions for CDM Students*
A CDM student can take any CDM course approved for liberal studies credit and use it to satisfy a domain of the liberal studies program (LSP) provided the course is NOT required as part of the student's major.

A CDM student can not count a course as a liberal studies requirement and a major requirement. No double counting is allowed for CDM classes by CDM students.

**Example 1**
- A CGMT student cannot use GPH 211 to satisfy the arts and literature requirement of LSP, as GPH 211 is required by all CGMT tracks.
- An ECT major CAN take GPH 211 to satisfy the arts and literature requirement of the LSP. The course qualifies for a liberal studies program domain that is required by the student's major.

**Example 2**
- A CS student CAN take GPH 259 to satisfy the Scientific Inquiry (SI)-Quantitative-Lab requirement of LSP because the course is not required by the CS major AND it counts for SI-Lab which is a required domain for CS students.
- A CS student CANNOT take CSC 250 to satisfy SI because, although the course is not required by any or our programs, it qualifies for SI-quantitative (not Lab) which is NOT a required domain for CDM students.

**Example 3**
- A CS student takes GPH 211 for arts and literature LSP. Although GPH 211 is allowed as an elective even if it is not a 300 level course, the student CANNOT count the course both as satisfying an LSP domain AND as an elective for the CS program.

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**Combined Bachelor/Master Degrees**

Academically gifted students may choose to enroll in the combined degree program. This dual degree program allows students to combine any CDM bachelor's degree with any CDM master's degree following the structure outlined below.

**Program Structure**

Students in the combined degree program take a maximum of three graduate level courses that count toward both their bachelor's and master's degree requirements. Students may enroll in graduate level coursework in the junior and senior year only. Students in the combined degree program will receive the bachelor's degree after meeting all graduation requirements including the standard 192 undergraduate credit hours. The master's degree is awarded after the student completes 10 additional graduate courses (40 credit hours), instead of the standard 13 courses (52 credit hours).

**Admission Criteria**
Minimum of 6 courses (24 credit hours) completed at DePaul
GPA of 3.3 or higher in courses taken at DePaul
Endorsement of faculty advisor

In order to apply for the BS/MS combined degree program, your faculty advisor must send an e-mail recommendation to Becky Krochmal. The recommendation should include your full name, student ID number, and the BS and MS degrees you wish to apply for.

Bachelor of Arts in Computing students who are enrolled via the School for New Learning are eligible for this program. Interested students who meet the admission criteria for a combined degree should contact Kenn Skorupa at SNL or Becky Krochmal at CDM for more information.

Maintaining Good Standing

- Each student's cumulative GPA and course grades will be reviewed after each Autumn, Winter, and Spring Quarter
- The student and Faculty Advisor will be notified when the student's cumulative GPA falls below 3.3 or when the student receives less than a C- in graduate level course (X-course)
- If a student's cumulative GPA falls below 3.3, the student must earn a term GPA of 3.3 or above in the following quarter to stay active. If the student does not achieve a 3.3 term GPA, then the student will be dismissed from the combined program and resume the traditional BA/BS. As long as the student's cumulative GPA is below 3.3, the student must continue to achieve at least a 3.3 term GPA in all following quarters or face dismissal. If, at any point, the student's cumulative GPA is once again 3.3 or higher, term requirements no longer apply.
- If a student does not maintain good standing, they will be dismissed from the Combined Degree and returned to normal undergraduate degree seeking status. Any graduate courses passed before dismissal will not be counted toward graduate credit and may not be retaken (if the student does pursue graduate study, other graduate courses must be substituted). If dismissed students wish to apply to a CDM graduate degree program, they may do so following normal CDM Admission procedures, but will still be required to take 13 graduate courses for a MS degree.

Bachelor's Degree to Master's Degree Transition

If, upon completion of the bachelor's degree, the student did not meet all prerequisites for the master's degree, then the student will need to complete (course, test or waiver) the missing prerequisites for the chosen master's Degree. If, while still in the undergraduate degree phase, the student receives less than a C- in graduate level course (X-course), the X-course cannot count towards the MS/MA Degree.

Designing a Course of Study

It is extremely important that the student and faculty advisor work together on a course of study immediately upon admission to the Combined Degree Program.

This course of study may include which undergraduate classes to avoid taking in order to take the graduate version. Failure to put together a solid plan can lead to extra coursework and a lengthening of the Combined Degree program.

It is advisable for the student and advisor to enter the proposed plan of study in the student communication record on the CDM intranet so it is available to the student and CDM faculty and staff.

Registering for Master's Degree Courses

Students will register for "Combined Degree Course" each time they wish to take a Master's level course using the Combined Degree Registration Form which must be signed by their faculty advisor.
Minors

A minor is a combination of courses that provides a cohesive introduction to an area of study. Typically, courses taken to satisfy minor field requirements are credited as open electives; however, there are some instances where minor field courses may be used for credit in other areas of the students curriculum. Grades for all courses, taken to fulfill a minor field requirement must be C or above. Grades of C- may be accepted for credit in the minor provided the minor GPA is 2.0 or above. A minimum of one-half of the courses required for a minor must be completed at DePaul University.

MINORS IN THE COLLEGE OF COMMERCE

Students enrolled in the College of Computing and Digital Media (CDM) may obtain a minor in Accounting, Business Administration, E-Business, Economics, Management, MIS, Marketing, and Pre-MBA. Please see the College of Commerce Section for Minor Requirements.

MINORS IN THE COLLEGE OF LIBERAL ARTS AND SCIENCES

Students enrolled in the College of Computing and Digital Media (CDM) may obtain a minor through the College of Liberal Arts and Sciences. Most Liberal Arts and Science departments offer minor concentrations of study. In general, a minor in a Liberal Arts and Sciences discipline consists of a set of introductory courses plus another set of more specialized courses. Most minors require six courses, some of which may also be used for credit in the Liberal Studies Program. For a complete list of minors offered through the College of Liberal Arts and Sciences, please consult that section of this online Bulletin.

MINORS IN THE COLLEGE OF COMPUTING AND DIGITAL MEDIA

Computer technology is an omnipresent part of our world, used in academic disciplines from physics to history to geography. CDM offers several minors that will appeal to all DePaul University students.

Political science and geography majors can pursue a minor in Data Analysis, Databases, or Data Visualization, which is important to understanding how to analyze census or GPS data.

Communications majors may be interested in Digital Cinema which will give you skills in creating videos for advertising.

Art majors interested in a career in graphics programming, animation or design may be interested in CDM's tech-focused minors in Animation or Computer Graphics Software Development.

An academic foundation in E-Commerce Technology, Networks or Information Systems can give Commerce students an edge in a tough job market.

There are other examples too numerous to mention. So if you have questions or want advice on what minor is best for you, can email our CDM Undergraduate Services team: gocdm@cdm.depaul.edu or call them at: 312-362-8714.

Policies for Academic Minors

Students must:

1. earn at least a grade of C- in each minor course and a GPA of no less than 2.0 for all courses in the minor;
2. earn at least a cumulative GPA of 2.0 for all courses applied to the minor;
3. not select the pass/fail option for courses in the minor;
4. meet the following residency requirement: no more than 50% of the requirements of a minor may be fulfilled by transfer credits, AP credit, IB credit of CLEP credit.

Finally, students cannot earn a minor in their major program.

Courses required to fulfill a minor are determined by the unit in which the minor resides.
CDM Minors for CDM Students

To obtain a minor in CDM when the major is also in CDM:

1. Satisfy all requirements for the major
2. Satisfy all requirements for the minor
3. Students must take at least 6 courses in the minor area that do not count towards their CDM major

Note: If you have already taken some of the courses listed under your minor on this page, work with your advisor to choose other courses within the same program area, i.e. NT minor would look under NT major courses and Computer Graphics Software Development would look under Computer Graphics Courses, in order to have 6 distinct courses.

- Animation Minor
- Computer Graphics Software Development
- Computer Science
- Data Analysis and Data Mining
- Database
- Data Visualization Development
- Digital Cinema
- E-Commerce Technology
- Game Design
- Game Programming
- Interactive Media
- Information and Computing in the Modern World
- Information Systems
- Information Technology
- Network Technologies
- Screenwriting
- Security
- Security in the Electronic World
- Software Engineering
- Sound Design
- Visual Computing
- Visual Effects

CDM Minor Requirements

Animation Minor

ANI 101 Animation for Non-Majors
or ANI 201 (not both) Animation I
ANI 230 3D Design & Modeling
ANI 231 3D Animation
ANI 206 History of Animation

3 courses from the following list: (at least 1 must be ANI)
DC 201 Introduction to Screenwriting
DC 210 Digital Cinema Production I
DC 220 Editing I
Any ANI course

Computer Graphics Software Development Minor
Liberal Studies
GPH 211    Perceptual Principles for Digital Environments I
GPH 212    Perceptual Principles for Digital Environments II

Course Requirements
CSC 261    Programming Languages I: C/C++
CSC 262    Programming Languages II: C/C++
CSC 393    Data Structures in C++
GPH 329    Computer Graphics Development II
GPH 339    Advanced Rendering Techniques
GPH 372    Principles of Computer Animation

Computer Science Minor
CSC 241    Introduction to Computer Science I
and CSC 242  Introduction to Computer Science II
and CSC 224  Java for Programmers
or
CSC 211    Programming in Java I
and CSC 212  Programming in Java II
and CSC 309  Object-Oriented Programming in C++
or
CSC 261    Programming Languages I: C/C++
and CSC 262  Programming Languages II: C/C++
and CSC 224  Java for Programmers
CSC 393    Data Structures in C++
or
CSC 383    Data Structures and Algorithms in Java
MAT 140    Discrete Mathematics I
CSC 373    Computer Systems I
CSC 374    Computer Systems II

Data Analysis and Data Mining Minor
IT 240    Introduction to Desktop Databases
IT 223    Data Analysis
CSC 324    Data Analysis and Statistical Software II
CSC 367    Introduction to Data Mining
CSC 334    Advanced Data Analysis
2 CDM Electives

Database Minor
CSC 211    Programming in Java I
and CSC 212  Programming in Java II
IT 223    Data Analysis
IT 240    Introduction to Desktop Databases
CSC 352    Database Programming
CSC 367    Introduction to Data Mining
1 CDM Elective

Data Visualization Development Minor
### Liberal Studies
- **GPH 211**: Perceptual Principles for Digital Environments I
- **GPH 212**: Perceptual Principles for Digital Environments II

### Course Requirements
- **CSC 261**: Programming Languages I: C/C++
- **CSC 262**: Programming Languages II: C/C++
- **CSC 323**: Data Analysis
- **CSC 393**: Data Structures in C++
- **GPH 329**: Computer Graphics Development II
- **GPH 372**: Principles of Computer Animation
- **GPH 380**: Visualization

### Digital Cinema Minor
- **DC 205**: Foundations of Cinema
- **DC 225**: Digital Still Photography
- **DC 201**: Introduction to Screenwriting
- **DC 220**: Editing I

3 courses from the following list:
- **ANI 101**: Animation for Non-Majors
- **DC 210**: Digital Cinema Production I
- **DC 270**: Topics in Digital Cinema
- **GAM 224**: Introduction to Game Design
- **DC 215**: Digital Sound Design
- **DC 275**: Cinematography
- **DC 310**: Digital Cinema Production II
- **DC 320**: Editing II
- **DC 389**: The Big Picture: The Entertainment Industry

### E-Commerce Technology Minor
- **IT 130**: The Internet and the Web
- **CSC 211**: Programming in Java I
- **CSC 212**: Programming in Java II
- **IT 230**: Building Internet Applications
- **ECT 330**: Advanced Internet Application Development
- **IM 210**: Introduction to Human-Computer Interaction

1 course from the following list:
- **ECT 355**: Internet Systems: Collaboration, Commerce, and Media
- **ECT 360**: Introduction to XML
- **ECT 365**: Web Server Operations

### Game Design Minor
- **DC 201**: Introduction to Screenwriting
- **ANI 105**: Intro to Visual Design
- **ANI 101**: Animation for Non-Majors
  - or **ANI 201**: Animation I
- **ANI 230**: 3D Design & Modeling
- **GAM 224**: Introduction to Game Design
  - or **GAM 226**: Game Design for Majors
**Game Programming Minor**

**GAM 224** Introduction to Game Design  
*or* **GAM 226** Game Design for Majors  
**GAM 244** Game Development I  
**GAM 245** Game Development II  
**GAM 374** Action Games Programming

2 courses from the following list:  
**ANI 230** 3D Design & Modeling  
**GPH 321** Computer Graphics Development I  
**GPH 329** Computer Graphics Development II  
**GPH 350** Digital Modeling II  
Any other 300-Level **GAM or GPH** course

**Information and Computing in the Modern World Minor**

**ECT 350** Internet, Commerce and Society  
**HCI 201** Multimedia and the World Wide Web  
**IT 201** Introduction to Information Systems  
**IT 215** Analysis and Design Techniques  
**CSC 223** The Impact of Computing Technology on Our Lives  
*or* **IT 228** Ethics in Computer Games and Cinema  
*or* **CSC 208** The Computer and Social Responsibility  
*or* **IS 208** Information Technology, Economy and Society  
**IS 356** Knowledge Management Systems  
*or* **IS 374** Management Support Systems  
*or* **IT 398** Topics in Global Information Technology

**Interactive Media Minor**

**Required Courses**

**HCI 201** Multimedia and the World Wide Web  
*or* **IT 130** The Internet and the Web  
**IM 210** Introduction to Human-Computer Interaction  
**ANI 105** Intro to Visual Design  
*or* **GPH 211** Perceptual Principles for Digital Environments  
**IM 220** Interactive Media I  
**IM 270** User-centered Web Design

2 courses from the following list:  
**IM 222** Information Visualization  
**IM 208** Virtual Worlds and Online Communities  
**IM 230** Scripting for Interactive Media  
**IM 320** Interactive Media II  
**IM 330** Advanced Scripting for Interactive Media  
**IT 231** Web Development I  
**IM 320** Interactive Media II

**Information Systems Minor**
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 240</td>
<td>Introduction to Desktop Databases</td>
</tr>
<tr>
<td>IT 201</td>
<td>Introduction to Information Systems</td>
</tr>
<tr>
<td>IT 215</td>
<td>Analysis and Design Techniques</td>
</tr>
<tr>
<td>IS 372</td>
<td>Fundamentals of Software Project Management</td>
</tr>
<tr>
<td>IS 373</td>
<td>Introduction to Large Systems Implementation</td>
</tr>
</tbody>
</table>

**Information Technology Minor**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>IT 130</td>
<td>The Internet and the Web</td>
</tr>
<tr>
<td>IT 231</td>
<td>Web Development I</td>
</tr>
<tr>
<td>IT 240</td>
<td>Introduction to Desktop Databases</td>
</tr>
<tr>
<td>IT 263</td>
<td>Applied Networks and Security</td>
</tr>
<tr>
<td>or TDC 261</td>
<td>Basic Communication Systems</td>
</tr>
<tr>
<td>IT 215</td>
<td>Analysis and Design Techniques</td>
</tr>
<tr>
<td>1 CDM Elective</td>
<td>1 CDM Elective</td>
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</table>

**Network Technology Minor**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>CSC 211</td>
<td>Programming in Java I</td>
</tr>
<tr>
<td>or CSC 261</td>
<td>Programming Languages I:C/C++</td>
</tr>
<tr>
<td>CSC 212</td>
<td>Programming in Java II</td>
</tr>
<tr>
<td>or CSC 262</td>
<td>Programming Language II:C/C++</td>
</tr>
<tr>
<td>IT 201</td>
<td>Introduction to Information Systems</td>
</tr>
<tr>
<td>IT 263</td>
<td>Applied Networks and Security</td>
</tr>
<tr>
<td>TDC 362</td>
<td>Principles of Data Communication</td>
</tr>
<tr>
<td>TDC 363</td>
<td>Introduction to Local Area Networks</td>
</tr>
<tr>
<td>TDC 365</td>
<td>Network Interconnection Technologies</td>
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</tbody>
</table>

**Screenwriting Minor**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>DC 201</td>
<td>Introduction to Screenwriting</td>
</tr>
<tr>
<td>DC 205</td>
<td>Foundations of Cinema</td>
</tr>
<tr>
<td>DC 301</td>
<td>Advanced Screenwriting I</td>
</tr>
<tr>
<td>DC 302</td>
<td>Advanced Screenwriting II</td>
</tr>
<tr>
<td>DC 303</td>
<td>Advanced Screenwriting III</td>
</tr>
<tr>
<td>DC 304</td>
<td>Topics in Screenwriting</td>
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</tbody>
</table>

**Security Minor**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>CSC 211</td>
<td>Programming in Java I</td>
</tr>
<tr>
<td>and CSC 212</td>
<td>Programming in Java II</td>
</tr>
<tr>
<td>or CSC 261</td>
<td>Programming Language I: C/C++</td>
</tr>
<tr>
<td>and CSC 262</td>
<td>Programming Language II:C/C++</td>
</tr>
<tr>
<td>CSC 233</td>
<td>Codes and Cyphers</td>
</tr>
<tr>
<td>or CSC 333</td>
<td>Cryptology</td>
</tr>
<tr>
<td>CNS 378</td>
<td>Host and Information Security</td>
</tr>
<tr>
<td>CNS 320</td>
<td>Computer Forensic and Incident Response</td>
</tr>
<tr>
<td>CNS 228</td>
<td>Legal, Ethical and Social Issues in Information Security</td>
</tr>
<tr>
<td>CNS 340</td>
<td>Fundamentals of Information Assurance</td>
</tr>
</tbody>
</table>

**Security in the Electronic World Minor**
IT 130  The Internet and the Web
and IT 231  Web Development I
and IT 232  Web Development II
or
CSC 261  Programming Language I: C/C++
and CSC 262  Programming Language II: C/C++
or
CSC 241  Introduction to Computer Science I
and CSC 242  Introduction to Computer Science II
or
CSC 211  Programming in Java I
and CSC 212  Programming in Java II
CNS 228  Legal, Ethical and Society Issues in Information Security
CSC 233  Codes and Ciphers
CNS 320  Computer Forensic and Incident Response
CNS 340  Fundamentals of Information Assurance

**Software Engineering Minor**
CSC 261  Programming Languages I: C/C++
and CSC 262  Programming Languages II: C/C++
and CSC 224  Java for Programmers
or
CSC 241  Introduction to Computer Science I
and CSC 242  Introduction to Computer Science II
and CSC 224  Java for Programmers
or
CSC 211  Programming in Java I
CSC 212  Programming in Java II
and then
CSC 383  Data Structures and Algorithms in Java
SE 325  Principles and Practices of Software Engineering
SE 330  Object-Oriented Modeling
SE 350  Object-Oriented Software Development

**Sound Design Minor**
DC 215  Digital Sound Design
DC 312  Music for Film and Video
DC 313  Production Sound
DC 315  Advanced Digital Sound Design
3 courses from the following list
GAM 250  Digital Sound for Computer Games
DC 317  Advanced Sound Mixing for Cinema
DC 318  Advanced Dialogue Recording and Editing
DC 319  Advanced Sound Effects Recording and Editing
DC 313  Sound for Multimedia
DC 203  History of Motion Picture Sound

**Visual Effects Minor**
ANI 230  3D Design & Modeling
ANI 379  Advanced 3D Compositing
DC 220  Editing I
DC 325  Color Correction
VFX 200  Introduction to Visual Effects
Visual Computing Minor

MAT 140  Discrete Mathematics I
or MAT 220  Linear Algebra with Applications
or 1 quarter of Calculus (Prerequisite for CSC 381)
IT 223  Data Analysis (Prerequisite for CSC 367)
CSC 381  Introduction to Digital Image Processing
CSC 382  Applied Image Analysis
IT 300  Research Experience
CSC 367  Introduction to Data Mining (IT 223 requirement)

Bachelor of Arts Degree Programs

College of Computing and Digital Media - Undergraduate Studies  School of Computing (SoC)  Bachelor of Arts Degree Programs

Computing (Joint with SNL)

The BA in Computing, offered jointly by CDM and DePaul's School for New Learning (SNL), prepares adult students for a computer-related career. The program is designed to be flexible for working adults, providing online and evening classes in DePaul's Loop, Naperville, Oak Forest, and O'Hare campuses. The personalized curriculum is competence-based, allowing students to earn credit from previous college courses, work, and life experience.

Degree Requirements

The Lifelong Learning Area consists of 12 competences satisfied by 9 required SNL courses, approved transfer courses or proficiency exams.

The Liberal Learning Area consists of 26 competences in 4 categories. Competences can be satisfied by SNL and CDM courses, relevant transfer courses of C- or better, and documented college-level learning from experience.

Focus Area consists of 12 competences satisfied through CDM courses, approved transfer courses and Advanced Project from SNL.

Course Requirements

For more information about the BA in Computing degree, please visit the School for New Learning website at http://snl.depaul.edu/Programs/UgradDegree/BAComputing.asp or contact SNL advising.

Information Technology

The BA in Information Technology program will give students a broad education in current
areas of information technology, with a focus on producing educated and sophisticated consumers of information technology. Students in this program will gain:

- An understanding of the impact of information and communication technologies on social, cultural, and ethical dimensions.
- Strong quantitative and reasoning skills with the ability to present technical data in verbal, written, and graphical forms.
- Verbal and written communication literacy.
- Students will also have an opportunity to specialize in a domain of interest or to acquire a generalized education in information technology.

Online Learning Options

Many courses are available for review and playback via the CDM Course Online playback system (COL). If a course is COL-enabled, any student registered in the course has access to the course playback. Students are strongly encouraged to utilize the COL resource wherever available. Some undergraduate courses are offered online. However, CDM currently does not offer any undergraduate program completely online. For more information on online learning at CDM visit the Online Learning page.

The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BA degree in Information Technology.

<table>
<thead>
<tr>
<th>First Year Program</th>
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<tbody>
<tr>
<td><strong>Chicago Quarter</strong></td>
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<tr>
<td><strong>Focal Point</strong></td>
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<td><strong>Writing</strong></td>
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<tr>
<td><strong>Quantitative Reasoning &amp; Technological Literacy</strong></td>
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<tr>
<th>Sophomore Year</th>
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<tr>
<td><strong>Multiculturalism in the US</strong></td>
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<tr>
<th>Junior Year</th>
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<tbody>
<tr>
<td><strong>Experiential Learning</strong></td>
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<table>
<thead>
<tr>
<th>Senior Year</th>
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<tbody>
<tr>
<td><strong>Capstone</strong></td>
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</table>

Learning Domains

<table>
<thead>
<tr>
<th>Arts and Literature (AL)</th>
<th>3 Courses Required</th>
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</thead>
<tbody>
<tr>
<td>Philosophical Inquiry (PI)</td>
<td>2 Courses Required (See note below)</td>
</tr>
<tr>
<td>Religious Dimensions (RD)</td>
<td>2 Courses Required (See note below)</td>
</tr>
<tr>
<td>Scientific Inquiry (SI)</td>
<td>1 SI Lab Course Required</td>
</tr>
<tr>
<td>Self, Society and the Modern World (SSMW)</td>
<td>3 Courses Required</td>
</tr>
<tr>
<td>Understanding the Past (UP)</td>
<td>2 Courses Required</td>
</tr>
<tr>
<td>Other</td>
<td>1 of the PI or RD courses must be an ethics course: Recommended choices are CSC 208 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)</td>
</tr>
</tbody>
</table>

*Note:* Courses offered in the student's primary major cannot be taken to fulfill LSP Domain
requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major.

**Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.**

The representation of these course requirements on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

**First Year**
- IT 130 The Internet and the Web
- IT 201 Introduction to Information Systems
- IT 240 Introduction to Desktop Databases
- ICS 200 Introduction to Business
- Liberal Studies 7
- Open Elective 1

**Second Year**
- IT 231 Web Development I
- IT 232 Web Development II
- IT 223 Data Analysis
- or CSC 239 Personal Computing
- IM 210 Introduction to Human-Computer Interaction
- IT 263 Applied Networks and Security
- or TDC 261 Basic Communication Systems
- CSC 223 The Impact of Computing Technology On Our Lives
- CMNS 212 Small Group Communication
- or CMNS 220 Public Speaking
- Liberal Studies 5

**Third Year**
- WRD 204 Technical Writing
- or WRD 301 Writing in Workplace Contexts
- Technical grounding courses from the following list
- IT 215 Analysis and Design Techniques
- IT 330 User Interface Development for Interactive Systems
- IT 320 Content Management Systems
- CSC 211 Programming in Java I
- CSC 212 Programming in Java II
- CSC 261 Programming in C++ I
- CSC 262 Programming in C++ II
- ECT 330 Advanced Internet Application Development
- TDC 363 Introduction to Local Area Networks
- GPH 211 Perceptual Principles for Digital Environments I
- GPH 212 Perceptual Principles for Digital Environments II
- GAM 244 Game Development I
- GAM 245 Game Development II
- SE 325 Introduction to Software Engineering
- Liberal Studies 5
- Major Electives 3
- Open Elective 1

**Fourth Year**
- CSC 378 Software Projects for Community Clients (Capstone)*
- or CSC 399 Independent Study*
- Liberal Studies 1
Liberal Studies
Major Electives
Open Electives

*CSC 378 is the first of a two course sequence (8 credit hours). It counts for both the capstone and the Junior Year Experiential Learning. The second course is the sequence is a special section of CSC 399. Both quarters must be completed to receive any credit.

**Major Electives**
A minimum of 2 major electives must be chosen from any **300 level CDM courses**. A maximum of 5 major electives may be chosen from any 200-level (or higher) DePaul Course. Students must earn a grade of C- or higher in all major elective courses.

**Open Electives**
Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a CDM minor or other minors are normally credited as open electives.

**Degree Requirements**
Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
- between 3.700 and 3.849 will be graduated magna cum laude
- of at least 3.850 will be graduated summa cum laude

For DePaul's policy on repeat courses and a complete list of academic policies see the DePaul Undergraduate Handbook.

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**Bachelor of Science Degree Programs**

College of Computing and Digital Media - Undergraduate Studies ⊙ School of Computing (SoC) ⊙ Bachelor of Science Degree Programs

**Computer Games Development (Joint with CIM)**

The **BS in Computer Game Development** prepares students to work in the multi-disciplinary field of computer gaming and interactive media. This program also requires strong mathematical and programming skills. CDM's Computer Game Development program combines coursework in game programming, game design, 3D Modeling, animation, physics, and artificial intelligence. Students work in cross-disciplinary teams to design and develop games. This program was created in consultation with our Game Dev Industry Advisory Board, and is the result of input from many of the top game programmers, producers and designers in the Chicago area. For more information on the degree visit the Game Dev website. Learn more about admission to this program.

**Concentrations**

Production and Design Concentration
Students in this concentration receive an education in all areas of game development, including game design, programming and animation, but also the basic business skills of
including game design, programming and animation, but also the basic business skills of project management, budgeting, contract negotiation, marketing and quality assurance.

Game Programming Concentration
Students in this concentration engage in the rigorous study of computer science basics, and then apply this knowledge to the demanding specialization of game programming. Areas of study include computer graphics development, computer science, linear algebra, game physics, and artificial intelligence programming.

Online Learning Options
Many courses are available for review and playback via the CDM Course Online playback system (COL). If a course is COL-enabled, any student registered in the course has access to the course playback. Students are strongly encouraged to utilize the COL resource wherever available. Some undergraduate courses are offered online. However, CDM currently does not offer any undergraduate program completely online. For more information on online learning at CDM visit the Online Learning page.

Production & Design Concentration
The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BS in Computer Games Development (Production and Design Concentration).

<table>
<thead>
<tr>
<th>First Year Program</th>
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<tbody>
<tr>
<td><strong>Chicago Quarter</strong></td>
<td>LSP 110 or LSP 111</td>
</tr>
<tr>
<td><strong>Focal Point</strong></td>
<td>LSP 112</td>
</tr>
<tr>
<td><strong>Writing</strong></td>
<td>WRD 103 and WRD 104</td>
</tr>
<tr>
<td><strong>Quantitative Reasoning &amp; Technological Literacy</strong></td>
<td>Not Required</td>
</tr>
<tr>
<td><strong>Sophomore Year</strong></td>
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<tr>
<td><strong>Multiculturalism in the US</strong></td>
<td>LSP 200</td>
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<tr>
<td><strong>Junior Year</strong></td>
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<tr>
<td><strong>Experiential Learning</strong></td>
<td>Required</td>
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<tr>
<td><strong>Senior Year</strong></td>
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<tr>
<td><strong>Capstone</strong></td>
<td>GAM 395</td>
</tr>
<tr>
<td><strong>Learning Domains</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Arts and Literature (AL)</strong></td>
<td>3 courses required:</td>
</tr>
<tr>
<td></td>
<td>- DC 201</td>
</tr>
<tr>
<td></td>
<td>- 2 Additional Courses</td>
</tr>
<tr>
<td><strong>Philosophical Inquiry (PI)</strong></td>
<td>2 Courses Required:</td>
</tr>
<tr>
<td></td>
<td>- DC 228/IT 228</td>
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<tr>
<td></td>
<td>- 1 Additional Course</td>
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<tr>
<td><strong>Religious Dimensions (RD)</strong></td>
<td>2 Courses Required</td>
</tr>
<tr>
<td><strong>Scientific Inquiry (SI)</strong></td>
<td>1 SI Lab Course Required</td>
</tr>
<tr>
<td><strong>Self, Society and the Modern World (SSMW)</strong></td>
<td>3 Courses Required</td>
</tr>
<tr>
<td><strong>Understanding the Past (UP)</strong></td>
<td>2 Courses Required</td>
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**Note:** Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the JYEL requirement.

**Effective Summer 2010, changes were made to the liberal studies domain requirements allowing**
for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.

The representation of the following Course Requirements on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

**First Year**
- GAM 226  Game Design for Majors
- GAM 244  Game Development I
- GAM 245  Game Development II
- ANI 101  Animation for Non-Majors
  or ANI 201  Animation I
- ANI 105  Intro to Visual Design
- 7 Liberal Studies

**Second Year**
- MAT 150  Calculus I
- GAM 341  Introduction to Level Design
- ANI 230  3D Design & Modeling
- CSC 261  Programming Languages I: C/C++
- CSC 262  Programming Languages II: C/C++
- GAM 230  Intro to Game Production
- 5 Liberal Studies
- 1 Major Elective

**Third Year**
- ANI 231  3D Animation
- GAM 374  Action Games Programming
- IM 220  Interactive Media I
- WRD 204  Technical Writing
- 4 Liberal Studies
- 4 Major Electives

**Fourth Year**
- GAM 333  The Business of Games
- GAM 392  Game Modification Workshop
- GAM 394  Game Development Project I
- GAM 395  Game Development Project II (Capstone)
- 3 Liberal Studies
- 1 Major Elective
- 4 Open Electives

**Major Electives**

Major electives can be chosen from the following list

- 200 level ANI, DC, GAM, GPH, or IM courses
- 300 level CDM courses

Students must earn a grade of C- or higher in all major elective courses.

**Open Electives**

Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a CDM minor or other minors are normally credited as open electives.
Degree Requirements

Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
- between 3.700 and 3.849 will be graduated magna cum laude
- of at least 3.850 will be graduated summa cum laude

For DePaul's policy on repeat courses and a complete list of academic policies see the DePaul Undergraduate Handbook.

Game Programming Concentration

The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BS in Computer Games Development (Game Programming Concentration).

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<thead>
<tr>
<th>First Year Program</th>
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<tbody>
<tr>
<td>Chicago Quarter</td>
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<td>Arts and Literature (AL)</td>
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<tr>
<td></td>
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<tr>
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**Note:** Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the JYEL requirement.
Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.

The representation of the following Course Requirements on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

**First Year**  
ANI 105 Intro to Visual Design  
GAM 226 Game Design For Majors  
GAM 244 Game Development I  
MAT 150 Calculus I  
MAT 151 Calculus II  
7 Liberal Studies

**Second Year**  
CSC 261 Programming Languages I: C/C++  
CSC 262 Programming Languages II: C/C++  
CSC 393 Data Structures in C++  
GAM 245 Game Development II  
ANI 230 3D Design & Modeling  
5 Liberal Studies  
2 Major Electives

**Third Year**  
CSC 373 Computer Systems I  
CSC 374 Computer Systems II  
GPH 321 Computer Graphics Development I  
GPH 329 Computer Graphics Development II  
GAM 350 Physics for Game Developers  
GAM 374 Action Games Programming  
4 Liberal Studies  
2 Major Electives

**Fourth Year**  
GPH 389 Real-Time Graphics Techniques  
GAM 376 Artificial Intelligence for Computer Games  
GAM 392 Game Modification Workshop  
GAM 394 Game Development Project I  
GAM 395 Game Development Project II (Capstone)  
3 Liberal Studies  
1 Major Elective  
3 Open Electives

**Major Electives**  
Major electives can be chosen from the following list  
200 level ANI, DC, GAM, GPH, or IM courses  
300 level CDM courses  

Students must earn a grade of C- or higher in all major elective courses.

**Open Electives**  
Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. ( Click here for details ). Students must earn a grade of D
or higher in all open elective courses. Courses that satisfy a CDM minor or other minors are normally cred ted as open electives.

Degree Requirements

Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
- between 3.700 and 3.849 will be graduated magna cum laude
- of at least 3.850 will be graduated summa cum laude

For DePaul's policy on repeat courses and a complete list of academic policies see the DePaul Undergraduate Handbook

College of Computing and Digital Media - Undergraduate Studies. School of Computing (SoC). Bachelor of Science Degree Programs. Computer Graphics and Motion Technology (Joint with CIM)

Computer Graphics and Motion Technology (Joint with CIM)

The BS in Computer Graphics and Motion Technology prepares students who have a passion for art, math or technology for a multitude of career paths in computer graphics animation. Graduates from this major create visuals for video games, scientific and aerospace visualization, movies, television, and advertising. Students in this program will learn

- Design and analysis of mathematics/computer science programming principles for computer graphic design.
- History and theory of graphic design (color theory, perception).
- Usability and human-computer interaction.
- Hands-on, practical knowledge of digital photography, 3D animation, 3D modeling, texturing and rendering.
- Visual communication techniques.
- Real world experience working in a group as a contributing team member.
- Creating animation in a production pipeline environment.

Concentrations

Developer Concentration
This concentration prepares students for careers in graphics software development, with courses in programming lanaguages (C/C++) and mathematics (calculus and algebra), in addition to animation and computer graphics.

Technical Designer Concentration
This concentration prepares students interested in visual aspects, including lighting setup, shader development, scripting and character rigging.

Online Learning Options

Some courses are available for review and playback via the CDM Course Online playback system (COL). If a course is COL-enabled, any student registered in the course has access to
If a course is COL-enabled, any student registered in the course has access to the course playback. Students are strongly encouraged to utilize the COL resource wherever available. Some undergraduate courses are offered online. However, CDM currently does not offer any undergraduate program completely online. For more information on online learning at CDM visit the Online Learning page.

Developer Concentration

The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BS degree in Computer Graphics and Motion Technology (Developer Concentration).

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<tr>
<th>First Year Program</th>
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</thead>
<tbody>
<tr>
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<td>LSP 110 or LSP 111</td>
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<tr>
<td>Focal Point</td>
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<td>Writing</td>
<td>WRD 103 and WRD 104</td>
</tr>
<tr>
<td>Quantitative Reasoning &amp; Technological Literacy</td>
<td>Not Required</td>
</tr>
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<tr>
<td>Experiential Learning</td>
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<tr>
<th>Senior Year</th>
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<tbody>
<tr>
<td>Capstone</td>
<td>GPH 395</td>
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</table>

<table>
<thead>
<tr>
<th>Learning Domains</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Literature (AL)</td>
<td>3 Courses Required</td>
</tr>
<tr>
<td>Philosophical Inquiry (PI)</td>
<td>2 Courses Required (See note below)</td>
</tr>
<tr>
<td>Religious Dimensions (RD)</td>
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</tr>
<tr>
<td>Understanding the Past (UP)</td>
<td>2 Courses Required</td>
</tr>
<tr>
<td>Other</td>
<td>1 of the PI or RD courses must be an ethics course: Recommended choices are CSC 208 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)</td>
</tr>
</tbody>
</table>

**Note:** Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the JYEL requirement.

Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.

The representation of the following **Course Requirements** on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.
**First Year**

CSC 261 Programming Languages I: C/C++
CSC 262 Programming Languages II: C/C++
CSC 393 Data Structures in C++
GPH 211 Perceptual Principles for Digital Environments I
GPH 212 Perceptual Principles for Digital Environments II
ANI 201 Animation I
MAT 140 Discrete Mathematics I

One of the following two-course sequences

**Calculus Sequence (option 1)**

MAT 150 Calculus I
MAT 151 Calculus II

**Calculus for Mathematics and Science Majors Sequence (option 2)**

MAT 160 Calculus for Mathematics and Science Majors I
MAT 161 Calculus for Mathematics and Science Majors II

**Calculus with Scientific Applications Sequence (option 3) Recommended**

MAT 170 Calculus I with Scientific Applications
MAT 171 Calculus II with Scientific Applications

3 Liberal Studies

**Second Year**

GPH 325 Survey of Computer Graphics
GPH 329 Computer Graphics Development II
GPH 339 Advanced Rendering Techniques
GPH 321 Computer Graphics Development I
or MAT 220 Linear Algebra with Applications
CMNS 220 Public Speaking

7 Liberal Studies

**Third Year**

GPH 372 Principles of Computer Animation
CSC 321 Design and Analysis of Algorithms
IM 315 Theory and Perception of Color
WRD 204 Technical Writing

5 Liberal Studies
3 Major Electives

**Fourth Year**

GPH 375 Advanced Graphics Development
GPH 388 Production Pipeline Techniques
GPH 389 Real-Time Graphics Techniques
GPH 395 Computer Graphics Senior Project (Capstone)

4 Liberal Studies
1 Major Elective
3 Open Electives

**Major Electives**

Students must earn a grade of C- or higher in all major elective courses.

Students can take any of the following courses, as long as it was not previously used to satisfy a major requirement.

ANI 300 3D Character Animation
ANI 310 Motion Capture Workshop
ART 225  Beginning Photography
ART 329  Advanced Digital Photography
ART 360  Illustration
ART 373  History of Design
IT 223  Data Analysis Self Placement Test
IT 236  User Interface Development
GPH 336  Smooth Surface Modeling for Graphics and Animation
GPH 340  Procedural Shading
GPH 341  Advanced Lighting Techniques
GPH 348  Rigging for Animation
GPH 376  Artificial Intelligence in Computer Games
GPH 380  Visualization
GPH 389  Real-Time Graphics Techniques
GPH 345  Digital Surface Modeling
GPH 259  Design Geometry
GPH 329  Computer Graphics Development II
GPH 350  Digital Modeling II
GPH 360  Modeling Spaces
GPH 374  Computer Games
GPH 375  Advanced Graphics Development
IM 270  User-Centered Web Design
IM 210  Introduction to Human-Computer Interaction
IM 322  Multimedia
IM 330  Advanced Scripting for Interactive Media
or IM 336  Interactive Media Scripting for Programmers *
MAT 150  Calculus I
MAT 151  Calculus II
MAT 152  Calculus III

* Students who take CSC 261 and CSC 262 may take IM 330 or IM 336 as an elective. Only one of the two would count as an elective.

Open Electives

Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a CDM minor or other minors are normally credited as open electives.

Degree Requirements

Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
- between 3.700 and 3.849 will be graduated magna cum laude
- of at least 3.850 will be graduated summa cum laude

For DePaul’s policy on repeat courses and a complete list of academic policies see the DePaul Undergraduate Handbook.
Technical Designer Concentration:

The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BS degree in Computer Graphics and Motion Technology (Technical Designer Concentration).

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<tbody>
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<tr>
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<td>Other</td>
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Note: Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the JYEL requirement.

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The representation of the following Course Requirements on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

First Year
IM 230 Scripting for Interactive Media
and IM 330  Advanced Scripting for Interactive Media
or CSC 261  Programming Language I: C/C++
and CSC 262  Programming Language II: C/C++
GPH 211  Perceptual Principles for Digital Environments I
GPH 212  Perceptual Principles for Digital Environments II
ANI 201  Animation I
MAT 140  Discrete Mathematics I
4 Liberal Studies

Second Year
GPH 345  Digital Surface Modeling
GPH 325  Survey of Computer Graphics
IT 236  User Interface Development
ART 242  Principles of Asian Art
IM 210  Introduction to Human-Computer Interaction
CMNS 220  Public Speaking
GPH 255  Hand Prototyping for Graphic Visualization
5 Liberal Studies

Third Year
ART 322  Modernism to Postmodernism
IM 315  Theory and Perception of Color
GPH 338  Survey of 3-D Animation
GPH 339  Advanced Rendering Techniques
WRD 204  Technical Writing
6 Liberal Studies
1 Major Elective

Fourth Year
GPH 395  Computer Graphics Senior Project (Capstone)
GPH 388  Production Pipeline Techniques
4 Liberal Studies
4 Major Electives
4 Open Electives

Major Electives
Students must earn a grade of C- or higher in all major elective courses.

Students can take any of the following courses, as long as it was not previously used to satisfy a major requirement.

ANI 300  3D Character Animation
ANI 310  Motion Capture Workshop
ART 225  Beginning Photography
ART 329  Advanced Digital Photography
ART 360  Illustration
ART 373  History of Design
IT 223  Data Analysis Self Placement Test
IT 236  User Interface Development
GPH 336  Smooth Surface Modeling for Graphics and Animation
GPH 340  Procedural Shading
GPH 341  Advanced Lighting Techniques
GPH 348  Rigging for Animation
GPH 376  Artificial Intelligence in Computer Games
Open Electives

Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a CDM minor or other minors are normally credited as open electives.

Degree Requirements

Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
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- of at least 3.850 will be graduated summa cum laude

For DePaul's policy on repeat courses and a complete list of academic policies see the DePaul Undergraduate Handbook.

Computer Science

The BS in Computer Science at DePaul CDM provides training in the foundations of computing, data storage and information processing. With this foundation, graduates of the
program will work as application developers and software engineers who can easily adapt to and create new information technologies, new computing paradigms, and new ideas for applying computer systems. Students in the program will develop a broad set of skills and expertise:

- Programming and software development skills, the technical tools of the IT trade
- An understanding of modern computer systems, and how to use them to develop computer applications
- Skills in application areas such as security and cryptography, robotics and computer vision, data mining and databases, distributed and mobile systems, intelligent systems and gaming, computational biology, etc.

BS in Computer Science Degree Requirements

**Concentration**
The Software Engineering concentration provides students with skills, knowledge, and experiences in state-of-the-art software engineering methodologies, techniques, and applications.

**Online Learning Options**
Some courses are available for review and playback via the CDM Course Online playback system (COL). If a course is COL-enabled, any student registered in the course has access to the course playback. Students are strongly encouraged to utilize the COL resource wherever available. Some undergraduate courses are offered online. However, CDM currently does not offer any undergraduate program completely online. For more information on online learning at CDM visit the Online Learning page.

**Course Requirements**
The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the Bachelor of Science degree in Computer Science.

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<tbody>
<tr>
<td>Capstone</td>
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</table>
| Philosophical Inquiry (PI) | 2 Courses Required:  
- CSC 208  
- 1 Additional Course |
| Religious Dimensions (RD) | 2 Courses Required |
| Scientific Inquiry (SI) | 1 SI Lab Course Required |
| Self, Society and the Modern World (SSMW) | 3 Courses Required |
| Understanding the Past (UP) | 2 Courses Required |
**Note:** Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the JYEL requirement.

*Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.*

The representation of the following **Course Requirements** on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

### First Year
- **CSC 241**  
  Introduction to Computer Science I
- **CSC 242**  
  Introduction to Computer Science II
- **MAT 140**  
  Discrete Mathematics I
- **MAT 141**  
  Discrete Mathematics II
- **CSC 224**  
  Java for Programmers
- **IT 223**  
  Data Analysis

6 Liberal Studies

### Second Year
- **CSC 383**  
  Data Structures and Algorithms in Java
- **or CSC 393**  
  Data Structures in C++
- **CSC 321**  
  Design and Analysis of Algorithms
- **CSC 309**  
  Object-Oriented Programming in C++
- **CSC 373**  
  Computer Systems I
- **CSC 374**  
  Computer Systems II
- **WRD 204**  
  Technical Writing

5 Liberal Studies
- 1 Open Elective

### Third Year
- **CSC 355**  
  Database Systems
- **SE 350**  
  Object-Oriented Software Development
- **CMNS 220**  
  Public Speaking

4 Liberal Studies
- 3 Major Electives
- 2 Open Electives

### Fourth Year
- **CSC 376**  
  Distributed Systems
- **CSC 348**  
  Introduction to Compiler Design
- **CSC 394**  
  Software Projects (Capstone)

4 Liberal Studies
- 3 Major Electives
- 2 Open Electives

---

**Major Electives**

Students must earn a grade of C- or higher in all major elective courses.

Major electives can be chosen from the list below. At least 4 of the 6 Major Field elective courses must be taken from the list of **Advanced Major Field** courses.

**Introductory Major Field Courses**
CSC 233 Codes and Ciphers
CSC 235 Problem Solving
GAM 244 Game Development I
GAM 245 Game Development II
IM 210 Introduction to Human-Computer Interaction
IM 336 Interactive Media Scripting for Programmers
IT 130 The Internet and the Web
IT 231 Web Development I
IT 232 Web Development II
IT 263 Applied Networks and Security
MAT 150 Calculus I
MAT 151 Calculus II

Advanced Major Field Courses

Artificial Intelligence

CSC 357 Expert Systems
CSC 358 Symbolic Programming
CSC 380 Foundations of Artificial Intelligence
CSC 395 Introduction to Social Computing

Computational Sciences

CSC 331 Scientific Computing

Computer Game Development

GAM 350 Physics for Game Developers
GAM 353 Tool Programming for Game Development
GAM 374 Action Games Programming
GAM 376 Artificial Intelligence for Computer Games
GAM 378 Strategy Games Programming
GAM 380 Console Game Development Environments
GAM 382 Serious Games
GAM 386 Game Development for Mobile Devices
GAM 390 Multiplayer Game Development
GAM 391 Game Performance Optimization
GAM 394 Game Development Project I
GAM 395 Game Development Project II

Computer Graphics

GPH 325 Survey of Computer Graphics
GPH 329 Computer Graphics Development II
GPH 339 Advanced Rendering Techniques
GPH 372 Principles of Computer Animation
GPH 375 Advanced Graphics Development
GPH 389 Real-Time Graphics Techniques
GPH 395 Computer Graphics Senior Project
Computer Networks

TDC 362    Principles of Data Communications  
TDC 363    Introduction to Local Area Networks  
TDC 365    Network Interconnection Technologies  
TDC 371    Wireless Communications Networks  
TDC 372    Digital Access Services  
TDC 375    Network Protocols  
TDC 377    Fundamentals of Network Security  
TDC 379    Telecommunication and Network Security Practicum

Computer Systems

CSC 343    Introduction to Operating Systems  
CSC 347    Concepts of Programming Languages  
CSC 375    Introduction to Robotics  
TDC 368    Network Programming

Computer Vision

CSC 381    Introduction to Digital Image Processing  
CSC 382    Applied Image Analysis

Data Analysis and Data Mining

CSC 324    Data Analysis and Statistical Software II  
CSC 334    Advanced Data Analysis  
CSC 367    Introduction to Data Mining

Database Storage

CSC 352    Database Programming  
CSC 353    Advanced Database Concepts

Human-Computer Interaction

CSC 360    User Interface Architecture and Development  
IM 360    User-Centered Evaluation  
IT 330    User Interface Development for Interactive Systems

Security

CNS 320    Computer Forensic and Incident Response  
CNS 340    Fundamentals of Information Assurance  
CSC 333    Cryptology

Software Engineering

SE 325    Introduction to Software Engineering  
SE 330    Object Oriented Modeling  
SE 333    Software Testing
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE 352</td>
<td>Object-Oriented Enterprise Application Development</td>
</tr>
<tr>
<td>SE 368</td>
<td>Software Measurement and Project Estimation</td>
</tr>
<tr>
<td></td>
<td><strong>Theory of Computation</strong></td>
</tr>
<tr>
<td>CSC 327</td>
<td>Problem Solving for Contests</td>
</tr>
<tr>
<td>CSC 344</td>
<td>Automata Theory and Formal Grammars</td>
</tr>
<tr>
<td>CSC 389</td>
<td>Theory of Computation</td>
</tr>
<tr>
<td></td>
<td><strong>Web Development</strong></td>
</tr>
<tr>
<td>CSC 308</td>
<td>Frameworks for Web Application Development</td>
</tr>
<tr>
<td>ECT 330</td>
<td>Advanced Internet Application Development</td>
</tr>
<tr>
<td>ECT 360</td>
<td>Introduction to XML</td>
</tr>
<tr>
<td>ECT 365</td>
<td>Web Server Operations</td>
</tr>
<tr>
<td>IT 320</td>
<td>Content Management Systems</td>
</tr>
</tbody>
</table>

**Open Electives**

Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a CDM minor or other minors are normally credited as open electives.

**Degree Requirements**

Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
- between 3.700 and 3.849 will be graduated magna cum laude
- of at least 3.850 will be graduated summa cum laude

For DePaul's policy on repeat courses and a complete list of academic policies see the [DePaul Undergraduate Handbook](#).

The Bachelor of Science in Computer Science: **Software Engineering Concentration Program**

This concentration provides students with skills, knowledge, and experiences in state-of-the-art software engineering methodologies, techniques, and applications.

**Course Requirements**

The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the Bachelor of Science degree in Computer Science.
First Year Program

<table>
<thead>
<tr>
<th>Chicago Quarter</th>
<th>LSP 110 or LSP 111</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focal Point</td>
<td>LSP 112</td>
</tr>
<tr>
<td>Writing</td>
<td>WRD 103 and WRD 104</td>
</tr>
<tr>
<td>Quantitative Reasoning &amp; Technological Literacy</td>
<td>Not Required</td>
</tr>
</tbody>
</table>

Sophomore Year

| Multiculturalism in the US | LSP 200 |

Junior Year

| Experiential Learning | Required |

Senior Year

| Capstone | CSC 394 |

Learning Domains

<table>
<thead>
<tr>
<th>Arts and Literature (AL)</th>
<th>3 Courses Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophical Inquiry (PI)</td>
<td>2 Courses Required: - CSC 208 - 1 Additional Course</td>
</tr>
<tr>
<td>Religious Dimensions (RD)</td>
<td>2 Courses Required</td>
</tr>
<tr>
<td>Scientific Inquiry (SI)</td>
<td>1 SI Lab Course Required</td>
</tr>
<tr>
<td>Self, Society and the Modern World (SSMW)</td>
<td>3 Courses Required</td>
</tr>
<tr>
<td>Understanding the Past (UP)</td>
<td>2 Courses Required</td>
</tr>
</tbody>
</table>

Note: Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the JYEL requirement.

Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.

The representation of the following Course Requirements on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

First Year

<table>
<thead>
<tr>
<th>CSC 241</th>
<th>Introduction to Computer Science I</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 242</td>
<td>Introduction to Computer Science II</td>
</tr>
<tr>
<td>MAT 140</td>
<td>Discrete Mathematics I</td>
</tr>
<tr>
<td>MAT 141</td>
<td>Discrete Mathematics II</td>
</tr>
<tr>
<td>CSC 224</td>
<td>Java for Programmers</td>
</tr>
<tr>
<td>6 Liberal Studies</td>
<td></td>
</tr>
<tr>
<td>1 Open Elective</td>
<td></td>
</tr>
</tbody>
</table>

Second Year

<table>
<thead>
<tr>
<th>CSC 321</th>
<th>Design and Analysis of Algorithms</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE 325</td>
<td>Introduction to Software Engineering</td>
</tr>
<tr>
<td>SE 350</td>
<td>Object-Oriented Software Development</td>
</tr>
<tr>
<td>CSC 309</td>
<td>Object-Oriented Programming in C++</td>
</tr>
<tr>
<td>WRD 204</td>
<td>Technical Writing</td>
</tr>
<tr>
<td>CSC 383</td>
<td>Data Structures and Algorithms in Java</td>
</tr>
<tr>
<td>or CSC 393</td>
<td>Data Structures in C++</td>
</tr>
</tbody>
</table>
### Third Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 223</td>
<td>Data Analysis</td>
</tr>
<tr>
<td>CSC 373</td>
<td>Computer Systems I</td>
</tr>
<tr>
<td>CSC 374</td>
<td>Computer Systems II</td>
</tr>
<tr>
<td>CSC 355</td>
<td>Database Systems</td>
</tr>
<tr>
<td>CSC 360</td>
<td>User Interface Architecture and Development</td>
</tr>
<tr>
<td>CMNS 220</td>
<td>Public Speaking</td>
</tr>
</tbody>
</table>

### Fourth Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 376</td>
<td>Distributed Systems</td>
</tr>
<tr>
<td>CSC 348</td>
<td>Introduction to Compiler Design</td>
</tr>
<tr>
<td>CSC 394</td>
<td>Software Projects (Capstone)</td>
</tr>
</tbody>
</table>

### Major Electives

SE Concentration major electives can be chosen from the following list:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE 330</td>
<td>Object Oriented Modeling</td>
</tr>
<tr>
<td>SE 333</td>
<td>Software Testing</td>
</tr>
<tr>
<td>SE 352</td>
<td>Object Oriented Enterprise Application Development</td>
</tr>
<tr>
<td>CSC 308</td>
<td>Frameworks for Web Application Development</td>
</tr>
<tr>
<td>IM 360</td>
<td>User-Centered Evaluation</td>
</tr>
</tbody>
</table>

Students must earn a grade of C- or higher in all major elective courses.

CS major electives can be chosen from the list of **Introductory Major Field** courses and **Advanced Major Field** courses.

### Introductory Major Field Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 233</td>
<td>Codes and Ciphers</td>
</tr>
<tr>
<td>CSC 235</td>
<td>Problem Solving</td>
</tr>
<tr>
<td>GAM 244</td>
<td>Game Development I</td>
</tr>
<tr>
<td>GAM 245</td>
<td>Game Development II</td>
</tr>
<tr>
<td>IM 210</td>
<td>Introduction to Human-Computer Interaction</td>
</tr>
<tr>
<td>IM 336</td>
<td>Interactive Media Scripting for Programmers</td>
</tr>
<tr>
<td>IT 130</td>
<td>The Internet and the Web</td>
</tr>
<tr>
<td>IT 231</td>
<td>Web Development I</td>
</tr>
<tr>
<td>IT 232</td>
<td>Web Development II</td>
</tr>
<tr>
<td>IT 263</td>
<td>Applied Networks and Security</td>
</tr>
<tr>
<td>MAT 150</td>
<td>Calculus I</td>
</tr>
<tr>
<td>MAT 151</td>
<td>Calculus II</td>
</tr>
</tbody>
</table>
**Advanced Major Field Courses**

**Artificial Intelligence**

CSC 357  Expert Systems  
CSC 358  Symbolic Programming  
CSC 380  Foundations of Artificial Intelligence  
CSC 395  Introduction to Social Computing

**Computational Sciences**

CSC 331 Scientific Computing

**Computer Game Development**

GAM 350  Physics for Game Developers  
GAM 353  Tool Programming for Game Development  
GAM 374  Action Games Programming  
GAM 376  Artificial Intelligence for Computer Games  
GAM 378  Strategy Games Programming  
GAM 380  Console Game Development Environments  
GAM 382  Serious Games  
GAM 386  Game Development for Mobile Devices  
GAM 390  Multiplayer Game Development  
GAM 391  Game Performance Optimization  
GAM 394  Game Development Project I  
GAM 395  Game Development Project II

**Computer Graphics**

GPH 325  Survey of Computer Graphics  
GPH 329  Computer Graphics Development II  
GPH 339  Advanced Rendering Techniques  
GPH 372  Principles of Computer Animation  
GPH 375  Advanced Graphics Development  
GPH 389  Real-Time Graphics Techniques  
GPH 395  Computer Graphics Senior Project

**Computer Networks**

TDC 362  Principles of Data Communications  
TDC 363  Introduction to Local Area Networks  
TDC 365  Network Interconnection Technologies  
TDC 371  Wireless Communications Networks  
TDC 372  Digital Access Services  
TDC 375  Network Protocols  
TDC 377  Fundamentals of Network Security  
TDC 379  Telecommunication and Network Security Practicum

**Computer Systems**

CSC 343  Introduction to Operating Systems
CSC 347 Concepts of Programming Languages
CSC 375 Introduction to Robotics
TDC 368 Network Programming

Computer Vision
CSC 381 Introduction to Digital Image Processing
CSC 382 Applied Image Analysis

Data Analysis and Data Mining
CSC 324 Data Analysis and Statistical Software II
CSC 334 Advanced Data Analysis
CSC 367 Introduction to Data Mining

Database Storage
CSC 352 Database Programming
CSC 353 Advanced Database Concepts

Human-Computer Interaction
CSC 360 User Interface Architecture and Development
IM 360 User-Centered Evaluation
IT 330 User Interface Development for Interactive Systems

Security
CNS 320 Computer Forensic and Incident Response
CNS 340 Fundamentals of Information Assurance
CSC 333 Cryptology

Software Engineering
SE 325 Introduction to Software Engineering
SE 330 Object Oriented Modeling
SE 333 Software Testing
SE 352 Object-Oriented Enterprise Application Development
SE 368 Software Measurement and Project Estimation

Theory of Computation
CSC 327 Problem Solving for Contests
CSC 344 Automata Theory and Formal Grammars
CSC 389 Theory of Computation

Web Development
CSC 308 Frameworks for Web Application Development
ECT 330 Advanced Internet Application Development
ECT 360 Introduction to XML
Students must earn a grade of C- or higher in all major elective courses.

Open Electives

Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a CDM minor or other minors are normally credited as open electives.

Degree Requirements

Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
- between 3.700 and 3.849 will be graduated magna cum laude
- of at least 3.850 will be graduated summa cum laude

For DePaul's policy on repeat courses and a complete list of academic policies see the DePaul Undergraduate Handbook.

Information Assurance and Security Engineering

In the BS in Information Assurance and Security Engineering students will learn the fundamentals of information security, security infrastructure design and implementation, computer forensics, risk assessment as well as the impact of security requirements on a business operation. Students learn to design, implement and manage various security infrastructure components through hands-on activities in our state-of-the-art information Assurance and Security Laboratory. The lab environment includes multi-vendor firewalls, Virtual Private Networks, intrusion detection and prevention systems, routers, switches, and event correlation systems.

Online Learning Options

Many courses are available for review and playback via the CDM Course Online playback system (COL). If a course is COL-enabled, any student registered in the course has access to the course playback. Students are strongly encouraged to utilize the COL resource wherever available. Some undergraduate courses are offered online. However, CDM currently does not offer any undergraduate program completely online. For more information on online learning at CDM visit the Online Learning page.

The Liberal Studies program is the general education portion of the curriculum at DePaul.
The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BS degree in Information Assurance and Security Engineering:

<table>
<thead>
<tr>
<th>First Year Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago Quarter</td>
</tr>
<tr>
<td>Focal Point</td>
</tr>
<tr>
<td>Writing</td>
</tr>
<tr>
<td>Quantitative Reasoning &amp; Technological Literacy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiculturalism in the US</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junior Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiential Learning</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Senior Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capstone</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning Domains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Literature (AL)</td>
</tr>
<tr>
<td>Philosophical Inquiry (PI)</td>
</tr>
<tr>
<td>Religious Dimensions (RD)</td>
</tr>
<tr>
<td>Scientific Inquiry (SI)</td>
</tr>
<tr>
<td>Self, Society and the Modern World (SSMW)</td>
</tr>
<tr>
<td>Understanding the Past (UP)</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

**Note:** Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the JYEL requirement.

**Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.**

The representation of the following **Course Requirements** on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

**First Year**
- IT 130 The Internet and the Web Self Placement Test
- IT 240 Introduction to Desktop Databases Self Placement Test
- IT 263 Applied Networks and Security
- IT 231 Web Development I
- CSC 233 Codes and Ciphers
MAT 140  Discrete Mathematics I
6 Liberal Studies

Second Year
CSC 211  Programming in Java I  Self Placement Test
and CSC 212  Programming in Java II
or CSC 261  Programming Languages I: C/C++
and CSC 262  Programming Languages II: C/C++
CSC 373  Computer Systems I
CNS 340  Fundamentals of Information Assurance
TDC 375  Network Protocols
TDC 365  Network Interconnection Technologies
WRD 204  Technical Writing
5 Liberal Studies

Third Year
TDC 377  Fundamentals of Network Security
CNS 378  Host and Information Security
CNS 320  Computer Forensic and Incident Response
CMNS 212  Small Group Communication
or CMNS 220  Public Speaking
7 Liberal Studies
1 Major Elective

Fourth Year
CSC 374  Computer Systems II
TDC 379  Telecommunication and Network Security Practicum
CNS 228  Legal, Ethical and Social Issues in Information Security
CNS 394  Information Systems Security Engineering I
CNS 395  Information Systems Security Engineering II (Capstone)
ACC 101  Introduction to Accounting I
or FIN 290  Finance for Non-Commerce Majors
1 Liberal Studies
1 Major Elective
4 Open Electives

Major Electives
Major electives can be chosen from any 300 level CDM courses.

Students must earn a grade of C- or higher in all major elective courses.

Open Electives
Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a CDM minor or other minors are normally credited as open electives.

Degree Requirements
Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
- between 3.700 and 3.849 will be graduated magna cum laude
- of at least 3.850 will be graduated summa cum laude

For DePaul's policy on repeat courses and a complete list of academic policies see the [DePaul Undergraduate Handbook](#).

## Information Systems

Students majoring in **Information Systems** develop the ability to use technology to address the operational, tactical, and strategic challenges facing business, nonprofit, and government organizations. Students in both concentrations develop background in usability and information assurance. Regardless of concentration, common long-term career positions for IS majors include Systems Analyst, Business Analyst, Information Technology Manager / Director, IT Project Manager, and IT Consultant. Job prospects for these positions are excellent, as many IS experts are due to retire over the next five years and the ability to outsource these positions is low.

### Concentrations

**Analyst**

Students following the Analyst Concentration seldom program, and often find entry level positions as user department analysts, acting as the liaison between the Information Technology department and other business units.

**Developer**

Students following the Developer Concentration do typically program, and are well prepared to begin careers as Web Developers.

### Online Learning Options

Many courses in this degree are available for review and playback via the CDM Course Online playback system (COL). If a course is COL-enabled, any student registered in the course has access to the course playback. Students are strongly encouraged to utilize the COL resource wherever available. Some undergraduate courses are offered online. However, CDM currently does not offer any undergraduate program completely online. For more information on online learning at CDM visit the [Online Learning page](#).

### Analyst Concentration

The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BS degree in Information Systems (Analyst Concentration):

<table>
<thead>
<tr>
<th>First Year Program</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chicago Quarter</strong></td>
<td>LSP 110 or LSP 111</td>
</tr>
<tr>
<td><strong>Focal Point</strong></td>
<td>LSP 112</td>
</tr>
</tbody>
</table>
WRD 103 and WRD 104

Not Required

LSP 200

Required

IS 376

3 Courses Required

2 Courses Required

2 Courses Required

1 SI Lab Course Required

3 Courses Required

2 Courses Required

1 of the PI or RD courses must be an ethics course: Recommended choices are CSC 208 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)

Note: Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the JYEL requirement.

Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.

The representation of these course requirements for the Analyst Concentration on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

**First Year**
- IT 201 Introduction to Information Systems
- IT 130 The Internet and the Web
- IT 240 Introduction to Desktop Databases
- IT 263 Applied Networks and Security
- IM 210 Introduction to Human-Computer Interaction

7 Liberal Studies

**Second Year**
- IT 215 Analysis and Design Techniques
- IT 223 Data Analysis
- IT 320 Content Management Systems
- IS 371 Introduction to IT System Management
- CMNS 212 Small Group Communications
or CMNS 220 Public Speaking
WRD 204 Technical Writing
or WRD 301 Writing in Workplace Contexts
ACC 101 Introduction to Accounting I
or MKT 301 Principles of Marketing
or 1 Psychology course
or 1 Management course
5 Liberal Studies

Third Year
IT 231 Web Development I
or CSC 211 Programming in Java I
IS 372 Fundamentals of Software Project Management
IS 373 Introduction to Large Systems Implementation
IM 360 User-Centered Evaluation
4 Liberal Studies
4 Open Electives

Fourth Year
ECT 310 Internet Application Development
or IT 232 Web Development II
or CSC 212 Programming in Java II
IS 375 Object-Oriented Analysis and Design
CNS 340 Fundamentals of Information Assurance
IS 376 Information Systems project (Capstone)
3 Liberal Studies
2 Major Elective
3 Open Electives

Major Electives
Major electives can be chosen from any 300-level CDM courses.

Students must earn a grade of C- or higher in all major elective courses.

Open Electives
Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a CDM minor or other minors are normally credited as open electives.

Degree Requirements
Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
- between 3.700 and 3.849 will be graduated magna cum laude
- of at least 3.850 will be graduated summa cum laude

For DePaul's policy on repeat courses and a complete list of academic policies see the
Developer Concentration

The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BS degree in Information Systems (Developer Concentration):

<table>
<thead>
<tr>
<th>First Year Program</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago Quarter</td>
<td>LSP 110 or LSP 111</td>
</tr>
<tr>
<td>Focal Point</td>
<td>LSP 112</td>
</tr>
<tr>
<td>Writing</td>
<td>WRD 103 and WRD 104</td>
</tr>
<tr>
<td>Quantitative Reasoning &amp; Technological Literacy</td>
<td>Not Required</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiculturalism in the US</td>
<td>LSP 200</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junior Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiential Learning</td>
<td>Required</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Senior Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Capstone</td>
<td>IS 376</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning Domains</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Literature (AL)</td>
<td>3 Courses Required</td>
</tr>
<tr>
<td>Philosophical Inquiry (PI)</td>
<td>2 Courses Required (See note below)</td>
</tr>
<tr>
<td>Religious Dimensions (RD)</td>
<td>2 Courses Required (See note below)</td>
</tr>
<tr>
<td>Scientific Inquiry (SI)</td>
<td>1 SI Lab Course Required</td>
</tr>
<tr>
<td>Self, Society and the Modern World (SSMW)</td>
<td>3 Courses Required</td>
</tr>
<tr>
<td>Understanding the Past (UP)</td>
<td>2 Courses Required</td>
</tr>
<tr>
<td>Other</td>
<td>1 of the PI or RD courses must be an ethics course: Recommended choices are CSC 208 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)</td>
</tr>
</tbody>
</table>

**Note:** Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the JYEL requirement.

**Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.**

The representation of these course requirements for the Developer Concentration on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.
First Year
IT 201 Introduction to Information Systems
IT 130 The Internet and the Web
IT 240 Introduction to Desktop Databases
IT 263 Applied Networks and Security
IT 231 Web Development I
7 Liberal Studies

Second Year
IT 215 Analysis and Design Techniques
IT 223 Data Analysis
CSC 211 Programming in Java I
and CSC 212 Programming/DD>
or CSC 261 Programming in C++ I
and CSC 262 Programming in C++ II
CSC 383 Data Structures and Algorithms in Java
IM 210 Introduction to Human-Computer Interaction
WRD 204 Technical Writing
or WRD 301 Writing in Workplace Contexts
5 Liberal Studies

Third Year
ECT 330 Web Development I
IS 372 Fundamentals of Software Project Management
ECT 355 Internet Systems: Collaboration,Commerce, and Media
ECT 360 Introduction to XML
CMNS 212 Small Group Communications
or CMNS 220 Public Speaking
4 Liberal Studies
3 Open Electives

Fourth Year
IS 375 Object-Oriented Analysis and Design
CNS 340 Fundamentals of Information Assurance
SE 352 Object-Oriented Enterprise Application Development
IS 376 Information Systems project (Capstone)
3 Liberal Studies
2 Major Elective
3 Open Electives

Major Electives

Major electives can be chosen from any 300-level CDM courses.

Students must earn a grade of C- or higher in all major elective courses.

Open Electives

Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details.) Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a CDM minor or other minors are normally credited as open electives.

Degree Requirements
Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
- between 3.700 and 3.849 will be graduated magna cum laude
- of at least 3.850 will be graduated summa cum laude

For DePaul's policy on repeat courses and a complete list of academic policies see the DePaul Undergraduate Handbook.

Information Technology

The **BS in Information Technology** is a technical degree that instructs students in core competencies in the areas of problem solving and programming, networks and communications systems, databases, internet and web technologies, security, and project management. Students also receive a solid academic foundation in business concepts and technical communication.

Online Learning Options

Many courses in this degree are available for review and playback via the CDM Course Online playback system (COL). If a course is COL-enabled, any student registered in the course has access to the course playback. Students are strongly encouraged to utilize the COL resource wherever available. Some undergraduate courses are offered online. However, CDM currently does not offer any undergraduate program completely online. For more information on online learning at CDM visit the Online Learning page.

Liberal Studies

The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BS degree in Information Technology:

<table>
<thead>
<tr>
<th>First Year Program</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chicago Quarter</strong></td>
<td>LSP 110 or LSP 111</td>
</tr>
<tr>
<td><strong>Focal Point</strong></td>
<td>LSP 112</td>
</tr>
<tr>
<td><strong>Writing</strong></td>
<td>WRD 103 and WRD 104</td>
</tr>
<tr>
<td><strong>Quantitative Reasoning &amp; Technological Literacy</strong></td>
<td>Not Required</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Multiculturalism in the US</strong></td>
<td>LSP 200</td>
</tr>
</tbody>
</table>
### Junior Year

**Experiential Learning** | Required
---|---

### Senior Year

**Capstone** | Required
---|---
( **Note**: Any CDM-based Capstone)

### Learning Domains

<table>
<thead>
<tr>
<th>Domain</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arts and Literature (AL)</strong></td>
<td>3 Courses Required</td>
</tr>
</tbody>
</table>
| **Philosophical Inquiry (PI)**              | 2 Courses Required  
  ( **See note below** )                  |
| **Religious Dimensions (RD)**               | 2 Courses Required  
  ( **See note below** )                  |
| **Scientific Inquiry (SI)**                 | 1 SI Lab Course Required  |
| **Self, Society and the Modern World (SSMW)** | 3 Courses Required:  
  - ECO 105  
  - 2 Additional Courses  |
| **Understanding the Past (UP)**             | 2 Courses Required  |

**Other** | 1 of the PI or RD courses must be an ethics course: Recommended choices are CSC 208 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)

**Note**: Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the JYEL requirement.

*Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.*

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The representation of the following **Course Requirements** on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

### First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Placement Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 130</td>
<td>The Internet and the Web</td>
<td>Self Placement Test</td>
</tr>
<tr>
<td>IT 231</td>
<td>Web Development I</td>
<td></td>
</tr>
<tr>
<td>IT 232</td>
<td>Web Development II</td>
<td></td>
</tr>
<tr>
<td>IT 240</td>
<td>Introduction to Desktop Databases</td>
<td>Self Placement Test</td>
</tr>
<tr>
<td>IT 263</td>
<td>Applied Networks and Security</td>
<td></td>
</tr>
<tr>
<td>IT 330</td>
<td>User Interface Development for Interactive Systems</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>6 Liberal Studies</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Placement Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 224</td>
<td>Java for Programmers</td>
<td>Self Placement Test</td>
</tr>
<tr>
<td>or CSC 309</td>
<td>Object-Oriented Programming in C++</td>
<td></td>
</tr>
<tr>
<td>CSC 383</td>
<td>Data Structures and Algorithms in Java</td>
<td></td>
</tr>
<tr>
<td>or CSC 393</td>
<td>Data Structures in C++</td>
<td></td>
</tr>
<tr>
<td>CSC 352</td>
<td>Database Programming</td>
<td></td>
</tr>
<tr>
<td>IT 215</td>
<td>Analysis and Design Techniques</td>
<td>Self Placement Test</td>
</tr>
<tr>
<td>IT 223</td>
<td>Data Analysis</td>
<td>Self Placement Test</td>
</tr>
<tr>
<td>MAT 140</td>
<td>Discrete Mathematics I</td>
<td></td>
</tr>
<tr>
<td>WRD 204</td>
<td>Technical Writing</td>
<td></td>
</tr>
</tbody>
</table>
or WRD 301  Writing in Workplace Contexts
5 Liberal Studies

**Third Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNS 340</td>
<td>Fundamentals of Information Assurance</td>
</tr>
<tr>
<td>IS 372</td>
<td>Fundamentals of Software Project Management</td>
</tr>
<tr>
<td>MKT 301</td>
<td>Principles of Marketing</td>
</tr>
<tr>
<td>CSC 373</td>
<td>Computer Systems I</td>
</tr>
<tr>
<td>or ECT 365</td>
<td>Web Server Operations</td>
</tr>
<tr>
<td>or TDC 311</td>
<td>Computers in Telecommunications Systems</td>
</tr>
<tr>
<td>CMNS 212</td>
<td>Small Group Communication</td>
</tr>
<tr>
<td>or CMNS 220</td>
<td>Public Speaking</td>
</tr>
</tbody>
</table>

5 Liberal Studies
1 Major Elective

**Fourth Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 101</td>
<td>Introduction to Accounting I</td>
</tr>
<tr>
<td>or FIN 290</td>
<td>Finance for Non-Commerce Majors</td>
</tr>
<tr>
<td>CSC 394</td>
<td>Software Projects (Capstone)</td>
</tr>
<tr>
<td>or any other CDM capstone course</td>
<td></td>
</tr>
</tbody>
</table>

3 Liberal Studies
3 Major Electives
5 Open Electives

**Major Electives**

Students must earn a grade of C- or higher in all major elective courses.

Major Electives can be chosen from any **300 level CDM courses**. At most **one** of the electives can be chosen from the list below:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANI 201</td>
<td>Animation I</td>
</tr>
<tr>
<td>ANI 230</td>
<td>3D Design &amp; Modeling</td>
</tr>
<tr>
<td>ANI 231</td>
<td>3D Animation</td>
</tr>
<tr>
<td>ANI 240</td>
<td>Animation Production I</td>
</tr>
<tr>
<td>GAM 244</td>
<td>Game Development I</td>
</tr>
<tr>
<td>GAM 245</td>
<td>Game Development II</td>
</tr>
<tr>
<td>GPH 211</td>
<td>Perceptual Principles for Digital Environments I</td>
</tr>
<tr>
<td>GPH 212</td>
<td>Perceptual Principles for Digital Environments II</td>
</tr>
<tr>
<td>GPH 213</td>
<td>Perceptual Principles for Digital Environments III</td>
</tr>
<tr>
<td>GPH 250</td>
<td>Digital Modeling I</td>
</tr>
<tr>
<td>GPH 259</td>
<td>Design Geometry</td>
</tr>
<tr>
<td>IM 210</td>
<td>Introduction to Human-Computer Interaction</td>
</tr>
<tr>
<td>IM 270</td>
<td>User-Centered Web Design</td>
</tr>
<tr>
<td>IT 320</td>
<td>Content Management Systems</td>
</tr>
</tbody>
</table>

**Open Electives**

Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a CDM minor or other minors are normally credited as open electives.

**Degree Requirements**
Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
- between 3.700 and 3.849 will be graduated magna cum laude
- of at least 3.850 will be graduated summa cum laude

For DePaul's policy on repeat courses and a complete list of academic policies see the DePaul Undergraduate Handbook.

Interactive Media (Joint with CIM)

The BS in Interactive Media degree prepares students for the expanding field of interaction design and its application to multimedia and web development. The base program integrates technical and artistic disciplines. Technical concepts and skills involve web markup languages, interactive scripting and human-centered design. The student also explores artistic areas of study such as communication design, animation, game design and cinema. A major in interactive media provides students with broad skills and expertise including:

- Develop well-designed web pages, sites, and interactive applications
- Design, code and create content for casual games
- Conduct usability tests for interactive web sites
- Employ visual design principles to express ideas and concepts
- Create prototypes for interactive displays

Online Learning Options

Many courses are available for review and playback via the CDM Course Online playback system (COL). If a course is COL-enabled, any student registered in the course has access to the course playback. Students are strongly encouraged to utilize the COL resource wherever available. Some undergraduate courses are offered online. However, CDM currently does not offer any undergraduate program completely online. For more information on online learning at CDM visit the Online Learning page.

The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BS degree in Interactive Media:

<table>
<thead>
<tr>
<th>First Year Program</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago Quarter</td>
<td>LSP 110 or LSP 111</td>
</tr>
<tr>
<td>Focal Point</td>
<td>LSP 112</td>
</tr>
<tr>
<td>Writing</td>
<td>WRD 103 and WRD 104</td>
</tr>
<tr>
<td>Learning Domain</td>
<td>Requirement</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Quantitative Reasoning &amp; Technological Literacy</td>
<td>Not Required</td>
</tr>
<tr>
<td>Sophomore Year</td>
<td></td>
</tr>
<tr>
<td>Multiculturalism in the US</td>
<td>LSP 200</td>
</tr>
<tr>
<td>Junior Year</td>
<td></td>
</tr>
<tr>
<td>Experiential Learning</td>
<td>Required</td>
</tr>
<tr>
<td>Senior Year</td>
<td></td>
</tr>
<tr>
<td>Capstone</td>
<td>Required</td>
</tr>
<tr>
<td>Learning Domains</td>
<td></td>
</tr>
<tr>
<td>Arts and Literature (AL)</td>
<td>3 Courses Required:</td>
</tr>
<tr>
<td></td>
<td>- DC 205</td>
</tr>
<tr>
<td></td>
<td>- 2 Additional Courses</td>
</tr>
<tr>
<td>Philosophical Inquiry (PI)</td>
<td>2 Courses Required:</td>
</tr>
<tr>
<td></td>
<td>- CSC 208 or IT 228</td>
</tr>
<tr>
<td></td>
<td>- 1 Additional Course</td>
</tr>
<tr>
<td>Religious Dimensions (RD)</td>
<td>2 Courses Required</td>
</tr>
<tr>
<td>Scientific Inquiry (SI)</td>
<td>1 SI Lab Course Required</td>
</tr>
<tr>
<td>Self, Society and the Modern World (SSMW)</td>
<td>3 Courses Required:</td>
</tr>
<tr>
<td></td>
<td>- PSY 105</td>
</tr>
<tr>
<td></td>
<td>- 2 Additional Courses</td>
</tr>
<tr>
<td>Understanding the Past (UP)</td>
<td>2 Courses Required</td>
</tr>
</tbody>
</table>

**Note:** Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the JYEL requirement.

**Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.**

The representation of these course requirements on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

**First Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 130</td>
<td>The Internet and the Web</td>
</tr>
<tr>
<td>ANI 105</td>
<td>Intro to Visual Design</td>
</tr>
<tr>
<td>IM 270</td>
<td>User-Centered Web Design</td>
</tr>
<tr>
<td>ART 260</td>
<td>Art and Design I: History, Concept, Structure</td>
</tr>
<tr>
<td>IT 240</td>
<td>Introduction to Desktop Databases</td>
</tr>
<tr>
<td>ANI 101</td>
<td>Animation for Non-Majors</td>
</tr>
<tr>
<td>or ANI 201</td>
<td>Animation I</td>
</tr>
</tbody>
</table>

6 Liberal Studies
Second Year
IT 223 Data Analysis
IT 231 Web Development I
IM 210 Introduction to Human-Computer Interaction
IM 220 Interactive Media I
IM 230 Scripting for Interactive Media
ART 264 Typography I
ANI 230 3D Design & Modeling
5 Liberal Studies

Third Year
IM 360 User-Centered Evaluation
IM 320 Interactive Media II
IM 330 Advanced Scripting for Interactive Media
WRD 204 Technical Writing
GAM 244 Game Development I
4 Liberal Studies
3 Major Electives

Fourth Year
IM 394 Human-Computer Interaction Capstone
or CSC 394 Software Projects (Capstone)
4 Liberal Studies
2 Major Elective
5 Open Electives

Major Electives

Major electives can be chosen from the following list
Any 200- or 300-level CDM,ART or CMN course.

Any of the following:
PSY 360 Theories of Learning and Cognition
PSY 375 Sensation and Perception
PSY 380 Industrial and Organizational Psychology
PSY 383 Psychology of Design
PSY 241 Research Methods I
PSY 242 Research Methods II

Students must earn a grade of C- or higher in all major elective courses.

Open Electives

Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a CDM minor or other minors are normally credited as open electives.

Degree Requirements

Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher
Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
- between 3.700 and 3.849 will be graduated magna cum laude
- of at least 3.850 will be graduated summa cum laude

For DePaul’s policy on repeat courses and a complete list of academic policies see the DePaul Undergraduate Handbook.

Mathematics / Computer Science (Joint with LA&S)

The BS in Math and Computer Science is a joint degree between the College of Computing and Digital Media and the Department of Mathematics. It provides challenging opportunities to exceptional students with an interest in the highly theoretical nexus of math and computer science. Mathematics is a key element to the theory and practice of computer science and technology:

- Number theory forms the basis for encryption algorithms for messages sent over the Internet.
- Facts from projective geometry and multivariable calculus underlie the computer algorithms that control computer animation.
- Properties of abstract groups are instrumental in correcting transmission errors that occur when information is sent from one computer to another.
- Graph theory and combinatorics are used to create algorithms for Internet search engines and analyze Internet routing protocols.

This program is intended to appeal to academically talented students. It is designed to prepare them for graduate study in various areas of computer science such as theoretical computer science, graphics, data analysis, artificial intelligence, and computational methods and in areas in applied mathematics such as numerical analysis or discrete mathematics. The program is also designed to prepare students to compete for the more theoretical complex jobs found in computer software development.

Students in the program will explore a broad range of fields including:

- Theory of computation
- Computational mathematics
- Artificial intelligence
- Data analysis
- Graphics
- Computer vision

It is highly recommended that students concentrate on one or two areas for their advanced classes to achieve depth, but they are not required to do so. Faculty advisors are available to assist students in their selection.

Online Learning Options

Some courses in this degree are available for review and playback via the CDM Course Online playback system (COL). If a course is COL-enabled, any student registered in the course has access to the course playback. Students are strongly encouraged to utilize the COL resource wherever available. Some undergraduate courses are offered online. However, CDM currently does not offer any undergraduate program completely online. For more information on online learning at CDM visit the Online Learning page.
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<td>Required</td>
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<tr>
<td>Senior Year</td>
</tr>
<tr>
<td>Capstone</td>
</tr>
<tr>
<td>CSC 394 or MAT 398 or GPH 395</td>
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**Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.**

The representation of the following **Course Requirements** on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

**First Year**

- **CSC 241** Introduction to Computer Science I
- **CSC 242** Introduction to Computer Science II
- **CSC 224** Java for Programmers
In addition, students must complete one of the following three-course sequences:

**Calculus Sequence (option 1)**
- MAT 150  Calculus I
- MAT 151  Calculus II
- MAT 152  Calculus III

**Calculus for Mathematics and Science Majors Sequence (option 2)**
- MAT 160  Calculus for Mathematics and Science Majors I
- MAT 161  Calculus for Mathematics and Science Majors II
- MAT 162  Calculus for Mathematics and Science Majors III

**Calculus with Scientific Applications Sequence (option 3)**
- MAT 170  Calculus I with Scientific Applications
- MAT 171  Calculus II with Scientific Applications
- MAT 172  Calculus III with Differential Equations

**Second Year**
- CSC 383  Data Structures and Algorithms in Java
- or CSC 393  Data Structures in C++
- CSC 373  Computer Systems I
- CSC 374  Computer Systems II
- MAT 140  Discrete Mathematics I
- MAT 141  Discrete Mathematics II
- MAT 260  Multivariable Calculus I

6 Liberal Studies

**Third Year**
- MAT 262  Linear Algebra

4 Liberal Studies
- 2 CDM Major Electives
- 2 MAT Major Electives
- 3 Open Electives

**Fourth Year**
- CSC 321  Design and Analysis of Algorithms
- CSC 394  Software Projects (Capstone)
- or GPH 395  Computer Graphics Senior Project (Capstone)
- or MAT 398  Senior Capstone Seminar (Capstone)

3 Liberal Studies
- 1 CDM Major Elective
- 1 MAT Major Elective
- 1 CDM or MAT Major Elective
- 4 Open Electives

**Major Electives**

Students must earn a grade of C- or higher in all major elective courses.

Of the 7 Major Field electives courses, 3 must be taken from the CDM Major Electives List, 3 must be taken from the MAT Major Electives List, and 1 could be taken from either lists.

Major Electives can be chosen from the grouped list below. It is recommended that students concentrate on one or two areas for their advanced classes to achieve depth, but they are not required to do so. Students are strongly encouraged to discuss course selection with an advisor. Students may wish to arrange with a professor to take an independent study or a research experience (MAT 399 or CSC 399 or IT 300) in order to explore a subject more deeply.
than is possible in a scheduled course.

**Theory of Computation**

The courses in the theory area explore the mathematical and logical foundations of computer science.

- MAT 302 Combinatorics
- MAT 303 Theory of Numbers
- MAT 351 Probability and Statistics I
- MAT 310 Abstract Algebra I
- MAT 311 Abstract Algebra II
- MAT 312 Abstract Algebra III
- MAT 335 Real Analysis I
- MAT 372 Logic and Set Theory
- CSC 235 Problem Solving
- CSC 327 Problem Solving for Contests
- CSC 333 Cryptology
- CSC 344 Automata Theory and Formal Grammars
- CSC 347 Concepts of Programming Languages
- CSC 348 Introduction to Compiler Design
- CSC 387 Operations Research I: Linear Programming
  or MAT 387 Operations Research I: Linear Programming
- CSC 389 Theory of Computation

**Computational Methods Area**

The computational methods area investigates quantitative and computational methods in computer science.

- CSC 331 Scientific Computing
- CSC 385 Numerical Analysis
  or MAT 385 Numerical Analysis I
- CSC 386 Advanced Numerical Analysis
  or MAT 386 Numerical Analysis II
- MAT 330 Methods of Computation and Theoretical Physics I
- MAT 331 Methods of Computation and Theoretical Physics II
- MAT 384 Mathematical Modeling

**Artificial Intelligence**

For students with an interest in the computational relations between syntax and semantics.

- CSC 380 Foundations of Artificial Intelligence
- CSC 357 Expert Systems
- CSC 358 Symbolic Programming

**Data Analysis Area**

For students who are interested in statistical and computational analysis of data. Many of the courses in this area require the student to take MAT 351-353.

- CSC 328 Data Analysis for Experimenters
- CSC 334 Advanced Data Analysis
  or MAT 354 Multivariate Statistics
- CSC 332 Simulation and Modeling
  or MAT 359 Simulation and Models and the Monte Carlo Method
- CSC 367 Introduction to Data Mining
- MAT 261 Multivariate Calculus II
- MAT 351 Probability and Statistics I
MAT 352  Probability and Statistics II
MAT 353  Probability and Statistics III
MAT 355  Stochastic Processes
MAT 357  Nonparametric Statistics
MAT 370  Advanced Linear Algebra
MAT 356  Applied Regression Analysis
MAT 358  Applied Time Series and Forecasting

Graphics Area
The graphics courses are intended for students who want to study the technical and mathematical foundations of computer graphics and animation.

MAT 337  Complex Analysis
MAT 261  Multivariable Calculus II
CSC 385  Numerical Analysis
or MAT 385  Numerical Analysis I
GPH 211  Perceptual Principles for Digital Environments I
GPH 212  Perceptual Principles for Digital Environments II
GPH 325  Survey of Computer Graphics
GPH 329  Computer Graphics Development II
GPH 336  Smooth Surface Modeling for Graphics and Animation
GPH 372  Principles of Computer Animation

Computer Vision Area
Computer vision studies the mathematical and algorithmic underpinnings of image analysis and image processing.

MAT 261  Multivariable Calculus II
MAT 335  Real Analysis I
MAT 381  Fourier Analysis and Special Functions
MAT 370  Advanced Linear Algebra
MAT 384  Mathematical Modeling
CSC 381  Introduction to Digital Image Processing
CSC 382  Applied Image Analysis
CSC 384  Introduction to Computer Vision

Open Electives
Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a CDM minor or other minors are normally credited as open electives.

Degree Requirements
Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
- between 3.700 and 3.849 will be graduated magna cum laude
- of at least 3.850 will be graduated summa cum laude
Network Technologies

In the **BS in Network Technology** students will learn the theory and practice of designing, deploying and managing both wired and wireless networks technologies, including broadband Internet access technologies, interconnection technologies, network convergence, and network security. The program provides a combined emphasis on both foundational theory and hands-on experience that allow students to design, configure, and manage equipment and services in a variety of network environments. Students gain experience with network devices and servers in lab facilities focused on enterprise network, security, and multimedia network services. The Network Technology program provides students with expertise in:

- The protocols and services that enable Internet and LAN services
- The design and management of local and wide area network
- Voice and data network convergence through VoIP technologies
- Wireless networks (WiFi, WiMAX, Cellular, and 3G)
- Network security

Online Learning Options

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Concentrations

**Standard**

This concentration is geared toward students who are considering careers in network design, system management, service deployment, and product/vendor evaluation. The course work focuses on network technologies, protocol studies, device configuration, and network design.

**Network Security**

This concentration is geared toward students who are considering careers in network security, security administration, and security infrastructure design. The course work focuses on network security technologies, best practices in security design, and security management.

**Application Development**

This concentration is geared toward students who are considering careers in application development for network services with course work focused on software development and network programming, in addition to network technologies and protocols.

**Standard Concentration**

The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BS in Network Technology (Standard
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</table>

**Sophomore Year**

| Multiculturalism in the US | LSP 200 |

**Junior Year**

| Experiential Learning | Required |

**Senior Year**

| Capstone | TDC 376 |

**Learning Domains**

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**Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.**

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The representation of these course requirements on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

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<tr>
<td>6 Liberal Studies</td>
<td></td>
</tr>
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Second Year
IT 223 Data Analysis
TDC 311 Computers in Telecommunications Systems
TDC 362 Principles of Data Communications
WRD 204 Technical Writing
or WRD 301 Writing in Workplace Contexts
CSC 211 Programming in Java I
and CSC 212 Programming in Java II
or CSC 261 Programming Languages I: C/C++
and CSC 262 Programming Languages II: C/C++
6 Liberal Studies

Third Year
TDC 363 Introduction to Local Area Networks
TDC 364 Voice Communications Technologies
TDC 365 Network Interconnection Technologies
CMNS 212 Small Group Communication
or CMNS 220 Public Speaking
4 Liberal Studies
1 Major Elective
3 Open Electives

Fourth Year
TDC 376 Network Project (Capstone)
3 Liberal Studies
2 Major Electives
6 Open Electives

Major Electives

Major electives can be chosen from any 300 level TDC courses.

Students must earn a grade of C- or higher in all major elective courses.

Open Electives

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Degree Requirements

Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

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For DePaul's policy on repeat courses and a complete list of academic policies see the
Network Security Concentration

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### Sophomore Year

**Multiculturalism in the US**

| LSP 200                       |                   |

### Junior Year

**Experiential Learning**

<table>
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### Senior Year

**Capstone**

| TDC 376 |

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6 Liberal Studies

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<td>TDC 362</td>
<td>Principles of Data Communications</td>
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6 Liberal Studies

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7 Liberal Studies

1 Major Elective

### Fourth Year

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<td>TDC 379</td>
<td>Telecommunication and Network Security Practicum</td>
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1 Major Elective

6 Open Electives

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### Major Electives

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Students must earn a grade of C- or higher in all major elective courses.

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### Open Electives

Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a **CDM minor or other minors** are normally credited as open electives.

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### Degree Requirements

Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:
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For DePaul's policy on repeat courses and a complete list of academic policies see the DePaul Undergraduate Handbook.

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**Application Development Concentration**

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### Sophomore Year

| Multiculturalism in the US | LSP 200 |

### Junior Year

| Experiential Learning | Required |

### Senior Year

| Capstone | TDC 376 |

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**First Year**
- IT 130 The Internet and the Web
- IT 201 Introduction to Information Systems
- IT 240 Introduction to Desktop Databases
- IT 263 Applied Networks and Security
- IT 231 Web Development I
- MAT 140 Discrete Mathematics I

6 Liberal Studies

**Second Year**
- IT 223 Data Analysis
- TDC 311 Computers in Telecommunications Systems
- TDC 362 Principles of Data Communications
- CSC 211 Programming in Java I
- and CSC 212 Programming in Java II
- or CSC 261 Programming Languages I: C/C++
- and CSC 262 Programming Languages II: C/C++
- WRD 204 Technical Writing
- or WRD 301 Writing in Workplace Contexts

6 Liberal Studies

**Third Year**
- TDC 363 Introduction to Local Area Networks
- TDC 365 Network Interconnection Technologies
- TDC 368 Network Programming
- CSC 309 Object-Oriented Programming in C++
- or CSC 224 Java for Programmers
- CSC 383 Data Structures and Algorithms in Java
- or CSC 393 Data Structures in C++
- CMNS 212 Small Group Communication
- or CMNS 220 Public Speaking

4 Liberal Studies
1 Major Elective
1 Open Elective

**Fourth Year**
- TDC 375 Network Protocols
- TDC 376 Network Project (Capstone)

3 Liberal Studies
1 Major Elective
6 Open Electives

**Major Electives**

Major electives can be chosen from any 300 level TDC courses.
Students must earn a grade of C- or higher in all major elective courses.

Open Electives

Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a CDM minor or other minors are normally credited as open electives.

Degree Requirements

Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
- between 3.700 and 3.849 will be graduated magna cum laude
- of at least 3.850 will be graduated summa cum laude

For DePaul's policy on repeat courses and a complete list of academic policies see the DePaul Undergraduate Handbook
About the School of Cinema and Interactive Media

The School of Cinema and Interactive Media (CIM) houses CDM's creative degrees. With an emphasis on all aspects of production, students can earn degrees that prepare them for work in digital cinema, animation, computer game development, and interactive media.

Faculty

LISA BARCY, M.A.
Instructor
Columbia College

ROBIN BURKE, Ph.D.
Associate Professor
Northwestern University

SHAYNA CONNELLY, M.F.A.
Instructor
Columbia College

GREGG ELDER, M.A.
Instructor
Columbia College

RONALD ELTANAL, M.F.A.
Associate Professor
University of Southern California

SCOTT ERLINDER, M.F.A.
Assistant Professor
Columbia College

DANA HODGDON, M.A.
Associate Professor
Northwestern University

MATT IRVINE, M.F.A.
Associate Professor
Columbia College

JOSHUA JONES, M.F.A.
Assistant Professor
University of Southern California

STEVEN JONES, B.S.
Producer in Residence
Illinois Institute of Technology

EDWARD KEENAN, M.S.
Instructor
University of Illinois at Chicago
College of Computing and Digital Media - Undergraduate Studies School of Cinema and Interactive Media (CIM) Liberal Studies Program and Modern Language Option

**Liberal Studies Program and Modern Language Option**

The Liberal Studies Program is the common curriculum taken by all students in the seven undergraduate colleges of DePaul University. Overall, the Program is designed to develop students writing abilities, computational and technological proficiencies, and critical and creative thinking skills.
Each major in the University has unique Liberal Studies requirements.

Please consult the Liberal Studies catalog for your relevant requirements as a CDM student as well as for information about the Modern Language Option.

College of Computing and Digital Media - Undergraduate Studies | School of Cinema and Interactive Media (CIM) | CDM Liberal Studies Courses

CDM Liberal Studies Courses

CDM offers dozens of courses in many domains of the Liberal Studies Program. You can experiment with Screenwriting, Digital Photography, Game Design, Computer Graphics and Programming and fulfill a requirement at the same time. Many of these courses also serve as gateway courses into more advanced CDM courses. Courses can be grouped in two lists:

- Liberal Studies Course Offered by CDM
- CDM Liberal Studies Courses Offer by CDM - Grouped by Topic

Click to view Restrictions for CDM Students

Liberal Studies Courses Offered by CDM

This list represents Liberal Studies Program (LSP) courses taught by CDM only. For a complete list of LSP courses, visit the Liberal Studies homepage.

- Arts and Literature
  - **ANI 101 Animation for Non-Majors**
    Course introduces a variety of basic animation techniques for cinema and gaming, such as hand-drawn, cutout, stop-motion and (very basic) 3D, with an emphasis on the use of computer technology.
  - **ANI 206 History of Animation**
    History of Animation: This course is an introduction to the history and development of the field of animation.
  - **DC 125 Digital Still Photography for Non-Majors**
    This course is an introduction to the history and aesthetics of still photography and to the concept of photography as a descriptive and interpretive artistic medium. Students studying photographs in this context will discover relationships between individual photographers choices and their own understanding of meaning. Students will learn the fundamental concepts necessary to shoot, edit, manipulate, and print digital still photographs.
  - **DC 120 Video Editing**
    Students analyze and assemble dramatic scenes under a variety of conditions and narrative strategies. Editing theories, techniques, and procedures, issues of continuity, effects, movement and sound are examined as they relate to the fundamentals of cinematic montage and visual storytelling. This class present a variety of topics and experiences that are designed to broaden the student's understanding of the art of cinematic storytelling and montage. Work on more advanced projects is integrated into the class as a means to an understanding of advanced editing tools and techniques.
  - **DC 201 Introduction to Screenwriting**
    This course focuses on narrative storytelling and encourages students to find their unique voices, while emphasizing the critical importance of working as part of a creative team.
  - **DC 205 Foundations of Cinema**
    Acquisition and computer representation of sound and image. Sound and video standards. Lossy and Lossless compression. Basic computer graphics and

- **DC 222 Story Structure in Cinema**
  This course focuses on the critical analysis of narrative structure in Cinema. Students will learn how to identify key story concepts and break down three act structure in finished films and scripts.

- **DC 233 Cinema & Art**
  This course will provide an overview of avant-garde film, video, animation and installation, and the relationship of these cinematic forms to Modern and Contemporary art.

- **DC 250 Working with Actors 1**
  This course is an introduction and examination of the collaborative process between the actor and director. Methods of study include lecture, discussion, assignments, and in-class acting exercises.

- **GAM 224 Introduction to Game Design**
  Students will learn about a game's "hook", its "high concept" and the crucial needs of marketing for a successful game design. Students will also learn to design a game's component pieces.

- **GPH 211 Perceptual Principles for Digital Environments I**
- **GPH 212 Perceptual Principles for Digital Environments II**
- **GPH 213 Perceptual Principles for Digital Environments III**
  These three foundational courses in computer animation take you through the process of creating 2-D and 3-D representations on the computer. The last course teaches you how to animate them!

- **Junior Experiential Learning Credit**

  - **CSC 298 Internship**
    Computer Science Internship in cooperation with local employers this course offers students the opportunity to integrate their academic experience with on-the-job training in computer related work areas.

  - **CSC 378 Software Projects for Community Clients**

  - **CSC 379 Technology Partnerships in Urban Schools**
    Students in this course will have the opportunity to assess urban community needs in the technology arena and develop skills in assisting and developing methods for bridging the digital divide that exists.

  - **DC 298 Internship in Media Production/Post-Production**
    This course offers students an excellent opportunity to gain professional experience, industry contacts, and referrals while still in school. Opportunities in post-production, motion picture production, advertising, television, animation, motion graphics and interactive media. Admission to the program requires consent of internship course instructor. Current work experience plus classroom time is required. Supervisor evaluation will contribute to the final grade.

  - **DC 380 Project Bluelight**
    Production of a feature-length digital motion picture written by students or faculty within the Digital Cinema program.

  - **GPH 360 Modeling Spaces**
    The digital design and modeling of environmental spaces with attention to human use parameters.

  - **IT 300 Research Experience**
    This course involves the exploration of a research topic under the supervision of a research advisor.

  - **IT 398 Topics in Global Information Technology**
    This course focuses on current topics in the information and communications technologies that together support the “networked world.” Sample topics are global software development and deployment, global data and information management, and cross-cultural project management for information systems. The course may be offered for variable credit hours (2, 4, 8, 16, and 32).

- **Scientific Inquiry**

  - **CSC 200 Survey of Computing**
    Learn about careers using computers and pick up some skills to help you manage
Learn about careers using computers and pick up some skills to help you manage your own PC or network!

- **CSC 210 Introduction to Computing**
  A brief history of computers and an introduction to programming.

- **CSC 211 Programming in Java I**
- **CSC 212 Programming in Java II**
  Two courses in programming JAVA, a cross-platform, web-enabled language.

- **CSC 233 Codes and Ciphers**
  A history of code making and breaking and the math and (computer) science behind it

- **CSC 235 Problem Solving**
  How do you solve a problem? In this course we discuss different problem solving techniques and strategies such as modeling, establishing subgoals, and searching and pruning.

- **CSC 239 Personal Computing**
  You will learn how to use Excel to analyze data and how to publish data and retrieve it from the World Wide Web.

- **CSC 261 Programming Languages I: C/C++**
- **CSC 262 Programming Languages II: C/C++**
  Two courses in programming C++

- **ECT 250 Internet, Commerce, and Society**
  Ever shop online? Learn the basics behind how these kinds of web sites function

- **IM 222 Information Visualization**
  This course discusses the basic problems and techniques of visualizing quantitative and qualitative data.

- **IT 130 The Internet and the Web**
  Learn to design your own web site!

- **IT 236 User Interface Development**

- **IT 240 Introduction to Desktop Databases**
  Learn introductory concepts in constructing databases and networking files.

- **IT 263 Applied Networks and Security**

- **TDC 361 Basic Communication Systems**
  Learn about how networks work and how they impact your daily life.

- **Scientific Inquiry: Lab**

  - **DC 274 Image, Optics and Cinematic Motion**
    Cinematography is the scientifically-grounded discipline of making lighting and camera choices in order to record moving images. This course deals with the basic mathematics, physics, and photochemistry that underlie cinematography and that motivate camera design and construction. A student who masters the foundations of cinematography through a mixture of lectures, readings, exercises, and labs will be able to evaluate and understand how motion-based recording choices affect perception of moving images they see every day.

  - **GPH 259 Design Geometry (cross-listed as ART 295)**
    Learn the basics of Computer Aided Design.

- **Self, Society, and the Modern World**

  - **CSC 223 The Impact of Computing Technology On Our Lives**
    This course will introduce students to an overview of social analysis techniques and the theories of social change.

  - **DC 105 Digital Media Literacies**
    This course is designed to help students develop an informed, critical and practical understanding of new communication media, including ways to read, write and produce in a digital environment.

  - **DC 235 Adaptation: The Cinematic Recrafting of Meaning**
    This course explores contemporary cinematic adaptations of literature and how recent reworkings in film open viewers up to critical analysis of the cultural practices surrounding the promotion and reception of these narratives.

  - **IS 208 IT, Economy and Society**
    This course broadly surveys the history of IT applications and information systems from the historical perspective, and critically assesses the digital
impact on industry, the economy, workers, citizens, social class and the future.

- **IT 201 Introduction to Information Systems**
  This course examines how various types of computer-based information systems form a critical part of modern organizations, how they work, and how they impact workers, organizations and the economy.

- **Understanding the Past: Intercontinental/Comparative**
  - **GAM 206 History of Games**
    This class will examine particular games and game genres in their historical context using a case study format.
  - **GPH 205 Historical Foundations of Visual Technology**
    This course is a survey of the development, application and meaning of visual technologies in a wide range of world cultures from pre-history to the present.

- **Philosophical Inquiry**
  - **CSC 208 The Computer and Social Responsibility**
    This course will research the impact technology has had in various areas of our lives, the new responsibilities technology presents, and our ability to deal with these changes in an ethical manner.
  - **DC 227 Film Philosophy**
    This course is a seminar on the philosophical analysis of film art, with an emphasis on the ways in which it creates meaning through techniques that define a formal structure. There is a particular focus on aesthetic problems about appearance and reality, literacy and visual effects, communication and alienation through film technology.
  - **DC 228 or GAM 228 or IT 228 Ethics in Computer Games and Cinema**
    Societies function based on normative ethics utilizing common sense to distinguish between ethical and unethetical behavior. Most of us are not aware of the underlying theories when arriving at ethical judgments about right and wrong. However, the fast pace of progress in information technologies and digital entertainment creates an environment, in which ethical challenges are particularly complex. In the eyes of many, games and movies are violent, offensive and immoral. This course will concentrate on analyzing the impact of digital entertainment on an individual and society. Implications of certain values embedded in games and movies will be discussed. Elements of the ethical code of conduct for a game or movie creator will be formulated. The issue of balancing individual creativity vs. cultural impact, particularly on children, will be discussed.

**CDM Liberal Studies Courses Offered by CDM - Grouped by Topic**

- **The Internet and How It Works**
  - **CSC 200 Survey of Computing: Scientific Inquiry: Elective**
    Learn about Careers using computers and pick up some skills to help you manage your own PC or network!
  - **CSC 210 Introduction to Computing: Scientific Inquiry: Elective**
    A brief history of computers and an introduction to programming.
  - **CSC 211 Programming in Java I: Scientific Inquiry: Elective**
  - **CSC 212 Programming in Java II: Scientific Inquiry: Elective**
    Two courses in programming JAVA, a cross-platform, web-enabled language.
  - **CSC 261 Programming Languages I: C/C++**
  - **CSC 262 Programming Languages II: C/C++**
    Two courses in programming C++.
  - **ECT 250 Internet, Commerce, and Society: Scientific Inquiry: Elective**
    Ever shop at Gap.com? Learn the basic behind how these kinds of web sites function.
  - **HCI 201 Multimedia and the World Wide Web: Scientific Inquiry: Quantitative**
Overview of the Web, its origins and capabilities. Create your own sample web page.

- **IT 130 The Internet and the Web**
  Learn to Design Your Own Website
- **IT 263 Applied Networks and Security**
  Programming and Basic Computer Know-How
- **TDC 361 Basic Communication Systems**

- **The Computer and Society**
  
  - **CSC 208 The Computer and Social Responsibility**
    This course will research the impact technology has had in various areas of our lives, the new responsibilities technology presents, and our ability to deal with these changes in an ethical manner
  
    This course will introduce students to an overview of social analysis techniques and the theories of social change.
  
  - **IS 208 IT Economy and Society**
    This course broadly surveys the history of IT applications and information systems from the historical perspective, and critically assesses the digital impact on industry, the economy, workers, citizens, social class and the future.
  
  - **IT 201 Introduction to Information Systems**
    This course examines how various types of computer-based information systems form a critical part of modern organizations, how they work, and how they impact workers, organizations and the economy.
  
  - **DC 228 or GAM 228 or IT 228 Ethics in Computer Games and Cinema**
    Societies function based on normative ethics utilizing common sense to distinguish between ethical and unethical behavior. Most of us are not aware of the underlying theories when arriving at ethical judgments about right and wrong. However, the fast pace of progress in information technologies and digital entertainment creates an environment, in which ethical challenges are particularly complex. In the eyes of many, games and movies are violent, offensive and immoral. This course will concentrate on analyzing the impact of digital entertainment on an individual and society. Implications of certain values embedded in games and movies will be discussed. Elements of the ethical code of conduct for a game or movie creator will be formulated. The issue of balancing individual creativity vs. cultural impact, particularly on children, will be discussed.

- **Computer Graphics and Motion Technology**
  
  - **ANI 101 Animation for Non-Majors**
    Course introduces a variety of basic animation techniques for cinema and gaming, such as hand-drawn, cutout, stop-motion and (very basic) 3D, with an emphasis on the use of computer technology
  
  - **ANI 206 History of Animation**
    History of Animation: This course is an introduction to the history and development of the field of animation
  
  - **GPH 205 Historical Foundations of Visual Technology**
    This course is a survey of the development, application and meaning of visual technologies in a wide range of world cultures from pre-history to the present.
  
  - **GPH 211 Perceptual Principles for Digital Environments I : Arts and Literature**
  
  - **GPH 212 Perceptual Principles for Digital Environments II : Arts and Literature**
  
  - **GPH 213 Perceptual Principles for Digital Environments III : Arts and Literature**
    These three foundational courses in computer animation take you through the process of creating 2-D and 3-D representations on the computer. The last course teaches you how to animate them
  
  - **GPH 259 Design Geometry (cross-listed as ART 295)**
    Learn the basics of Computer Aided Design.
  
  - **GPH 360 Modeling Spaces**
    The digital design and modeling of environmental spaces with attention to
The digital design and modeling of environmental spaces with attention to human use parameters

- **Data Analysis and Retrieval**
  - **CSC 235 Problem Solving**
    How do you solve a problem? In this course we discuss different problem solving techniques and strategies such as modeling, establishing subgoals, and searching and pruning
  - **CSC 239 Personal Computing: Scientific Inquiry: Quantitative**
    You will learn how to use Excel to analyze data and how to publish data and retrieve it from the World Wide Web.
  - **IT 223 Data Analysis**
  - **IT 240 Introduction to Desktop Databases: Personal Computing for Programmers: Scientific Inquiry: Elective**
    Learn introductory concepts in constructing databases and networking files.
  - **HCI 201 Multimedia and the World Wide Web: Scientific Inquiry: Quantitative**
    Overview of the Web, its origins and capabilities. Create your own sample web page
  - **ECT 250 Internet, Commerce, and Society: Scientific Inquiry: Elective**
    Ever shop at Gap.com? Learn the basic behind how these kinds of web sites function
  - **IT 130 The Internet and the Web (formerly ECT 270): Scientific Inquiry: Elective**
    Learn to design your own complex web site!

- **Codes, Ciphers and Computer Intelligence**
  - **CSC 233 Codes and Ciphers : Scientific Inquiry: Elective**
    A history of code making and breaking and the math and (computer) science behind it
  - **CSC 250 Computers and Human Intelligence : Scientific Inquiry: Quantitative**
    Study how computers are designed to think like people

- **Digital Cinema and Game Development**
  - **ANI 101 Animation for Non-Majors**
    Course introduces a variety of basic animation techniques for cinema and gaming, such as hand-drawn, cutout, stop-motion and (very basic) 3D, with an emphasis on the use of computer technology.
  - **ANI 206 History of Animation**
    History of Animation: This course is an introduction to the history and development of the field of animation.
  - **DC 105 Digital Media Literacies**
    This course is designed to help students develop an informed, critical and practical understanding of new communication media, including ways to read, write and produce in a digital environment.
  - **DC 120 Video Editing**
    Students analyze and assemble dramatic scenes under a variety of conditions and narrative strategies. Editing theories, techniques, and procedures, issues of continuity, effects, movement and sound are examined as they relate to the fundamentals of cinematic montage and visual storytelling. This class present a variety of topics and experiences that are designed to broaden the student's understanding of the art of cinematic storytelling and montage. Work on more advanced projects is integrated into the class as a means to an understanding of advanced editing tools and techniques.
  - **DC 125 Digital Still Photography for Non-Majors**
    This course is an introduction to the history and aesthetics of still photography and to the concept of photography as a descriptive and interpretive artistic medium. Students studying photographs in this context will discover relationships between individual photographers choices and their own understanding of meaning. Students will learn the fundamental concepts necessary to shoot, edit, manipulate, and print digital still photographs.
  - **DC 201 Introduction to Screenwriting**
This course focuses on narrative storytelling and encourages students to find their unique voices, while emphasizing the critical importance of working as part of a creative team.

- **DC 205 Foundations of Cinema**

- **DC 222 Story Structure in Cinema**
  This course focuses on the critical analysis of narrative structure in Cinema. Students will learn how to identify key story concepts and break down three act structure in finished films and scripts.

- **DC 233 Cinema & Art**
  This course will provide an overview of avant-garde film, video, animation and installation, and the relationship of these cinematic forms to Modern and Contemporary art.

- **DC 235 Adaptation: The Cinematic Recrafting of Meaning**
  This course explores contemporary cinematic adaptations of literature and how recent re-workings in film open viewers up to critical analysis of the cultural practices surrounding the promotion and reception of these narratives.

- **DC 250 Working with Actors 1**
  This course is an introduction and examination of the collaborative process between the actor and director. Methods of study include lecture, discussion, assignments, and in-class acting exercises.

- **GAM 206 History of Games**
  This course will examine particular games and game genres in their historical context using a case study format

- **GAM 224 Introduction to Game Design**
  Students will learn about a game's "hook", its "high concept" and the crucial needs of marketing for a successful game design. Students will also learn to design a game's component pieces.

### Visualization

- **IM 222 Information Visualization**
  This course discusses the basic problems and techniques of visualizing quantitative and qualitative data.

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**Restrictions for CDM Students**

A CDM student can take any CDM course approved for liberal studies credit and use it to satisfy a domain of the liberal studies program (LSP) provided the course is NOT required as part of the student's major.

A CDM student can not count a course as a liberal studies requirement and a major requirement. No double counting is allowed for CDM classes by CDM students.

**Example 1**

- A CGMT student cannot use GPH 211 to satisfy the arts and literature requirement of LSP, as GPH 211 is required by all CGMT tracks.
- An ECT major CAN take GPH 211 to satisfy the arts and literature requirement of the LSP. The course qualifies for a liberal studies program domain that is required by the student's major.

**Example 2**

- A CS student CAN take GPH 259 to satisfy the Scientific Inquiry (SI)-Quantitative-Lab requirement of LSP because the course is not required by the CS major AND it counts for SI-Lab which is a required domain for CS students.
- A CS student CANNOT take CSC 250 to satisfy SI because, although the course is not required by any of our programs, it qualifies for SI-quantitative (not Lab) which is NOT a required domain for CDM students.
Example 3

A CS student takes GPH 211 for arts and literature LSP. Although GPH 211 is allowed as an elective even if it is not a 300 level course, the student CANNOT count the course both as satisfying an LSP domain AND as an elective for the CS program.

Combined Bachelor/Master Degrees

Academically gifted students may choose to enroll in the combined degree program. This dual degree program allows students to combine any CDM bachelor’s degree with any CDM master’s degree following the structure outlined below.

Program Structure

Students in the combined degree program take a maximum of three graduate level courses that count toward both their bachelor’s and master’s degree requirements. Students may enroll in graduate level coursework in the junior and senior year only. Students in the combined degree program will receive the bachelor's degree after meeting all graduation requirements including the standard 192 undergraduate credit hours. The master's degree is awarded after the student completes 10 additional graduate courses (40 credit hours), instead of the standard 13 courses (52 credit hours).

Admission Criteria

- Minimum of 6 courses (24 credit hours) completed at DePaul
- GPA of 3.3 or higher in courses taken at DePaul
- Endorsement of faculty advisor

In order to apply for the BS/MS combined degree program, your faculty advisor must send an e-mail recommendation to Becky Krochmal. The recommendation should include your full name, student ID number, and the BS and MS degrees you wish to apply for.

Bachelor of Arts in Computing students who are enrolled via the School for New Learning are eligible for this program. Interested students who meet the admission criteria for a combined degree should contact Kenn Skorupa at SNL or Becky Krochmal at CDM for more information.

Maintaining Good Standing

- Each student's cumulative GPA and course grades will be reviewed after each Autumn, Winter, and Spring Quarter
- The student and Faculty Advisor will be notified when the student's cumulative GPA falls below 3.3 or when the student receives less than a C- in graduate level course (X-course)
- If a student's cumulative GPA falls below 3.3, the student must earn a term GPA of 3.3 or above in the following quarter to stay active. If the student does not achieve a 3.3 term GPA, then the student will be dismissed from the combined program and resume the traditional BA/BS. As long as the student’s cumulative GPA is below 3.3, the student must continue to achieve at least a 3.3 term GPA in all following quarters or face dismissal. If, at any point, the student's cumulative GPA is once again 3.3 or higher, term requirements no longer apply.
- If a student does not maintain good standing, they will be dismissed from the Combined Degree and returned to normal undergraduate degree seeking status. Any graduate courses passed before dismissal will not be counted toward graduate credit and may not be retaken (if the student does pursue graduate study, other graduate courses must be substituted). If dismissed students wish to apply to a CDM graduate
Bachelor's Degree to Master's Degree Transition

If, upon completion of the bachelor's degree, the student did not meet all prerequisites for the master's degree, then the student will need to complete (course, test or waiver) the missing prerequisites for the chosen master's Degree. If, while in the undergraduate degree phase, the student receives less than a C- in graduate level course (X-course), the X-course cannot count towards the MS/MA Degree.

Designing a Course of Study

It is extremely important that the student and faculty advisor work together on a course of study immediately upon admission to the Combined Degree Program.

This course of study may include which undergraduate classes to avoid taking in order to take the graduate version. Failure to put together a solid plan can lead to extra coursework and a lengthening of the Combined Degree program.

It is advisable for the student and advisor to enter the proposed plan of study in the student communication record on the CDM intranet so it is available to the student and CDM faculty and staff.

Registering for Master's Degree Courses

Students will register for "Combined Degree Course" each time they wish to take a Master's level course using the Combined Degree Registration Form which must be signed by their faculty advisor.

Minors

A minor is a combination of courses that provides a cohesive introduction to an area of study. Typically, courses taken to satisfy minor field requirements are credited as open electives; however, there are some instances where minor field courses may be used for credit in other areas of the students curriculum. Grades for all courses, taken to fulfill a minor field requirement must be C or above. Grades of C- may be accepted for credit in the minor provided the minor GPA is 2.0 or above. A minimum of one-half of the courses required for a minor must be completed at DePaul University.

MINORS IN THE COLLEGE OF COMMERCE

Students enrolled in the College of Computing and Digital Media (CDM) may obtain a minor in Accounting, Business Administration, E-Business, Economics, Management, MIS, Marketing, and Pre-MBA. Please see the College of Commerce Section for Minor Requirements.

MINORS IN THE COLLEGE OF LIBERAL ARTS AND SCIENCES

Students enrolled in the College of Computing and Digital Media (CDM) may obtain a minor through the College of Liberal Arts and Sciences. Most Liberal Arts and Science departments offer minor concentrations of study. In general, a minor in a Liberal Arts and Sciences discipline consists of a set of introductory courses plus another set of more specialized courses. Most minors require six courses, some of which may also be used for credit in the Liberal Studies Program. For a complete list of minors offered through the College of Liberal Arts and Sciences, please consult that section of this online Bulletin.

MINORS IN THE COLLEGE OF COMPUTING AND DIGITAL MEDIA
Computer technology is an omnipresent part of our world, used in academic disciplines from physics to history to geography. **CDM offers several minors that will appeal to all DePaul University students.**

**Political science** and **geography** majors can pursue a minor in Data Analysis, Databases, or Data Visualization, which is important to understanding how to analyze census or GPS data.

**Communications** majors may be interested in Digital Cinema which will give you skills in creating videos for advertising.

Art majors interested in a career in graphics programming, animation or design may be interested in CDM’s tech-focused minors in Animation or Computer Graphics Software Development.

An academic foundation in E-Commerce Technology, Networks or Information Systems can give Commerce students an edge in a tough job market.

There are other examples too numerous to mention. So if you have questions or want advice on what minor is best for you, can email our CDM Undergraduate Services team: gocdm@cdm.depaul.edu or call them at: 312-362-8714.

**Policies for Academic Minors**

Students must:

1. earn at least a grade of C- in each minor course and a GPA of no less than 2.0 for all courses in the minor;
2. earn at least a cumulative GPA of 2.0 for all courses applied to the minor;
3. not select the pass/fail option for courses in the minor;
4. meet the following residency requirement: no more than 50% of the requirements of a minor may be fulfilled by transfer credits, AP credit, IB credit of CLEP credit.

Finally, students cannot earn a minor in their major program. Courses required to fulfill a minor are determined by the unit in which the minor resides.

**CDM Minors for CDM Students**

To obtain a minor in CDM when the major is also in CDM:

1. Satisfy all requirements for the major
2. Satisfy all requirements for the minor
3. Students must take at least 6 courses in the minor area that do not count towards their CDM major

**Note:** If you have already taken some of the courses listed under your minor on this page, work with your advisor to choose other courses within the same program area, ie. NT minor would look under NT major courses and Computer Graphics Software Development would look under Computer Graphics Courses, in order to have 6 distinct courses.

- Animation Minor
- Computer Graphics Software Development
- Computer Science
- Data Analysis and Data Mining
- Database
- Data Visualization Development
- Digital Cinema
- E-Commerce Technology
- Game Design
- Game Programming
- Interactive Media
- Information and Computing in the Modern World
- Information Systems
- Information Technology
- Network Technologies
- Screenwriting
- Security
- Security in the Electronic World
- Software Engineering
- Sound Design
- Visual Computing
- Visual Effects

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**CDM Minor Requirements**

**Animation Minor**

ANI 101 Animation for Non-Majors  
**or** ANI 201 (not both) Animation I  
ANI 230 3D Design & Modeling  
ANI 231 3D Animation  
ANI 206 History of Animation  

3 courses from the following list: (at least 1 must be ANI)  
DC 201 Introduction to Screenwriting  
DC 210 Digital Cinema Production I  
DC 220 Editing I  
Any ANI course

**Computer Graphics Software Development Minor**

**Liberal Studies**

GPH 211 Perceptual Principles for Digital Environments I  
GPH 212 Perceptual Principles for Digital Environments II  

**Course Requirements**

CSC 261 Programming Languages I: C/C++  
CSC 262 Programming Languages II: C/C++  
CSC 393 Data Structures in C++  
GPH 329 Computer Graphics Development II  
GPH 339 Advanced Rendering Techniques  
GPH 372 Principles of Computer Animation

**Computer Science Minor**

CSC 241 Introduction to Computer Science I  
**and** CSC 242 Introduction to Computer Science II  
**and** CSC 224 Java for Programmers  
**or**  
CSC 211 Programming in Java I  
**and** CSC 212 Programming in Java II  
**and** CSC 309 Object-Oriented Programming in C++  
**or**  
CSC 261 Programming Languages I: C/C++  
**and** CSC 262 Programming Languages II: C/C++  
**and** CSC 224 Java for Programmers  
CSC 393 Data Structures in C++
or CSC 383  Data Structures and Algorithms in Java
MAT 140  Discrete Mathematics I
CSC 373  Computer Systems I
CSC 374  Computer Systems II

Data Analysis and Data Mining Minor

IT 240  Introduction to Desktop Databases
IT 223  Data Analysis
CSC 324  Data Analysis and Statistical Software II
CSC 367  Introduction to Data Mining
CSC 334  Advanced Data Analysis
2 CDM Electives

Database Minor

CSC 211  Programming in Java I
and CSC 212  Programming in Java II
IT 223  Data Analysis
IT 240  Introduction to Desktop Databases
CSC 352  Database Programming
CSC 367  Introduction to Data Mining
1 CDM Elective

Data Visualization Development Minor

Liberal Studies
GPH 211  Perceptual Principles for Digital Environments I
GPH 212  Perceptual Principles for Digital Environments II

Course Requirements
CSC 261  Programming Languages I: C/C++
CSC 262  Programming Languages II: C/C++
CSC 323  Data Analysis
CSC 393  Data Structures in C++
GPH 329  Computer Graphics Development II
GPH 372  Principles of Computer Animation
GPH 380  Visualization

Digital Cinema Minor

DC 205  Foundations of Cinema
DC 225  Digital Still Photography
DC 201  Introduction to Screenwriting
DC 220  Editing I
3 courses from the following list:
ANI 101  Animation for Non-Majors
DC 210  Digital Cinema Production I
DC 270  Topics in Digital Cinema
GAM 224  Introduction to Game Design
DC 215  Digital Sound Design
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC 275</td>
<td>Cinematography</td>
</tr>
<tr>
<td>DC 310</td>
<td>Digital Cinema Production II</td>
</tr>
<tr>
<td>DC 320</td>
<td>Editing II</td>
</tr>
<tr>
<td>DC 389</td>
<td>The Big Picture: The Entertainment Industry</td>
</tr>
</tbody>
</table>

### E-Commerce Technology Minor

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 130</td>
<td>The Internet and the Web</td>
</tr>
<tr>
<td>CSC 211</td>
<td>Programming in Java I</td>
</tr>
<tr>
<td>CSC 212</td>
<td>Programming in Java II</td>
</tr>
<tr>
<td>IT 230</td>
<td>Building Internet Applications</td>
</tr>
<tr>
<td>ECT 330</td>
<td>Advanced Internet Application Development</td>
</tr>
<tr>
<td>IM 210</td>
<td>Introduction to Human-Computer Interaction</td>
</tr>
</tbody>
</table>

1 course from the following list:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECT 355</td>
<td>Internet Systems: Collaboration, Commerce, and Media</td>
</tr>
<tr>
<td>ECT 360</td>
<td>Introduction to XML</td>
</tr>
<tr>
<td>ECT 365</td>
<td>Web Server Operations</td>
</tr>
</tbody>
</table>

### Game Design Minor

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC 201</td>
<td>Introduction to Screenwriting</td>
</tr>
<tr>
<td>ANI 105</td>
<td>Intro to Visual Design</td>
</tr>
<tr>
<td>ANI 101</td>
<td>Animation for Non-Majors</td>
</tr>
<tr>
<td>or ANI 201</td>
<td>Animation I</td>
</tr>
<tr>
<td>ANI 230</td>
<td>3D Design &amp; Modeling</td>
</tr>
<tr>
<td>GAM 224</td>
<td>Introduction to Game Design</td>
</tr>
<tr>
<td>or GAM 226</td>
<td>Game Design for Majors</td>
</tr>
<tr>
<td>GAM 244</td>
<td>Game Development I</td>
</tr>
<tr>
<td>GAM 245</td>
<td>Game Development II</td>
</tr>
</tbody>
</table>

### Game Programming Minor

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAM 224</td>
<td>Introduction to Game Design</td>
</tr>
<tr>
<td>or GAM 226</td>
<td>Game Design for Majors</td>
</tr>
<tr>
<td>GAM 244</td>
<td>Game Development I</td>
</tr>
<tr>
<td>GAM 245</td>
<td>Game Development II</td>
</tr>
<tr>
<td>GAM 374</td>
<td>Action Games Programming</td>
</tr>
</tbody>
</table>

2 courses from the following list:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANI 230</td>
<td>3D Design &amp; Modeling</td>
</tr>
<tr>
<td>GPH 321</td>
<td>Computer Graphics Development I</td>
</tr>
<tr>
<td>GPH 329</td>
<td>Computer Graphics Development II</td>
</tr>
<tr>
<td>GPH 350</td>
<td>Digital Modeling II</td>
</tr>
</tbody>
</table>

Any other 300-Level GAM or GPH course

### Information and Computing in the Modern World Minor

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECT 350</td>
<td>Internet, Commerce and Society</td>
</tr>
<tr>
<td>HCI 201</td>
<td>Multimedia and the World Wide Web</td>
</tr>
<tr>
<td>IT 201</td>
<td>Introduction to Information Systems</td>
</tr>
<tr>
<td>IT 215</td>
<td>Analysis and Design Techniques</td>
</tr>
<tr>
<td>CSC 223</td>
<td>The Impact of Computing Technology on Our Lives</td>
</tr>
<tr>
<td>or IT 228</td>
<td>Ethics in Computer Games and Cinema</td>
</tr>
<tr>
<td>or CSC 208</td>
<td>The Computer and Social Responsibility</td>
</tr>
</tbody>
</table>
or IS 208    Information Technology, Economy and Society
IS 356    Knowledge Management Systems
or IS 374    Management Support Systems
or IT 398    Topics in Global Information Technology

**Interactive Media Minor**

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCI 201</td>
<td>Multimedia and the World Wide Web</td>
</tr>
<tr>
<td>or IT 130</td>
<td>The Internet and the Web</td>
</tr>
<tr>
<td>IM 210</td>
<td>Introduction to Human-Computer Interaction</td>
</tr>
<tr>
<td>ANI 105</td>
<td>Intro to Visual Design</td>
</tr>
<tr>
<td>or GPH 211</td>
<td>Perceptual Principles for Digital Environments</td>
</tr>
<tr>
<td>IM 220</td>
<td>Interactive Media I</td>
</tr>
<tr>
<td>IM 270</td>
<td>User-centered Web Design</td>
</tr>
<tr>
<td>2 courses from the following list:</td>
<td></td>
</tr>
<tr>
<td>IM 222</td>
<td>Information Visualization</td>
</tr>
<tr>
<td>IM 208</td>
<td>Virtual Worlds and Online Communities</td>
</tr>
<tr>
<td>IM 230</td>
<td>Scripting for Interactive Media</td>
</tr>
<tr>
<td>IM 320</td>
<td>Interactive Media II</td>
</tr>
<tr>
<td>IM 330</td>
<td>Advanced Scripting for Interactive Media</td>
</tr>
<tr>
<td>IT 231</td>
<td>Web Development I</td>
</tr>
<tr>
<td>IM 320</td>
<td>Interactive Media II</td>
</tr>
</tbody>
</table>

**Information Systems Minor**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 240</td>
<td>Introduction to Desktop Databases</td>
</tr>
<tr>
<td>IT 201</td>
<td>Introduction to Information Systems</td>
</tr>
<tr>
<td>IT 215</td>
<td>Analysis and Design Techniques</td>
</tr>
<tr>
<td>IS 372</td>
<td>Fundamentals of Software Project Management</td>
</tr>
<tr>
<td>IS 373</td>
<td>Introduction to Large Systems Implementation</td>
</tr>
</tbody>
</table>

**Information Technology Minor**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 130</td>
<td>The Internet and the Web</td>
</tr>
<tr>
<td>IT 231</td>
<td>Web Development I</td>
</tr>
<tr>
<td>IT 240</td>
<td>Introduction to Desktop Databases</td>
</tr>
<tr>
<td>IT 263</td>
<td>Applied Networks and Security</td>
</tr>
<tr>
<td>or TDC 261</td>
<td>Basic Communication Systems</td>
</tr>
<tr>
<td>IT 215</td>
<td>Analysis and Design Techniques</td>
</tr>
<tr>
<td>1 CDM Elective</td>
<td></td>
</tr>
</tbody>
</table>

**Network Technology Minor**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 211</td>
<td>Programming in Java I</td>
</tr>
<tr>
<td>or CSC 261</td>
<td>Programming Languages I:C/C++</td>
</tr>
<tr>
<td>CSC 212</td>
<td>Programming in Java II</td>
</tr>
<tr>
<td>or CSC 262</td>
<td>Programming Language II:C/C++</td>
</tr>
<tr>
<td>IT 201</td>
<td>Introduction to Information Systems</td>
</tr>
<tr>
<td>IT 263</td>
<td>Applied Networks and Security</td>
</tr>
<tr>
<td>TDC 362</td>
<td>Principles of Data Communication</td>
</tr>
<tr>
<td>TDC 363</td>
<td>Introduction to Local Area Networks</td>
</tr>
</tbody>
</table>
## Screenwriting Minor
- DC 201 Introduction to Screenwriting
- DC 205 Foundations of Cinema
- DC 301 Advanced Screenwriting I
- DC 302 Advanced Screenwriting II
- DC 303 Advanced Screenwriting III
- DC 304 Topics in Screenwriting

## Security Minor
- CSC 211 Programming in Java I
  
  and CSC 212 Programming in Java II
  
  or
- CSC 261 Programming Language I: C/C++
  
  and CSC 262 Programming Language II: C/C++
- CSC 233 Codes and Cyphers
  
  or CSC 333 Cryptology
- CNS 378 Host and Information Security
- CNS 320 Computer Forensic and Incident Response
- CNS 228 Legal, Ethical and Social Issues in Information Security
- CNS 340 Fundamentals of Information Assurance

## Security in the Electronic World Minor
- IT 130 The Internet and the Web
  
  and IT 231 Web Development I
  
  and IT 232 Web Development II
  
  or
- CSC 261 Programming Language I: C/C++
  
  and CSC 262 Programming Language II: C/C++
  
  or
- CSC 241 Introduction to Computer Science I
  
  and CSC 242 Introduction to Computer Science II
  
  or
- CSC 211 Programming in Java I
  
  and CSC 212 Programming in Java II
- CNS 228 Legal, Ethical and Society Issues in Information Security
- CNS 233 Codes and Ciphers
- CNS 320 Computer Forensic and Incident Response
- CNS 340 Fundamentals of Information Assurance

## Software Engineering Minor
- CSC 261 Programming Languages I: C/C++
  
  and CSC 262 Programming Languages II: C/C++
  
  and CSC 224 Java for Programmers
  
  or
- CSC 241 Introduction to Computer Science I
  
  and CSC 242 Introduction to Computer Science II
  
  and CSC 224 Java for Programmers
CSC 211 Programming in Java I
CSC 212 Programming in Java II

and then

CSC 383 Data Structures and Algorithms in Java
SE 325 Principles and Practices of Software Engineering
SE 330 Object-Oriented Modeling
SE 350 Object-Oriented Software Development

Sound Design Minor
DC 215 Digital Sound Design
DC 312 Music for Film and Video
DC 313 Production Sound
DC 315 Advanced Digital Sound Design

3 courses from the following list
GAM 250 Digital Sound for Computer Games
DC 317 Advanced Sound Mixing for Cinema
DC 318 Advanced Dialogue Recording and Editing
DC 319 Advanced Sound Effects Recording and Editing
DC 313 Sound for Multimedia
DC 203 History of Motion Picture Sound

Visual Effects Minor
ANI 230 3D Design & Modeling
ANI 379 Advanced 3D Compositing
DC 220 Editing I
DC 325 Color Correction
VFX 200 Introduction to Visual Effects
VFX 278 Digital Compositing I
VFX 378 Digital Compositing II

Visual Computing Minor
MAT 140 Discrete Mathematics I
or MAT 220 Linear Algebra with Applications
or 1 quarter of Calculus (Prerequisite for CSC 381)
IT 223 Data Analysis (Prerequisite for CSC 367)
CSC 381 Introduction to Digital Image Processing
CSC 382 Applied Image Analysis
IT 300 Research Experience
CSC 367 Introduction to Data Mining (IT 223 requirement)

Bachelor of Arts Degree Programs

College of Computing and Digital Media - Undergraduate Studies School of Cinema and Interactive Media (CIM) Bachelor of Arts Degree Programs

Animation

The BA in Animation emphasizes solid traditional animation and storytelling skills, while
encouraging experimentation in form, content and medium. Students are free to work in hand-drawn, stop-motion, cut-out and 3D computer animation. They may produce hybrid forms fully integrated with live action video, draw web-based shorts inspired by Hollywood or anime, or design motion graphics for film titles and commercials.

Students will gain a broad foundation in the rich history of the art form, drawing and design skills, and prepare for the future under the guidance of faculty with professional experience in television, film, art and interactive media. Students will have access to the latest in animation technology, computing systems, and software. Students will gain valuable production experience both in class and through internships, and benefit from CDMs relationship with Chicago's many animation and production studios.

Online Learning Options

Some courses are available for review and playback via the CDM Course Online playback system (COL). If a course is COL-enabled, any student registered in the course has access to the course playback. Students are strongly encouraged to utilize the COL resource wherever available. Some undergraduate courses are offered online. However, CDM currently does not offer any undergraduate program completely online. For more information on online learning at CDM visit the Online Learning page.

The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BA degree in Animation:

<table>
<thead>
<tr>
<th>First Year Program</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago Quarter</td>
<td>LSP 110 or LSP 111</td>
</tr>
<tr>
<td>Focal Point</td>
<td>LSP 112</td>
</tr>
<tr>
<td>Writing</td>
<td>WRD 103 and WRD 104</td>
</tr>
<tr>
<td>Quantitative Reasoning &amp; Technological Literacy</td>
<td>LSP 120 &amp; LSP 121</td>
</tr>
<tr>
<td>(Note: This proficiency can be met through exams at QRC. Please see QRC note below for more information.)</td>
<td></td>
</tr>
<tr>
<td>Sophomore Year</td>
<td></td>
</tr>
<tr>
<td>Multiculturalism in the US</td>
<td>LSP 200</td>
</tr>
<tr>
<td>Junior Year</td>
<td>Required</td>
</tr>
<tr>
<td>Senior Year</td>
<td></td>
</tr>
<tr>
<td>Capstone</td>
<td>ANI 395</td>
</tr>
</tbody>
</table>

Learning Domains

| Arts and Literature (AL) | 3 Courses Required:  |
| - ART 106               |  |
| - DC 233 or ART 200     |  |
| - 1 Additional Course   |  |
| Philosophical Inquiry (PI) | 2 Courses Required  |
| (See note below)        |  |
| Religious Dimensions (RD) | 2 Courses Required  |
| (See note below)        |  |
| Scientific Inquiry (SI) | 1 SI Lab Course Required |
| Self, Society and the Modern World (SSMW) | 3 Courses Required |
**Understanding the Past**

<table>
<thead>
<tr>
<th>Note</th>
<th>2 Courses Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UP</strong></td>
<td>1 of the PI or RD courses must be an ethics course: Recommended choices are DC/GAM/IT 228 (PI), PHL/MGT 248 (PI) or REL/MGT 228 (RD)</td>
</tr>
</tbody>
</table>

**QRC- Quantitative Reasoning and Technological Literacy:** All CDM students must complete the placement exam for Quantitative Reasoning and Technological Literacy. Students must complete the one course into which they place (LSP 120 or LSP 121). Students who complete both LSP 120 and LSP 121 take one less Domain course. Students may not apply the course reduction to any Domain where only one course is required.

**Note:** Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the JYEL requirement.

*Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.*

The representation of these course requirements on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

**First Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANI 105</td>
<td>Intro to Visual Design</td>
</tr>
<tr>
<td>ANI 201</td>
<td>Animation I</td>
</tr>
<tr>
<td>ANI 206</td>
<td>History of Animation</td>
</tr>
<tr>
<td>DC 201</td>
<td>Introduction to Screenwriting</td>
</tr>
<tr>
<td>DC 220</td>
<td>Editing I</td>
</tr>
<tr>
<td>ART 218</td>
<td>Figure Drawing</td>
</tr>
</tbody>
</table>

* ANI 101 allowed for transfer students

6 Liberal Studies

**Second Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANI 220</td>
<td>Storyboarding and Narrative Development</td>
</tr>
<tr>
<td>ANI 230</td>
<td>3D Design &amp; Modeling</td>
</tr>
<tr>
<td>ANI 231</td>
<td>3D Animation</td>
</tr>
<tr>
<td>ANI 320</td>
<td>Hand-Drawn Animation</td>
</tr>
<tr>
<td>DC 210</td>
<td>Digital Cinema Production I</td>
</tr>
<tr>
<td>ANI 318</td>
<td>Advanced Figure Drawing</td>
</tr>
</tbody>
</table>

6 Liberal Studies

**Third Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANI 240</td>
<td>Animation Production I</td>
</tr>
<tr>
<td>ANI 340</td>
<td>Animation Production II</td>
</tr>
<tr>
<td>IM 220</td>
<td>Interactive Media I</td>
</tr>
<tr>
<td>DC 215</td>
<td>Digital Sound Design</td>
</tr>
<tr>
<td>MCS 207</td>
<td>History of Cinema I, 1890-1945</td>
</tr>
<tr>
<td>or MCS 208</td>
<td>History of Cinema II, 1945-1975</td>
</tr>
<tr>
<td>or MCS 209</td>
<td>History of Cinema III, 1975-Present</td>
</tr>
</tbody>
</table>

3 Liberal Studies

2 Major Electives

2 Open Electives
Fourth Year

ANI 260 Motion Graphics
ANI 394 Animation Project I
ANI 395 Animation Project II
5 Liberal Studies
2 Major Electives
2 Open Electives

Major Electives

Major electives can be chosen from the following list:
Any ANI, ART, DC, GAM, GPH, IM, TV or VFX course **EXCEPT: ART 102, ART 104, ART 105, DC 120 or GPH 211.**

Students must earn a grade of C- or higher in all major elective courses.

Open Electives

Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a **CDM minor or other minors** are normally credited as open electives.

Degree Requirements

Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
- between 3.700 and 3.849 will be graduated magna cum laude
- of at least 3.850 will be graduated summa cum laude

For DePaul's policy on repeat courses and a complete list of academic policies see the DePaul Undergraduate Handbook.

College of Computing and Digital Media - Undergraduate Studies School of Cinema and Interactive Media (CIM) Bachelor of Arts Degree Programs Digital Cinema

Digital Cinema

The **BA in Digital Cinema** is an innovative motion picture production program dedicated to utilizing the latest cutting-edge digital technology while incorporating classic cinema narrative theory and aesthetics. Students receive hands-on experience with the latest production equipment in the first year and get an insider's view of the industry from experienced faculty.

The Bachelor of Arts Program offers three programs of undergraduate study for students:

- The **Cinema Production Concentration** features a hands-on program in live-action production. With its greater number of electives, students may also develop an
interdisciplinary program of study in cinema history and theory.
- The **Screenwriting Concentration** features a program of study in advanced screenwriting in addition to core courses in cinema production, dramatic literature and cinema history/theory.
- The **Television Production Concentration** features a hands-on experience with cutting edge digital equipment in studio and field production for video and television. Students apply theoretical concepts while planning and designing programs, capturing, editing (linear and non-linear) and post-production.

The curriculum consists of the DePaul University Liberal Studies Program and Major Field Courses.

### Online Learning Options

Some courses are available for review and playback via the CDM Course Online playback system (COL). If a course is COL-enabled, any student registered in the course has access to the course playback. Students are strongly encouraged to utilize the COL resource wherever available. Some undergraduate courses are offered online. However, CDM currently does not offer any undergraduate program completely online. For more information on online learning at CDM visit the Online Learning page.

### Cinema Production Concentration

The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BA degree in Digital Cinema (Cinema Production concentration):

<table>
<thead>
<tr>
<th>First Year Program</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chicago Quarter</strong></td>
</tr>
<tr>
<td><strong>Focal Point</strong></td>
</tr>
<tr>
<td><strong>Writing</strong></td>
</tr>
<tr>
<td><strong>Quantitative Reasoning &amp; Technological Literacy</strong></td>
</tr>
<tr>
<td><strong>Note</strong>: This proficiency can be met through exams at QRC. Please see QRC note below for more information.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Multiculturalism in the US</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junior Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experiential Learning</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Senior Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capstone</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning Domains</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arts and Literature (AL)</strong></td>
</tr>
<tr>
<td><strong>Philosophical Inquiry (PI)</strong></td>
</tr>
<tr>
<td>(See note below)</td>
</tr>
<tr>
<td><strong>Religious Dimensions (RD)</strong></td>
</tr>
<tr>
<td>(See note below)</td>
</tr>
<tr>
<td><strong>Scientific Inquiry (SI)</strong></td>
</tr>
<tr>
<td><strong>Self, Society and the Modern World (SSMW)</strong></td>
</tr>
<tr>
<td><strong>Understanding the Past (UP)</strong></td>
</tr>
</tbody>
</table>
Other

1 of the PI or RD courses must be an ethics course: Recommended choices are DC/GAM/IT 228 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)

QRC- Quantitative Reasoning and Technological Literacy: All CDM students must complete the placement exam for Quantitative Reasoning and Technological Literacy. Students must complete the one course into which they place (LSP 120 or LSP 121). Students who complete both LSP 120 and LSP 121 take one less Domain course. Students may not apply the course reduction to any Domain where only one course is required, and if taken within the SI Domain, the reduction cannot be applied to the SI Lab requirement.

Note: Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the JYEL requirement.

Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.

The representation of the following Course Requirements on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites. First Year

DC 101 Screenwriting for Majors
DC 110 Foundations of Cinema for Majors
DC 220 Editing I
DC 222 Story Structure for Cinema
MCS 207 History of Cinema I, 1890-1945
or MCS 208 History of Cinema II, 1945-1975
5 Liberal Studies
1 Major Elective
1 Open Elective

Second Year

ANI 101 Animation for Non-Majors
or ANI 201 Animation I
DC 210 Digital Cinema Production I
DC 270 Topics in Digital Cinema
DC 215 Digital Sound Design
DC 225 Digital Still Photography
DC 275 Cinematography
DC 376 Visual Design
5 Liberal Studies

Third Year

DC 323 Pre-production for Cinema
VFX 278 Digital Compositing I
DC 315 Advanced Digital Sound Design
DC 320 Editing II
DC 371 Documentary Production
5 Liberal Studies
1 Major Elective
1 Open Elective

Fourth Year

DC 310 Digital Cinema Production II
DC 389 The Big Picture: The Entertainment Industry
Major Electives

Major Electives can be chosen for any 200 level DC, ANI, VFX or TV courses. Students must earn a grade of C- or higher in all major elective courses.

Open Electives

Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a CDM minor or other minors are normally credited as open electives.

Degree Requirements

Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
- between 3.700 and 3.849 will be graduated magna cum laude
- of at least 3.850 will be graduated summa cum laude

For DePaul's policy on repeat courses and a complete list of academic policies see the DePaul Undergraduate Handbook.

Screenwriting Concentration

The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BA degree in Digital Cinema (Screenwriting concentration):

<table>
<thead>
<tr>
<th>First Year Program</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago Quarter</td>
<td>LSP 110 or LSP 111</td>
</tr>
<tr>
<td>Focal Point</td>
<td>LSP 112</td>
</tr>
<tr>
<td>Writing</td>
<td>WRD 103 and WRD 104</td>
</tr>
<tr>
<td>Quantitative Reasoning &amp;</td>
<td>LSP 120 &amp; LSP 121</td>
</tr>
<tr>
<td>Technological Literacy</td>
<td>Note: This proficiency can be met through exams at QRC. Please see QRC note below for more information.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiculturalism in the US</td>
<td>LSP 200</td>
</tr>
</tbody>
</table>

<p>| Junior Year                 |  |</p>
<table>
<thead>
<tr>
<th>Experiential Learning</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Senior Year</strong></td>
<td></td>
</tr>
<tr>
<td>Capstone</td>
<td>DC 398</td>
</tr>
<tr>
<td><strong>Learning Domains</strong></td>
<td></td>
</tr>
<tr>
<td>Arts and Literature (AL)</td>
<td>3 Courses Required</td>
</tr>
<tr>
<td>Philosophical Inquiry (PI)</td>
<td>2 Courses Required  &lt;br&gt; <em>(See note below)</em></td>
</tr>
<tr>
<td>Religious Dimensions (RD)</td>
<td>2 Courses Required &lt;br&gt; <em>(See note below)</em></td>
</tr>
<tr>
<td>Scientific Inquiry (SI)</td>
<td>1 SI Lab Course Required</td>
</tr>
<tr>
<td>Self, Society and the Modern World (SSMW)</td>
<td>3 Courses Required</td>
</tr>
<tr>
<td>Understanding the Past (UP)</td>
<td>2 Courses Required</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>1 of the PI or RD courses must be an ethics course: Recommended choices are DC/GAM/IT 228 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)</td>
</tr>
</tbody>
</table>

**QRC - Quantitative Reasoning and Technological Literacy:** All CDM students must complete the placement exam for Quantitative Reasoning and Technological Literacy. Students must complete the one course into which they place (LSP 120 or LSP 121). Students who complete both LSP 120 and LSP 121 take one less Domain course. Students may not apply the course reduction to any Domain where only one course is required, and if taken within the SI Domain, the reduction cannot be applied to the SI Lab requirement.

**Note:** Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the JYEL requirement.

*Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.*

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The representation of the following **Course Requirements** on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

**First Year**
- DC 101 Screenwriting for Majors
- DC 110 Foundations of Cinema for Majors
- DC 222 Story Structure for Cinema
- MCS 207 History of Cinema I, 1890-1945
- MCS 208 History of Cinema II
- MCS 209 History of Cinema III, 1975-Present
- 5 Liberal Studies
- 1 Open Elective

**Second Year**
- DC 210 Digital Cinema Production I
- DC 220 Editing I
- DC 250 Working with Actors I
- DC 270 Topics in Digital Cinema
- 6 Liberal Studies
- 2 Major Electives
**Third Year**

DC 301 Advanced Screenwriting I  
DC 302 Advanced Screenwriting II  
DC 303 Advanced Screenwriting III  
DC 306 Writing the Sitcom  
DC 235 Adaptation: The Cinematic Recrafting of Meaning

5 Liberal Studies  
1 Major Elective  
1 Open Elective

**Fourth Year**

DC 307 Writing the Episodic Drama  
DC 304 Topics in Screenwriting  
DC 389 The Big Picture: The Entertainment Industry  
DC 398 Digital Cinema Capstone

4 Liberal Studies  
1 Major Elective  
3 Open Electives

---

**Major Electives**

Major Electives can be chosen for any **200 level DC, ANI, VFX or TV courses**

Students must earn a grade of C- or higher in all major elective courses.

---

**Open Electives**

Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a **CDM minor or other minors** are normally credited as open electives.

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**Degree Requirements**

Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
- between 3.700 and 3.849 will be graduated magna cum laude
- of at least 3.850 will be graduated summa cum laude

For DePaul's policy on repeat courses and a complete list of academic policies see the [DePaul Undergraduate Handbook](#).

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**Television Production Concentration**

The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BA degree in Digital Cinema (Screenwriting
Following are the specific requirements for the BA degree in Digital Cinema (Screenwriting concentration):

### First Year Program

<table>
<thead>
<tr>
<th>Category</th>
<th>Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chicago Quarter</strong></td>
<td>LSP 110 or LSP 111</td>
</tr>
<tr>
<td><strong>Focal Point</strong></td>
<td>LSP 112</td>
</tr>
<tr>
<td><strong>Writing</strong></td>
<td>WRD 103 and WRD 104</td>
</tr>
<tr>
<td><strong>Quantitative Reasoning &amp; Technological Literacy</strong></td>
<td>LSP 120 &amp; LSP 121</td>
</tr>
</tbody>
</table>

### Sophomore Year

**Multiculturalism in the US**

| Classes | LSP 200 |

### Junior Year

**Experiential Learning**

| Required |

### Senior Year

**Capstone**

| DC 398 |

### Learning Domains

<table>
<thead>
<tr>
<th>Domain</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arts and Literature (AL)</strong></td>
<td>3 Courses Required</td>
</tr>
<tr>
<td><strong>Philosophical Inquiry (PI)</strong></td>
<td>2 Courses Required</td>
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<tr>
<td><strong>Religious Dimensions (RD)</strong></td>
<td>2 Courses Required</td>
</tr>
<tr>
<td><strong>Scientific Inquiry (SI)</strong></td>
<td>1 SI Lab Course Required</td>
</tr>
<tr>
<td><strong>Self, Society and the Modern World (SSMW)</strong></td>
<td>3 Courses Required</td>
</tr>
<tr>
<td><strong>Understanding the Past (UP)</strong></td>
<td>2 Courses Required</td>
</tr>
</tbody>
</table>

Other 1 of the PI or RD courses must be an ethics course:
Recommended choices are DC/GAM/IT 228 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)

**QRC: Quantitative Reasoning and Technological Literacy:** All CDM students must complete the placement exam for Quantitative Reasoning and Technological Literacy. Students must complete the one course into which they place (LSP 120 or LSP 121). Students who complete both LSP 120 and LSP 121 take one less Domain course. Students may not apply the course reduction to any Domain where only one course is required, and if taken within the SI Domain, the reduction cannot be applied to the SI Lab requirement.

**Note:** Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the JYEL requirement.

**Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.**

The representation of the following **Course Requirements** on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

### First Year
**Degree Requirements**

Students in this degree must meet the following requirements:

- **Second Year**
  - ANI 260  Motion Graphics
  - DC 275  Cinematography
  - DC 271  Introduction to Television Production
  - DC 272  Writing for Television
  - DC 376  Visual Design
  - VFX 278  Digital Compositing I

- **Third Year**
  - TV 289  The Business of Television
  - TV 320  Editing for Television
  - TV 301  Television Program Development
  - DC 323  Pre-production in Cinema
  - DC 371  Documentary Production

- **Fourth Year**
  - DC 372  Topics in TV Production
  - DC 373  Advanced Documentary Production
  - DC 378  Digital Compositing II
  - DC 398  Digital Cinema Capstone

- **Major Electives**
  - Major Electives can be chosen for any 200 level DC, ANI, VFX or TV courses
  - Students must earn a grade of C- or higher in all major elective courses.

- **Open Electives**
  - Open Electives may be taken from any unit at DePaul. It is suggested that students include the following courses in their electives:
    - JOUR 276 Photojournalism
    - JOUR 365 Television News
    - JOUR 385 Television News II
  - These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a CDM minor or other minors are normally credited as open electives.
• complete a minimum of 192 credit hours (generally 48 courses)
• earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
• maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
- between 3.700 and 3.849 will be graduated magna cum laude
- of at least 3.850 will be graduated summa cum laude

For DePaul's policy on repeat courses and a complete list of academic policies see the DePaul Undergraduate Handbook

Bachelor of Science Degree Programs

College of Computing and Digital Media - Undergraduate Studies
School of Cinema and Interactive Media (CIM) Bachelor of Science Degree Programs

Animation

The BS in Animation provides students with a solid foundation in the art of animation and its history combined with insight into the latest techniques used in the rapidly-moving fields of high end 3D animation in the film, television, and game development industries. Students will learn a comprehensive set of skills in 3D including character animation, modeling, texturing, lighting, and rigging. 3D courses are designed to provide students with necessary proficiencies while also encouraging creativity and experimentation. Students interested in game art will have additional options for gaining experience through cross-disciplinary classes in game development and production and through work on game development teams. Students will have access to the latest in animation software, computing systems, and technologies including motion capture and green screen studios. Students will gain valuable production experience both in class and through internships, and benefit from CDMs relationship with Chicago's largest game development and animation studios.

Online Learning Options

Some courses are available for review and playback via the CDM Course Online playback system (COL). If a course is COL-enabled, any student registered in the course has access to the course playback. Students are strongly encouraged to utilize the COL resource wherever available. Some undergraduate courses are offered online. However, CDM currently does not offer any undergraduate program completely online. For more information on online learning at CDM visit the Online Learning page.

The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BS degree in Animation:

<table>
<thead>
<tr>
<th>First Year Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago Quarter</td>
</tr>
<tr>
<td>LSP 110 or LSP 111</td>
</tr>
<tr>
<td>Focal Point</td>
</tr>
<tr>
<td>LSP 112</td>
</tr>
</tbody>
</table>
### Writing
WRD 103 and WRD 104

### Quantitative Reasoning & Technological Literacy
LSP 120 & LSP 121

(Note: This proficiency can be met through exams at QRC. Please see QRC note below for more information.)

### Sophomore Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Required Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiculturalism in the US</td>
<td>LSP 200</td>
</tr>
</tbody>
</table>

### Junior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiential Learning</td>
<td>Required</td>
</tr>
</tbody>
</table>

### Senior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Required Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capstone</td>
<td>ANI 395 or GAM 395</td>
</tr>
</tbody>
</table>

### Learning Domains

<table>
<thead>
<tr>
<th>Domain</th>
<th>Courses Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arts and Literature (AL)</strong></td>
<td>3 Courses Required:</td>
</tr>
<tr>
<td></td>
<td>- ART 106</td>
</tr>
<tr>
<td></td>
<td>- DC 233 or ART 200</td>
</tr>
<tr>
<td></td>
<td>- 1 Additional Course</td>
</tr>
<tr>
<td></td>
<td>(Note: GAM 224 recommended)</td>
</tr>
<tr>
<td><strong>Philosophical Inquiry (PI)</strong></td>
<td>2 Courses Required</td>
</tr>
<tr>
<td></td>
<td>(See note below)</td>
</tr>
<tr>
<td><strong>Religious Dimensions (RD)</strong></td>
<td>2 Courses Required</td>
</tr>
<tr>
<td></td>
<td>(See note below)</td>
</tr>
<tr>
<td><strong>Scientific Inquiry (SI)</strong></td>
<td>1 SI Lab Course Required</td>
</tr>
<tr>
<td><strong>Self, Society and the Modern World (SSMW)</strong></td>
<td>3 Courses Required</td>
</tr>
<tr>
<td><strong>Understanding the Past (UP)</strong></td>
<td>2 Courses Required</td>
</tr>
</tbody>
</table>

1 of the PI or RD courses must be an ethics course: Recommended choices are DC/GAM/IT 228 (PI), PHL/MGT 248 (PI) or REL/MGT 228 (RD)

### QRC - Quantitative Reasoning and Technological Literacy:
All CDM students must complete the placement exam for Quantitative Reasoning and Technological Literacy. Students must complete the one course into which they place (LSP 120 or LSP 121). Students who complete both LSP 120 and LSP 121 take one less Domain course. Students may not apply the course reduction to any Domain where only one course is required.

**Note:** Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the JYEL requirement.

**Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.**

The representation of these course requirements on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

### First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Required Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANI 105</td>
<td>Intro to Visual Design</td>
</tr>
<tr>
<td>ANI 201 *</td>
<td>Animation I</td>
</tr>
<tr>
<td>ANI 206</td>
<td>History of Animation</td>
</tr>
<tr>
<td>ANI 230</td>
<td>3D Design &amp; Modeling</td>
</tr>
</tbody>
</table>
DC 201 Introduction to Screenwriting
ART 218 Figure Drawing
*ANI 101 allowed for transfer students
6 Liberal Studies

**Second Year**
ANI 220 Storyboarding and Narrative Development
ANI 231 3D Animation
ANI 300 3D Character Animation
DC 220 Editing I
ART 318 Advanced Figure Drawing
or ART 317 Figure Sculpture
GAM 244 Game Development I

6 Liberal Studies

**Third Year**
ANI 240 Animation Production I
ANI 340 Animation Production II
ANI 330 3D Character Modeling
ANI 339 3D Texturing and Lighting
DC 210 Digital Cinema Production I
GAM 341 Introduction to Level Design

3 Liberal Studies
2 Major Electives
1 Open Elective

**Fourth Year**
MCS 207 History of Cinema I, 1890-1945
or MCS 208 History of Cinema II, 1945-1975
or MCS 209 History of Cinema III, 1975-Present
GPH 355 3D Scripting for Animators
ANI 394 * Animation Project I
ANI 395 * Animation Project II

GAM 394/395 may be substituted for ANI 394/395

5 Liberal Studies
1 Major Elective
2 Open Electives

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**Major Electives**
Major electives can be chosen from the following list
Any ANI,ART,DC,GAM,GPH, IM, TV or VFX course **EXCEPT: ART 102,ART 104,ART 105,DC 120 or GPH 211**.
Students must earn a grade of C- or higher in all major elective courses.

**Open Electives**
Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a CDM minor or other minors are normally credited as open electives.

**Degree Requirements**
Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
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College of Computing and Digital Media - Undergraduate Studies | School of Cinema and Interactive Media (CIM) | Bachelor of Science Degree Programs | Computer Games Development (Joint with SoC)

**Computer Games Development (Joint with SoC)**

The **BS in Computer Game Development** prepares students to work in the multi-disciplinary field of computer gaming and interactive media. This program also requires strong mathematical and programming skills. CDM's Computer Game Development program combines coursework in game programming, game design, 3D Modeling, animation, physics, and artificial intelligence. Students work in cross-disciplinary teams to design and develop games. This program was created in consultation with our Game Dev Industry Advisory Board, and is the result of input from many of the top game programmers, producers and designers in the Chicago area. For more information on the degree visit the Game Dev website. Learn more about admission to this program.

**Concentrations**

Production and Design Concentration
Students in this concentration receive an education in all areas of game development, including game design, programming and animation, but also the basic business skills of project management, budgeting, contract negotiation, marketing and quality assurance.

Game Programming Concentration
Students in this concentration engage in the rigorous study of computer science basics, and then apply this knowledge to the demanding specialization of game programming. Areas of study include computer graphics development, computer science, linear algebra, game physics, and artificial intelligence programming.

**Online Learning Options**

Many courses are available for review and playback via the CDM Course Online playback system (COL). If a course is COL-enabled, any student registered in the course has access to the course playback. Students are strongly encouraged to utilize the COL resource wherever available. Some undergraduate courses are offered online. However, CDM currently does not offer any undergraduate program completely online. For more information on online learning at CDM visit the Online Learning page.

**Production & Design Concentration**

The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BS in Computer Games Development (Production and Design Concentration):

<table>
<thead>
<tr>
<th>First Year Program</th>
<th>LSP 110 or LSP 111</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago Quarter</td>
<td></td>
</tr>
<tr>
<td>Focal Point</td>
<td>LSP 112</td>
</tr>
<tr>
<td>-------------</td>
<td>---------</td>
</tr>
<tr>
<td>Writing</td>
<td>WRD 103 and WRD 104</td>
</tr>
<tr>
<td>Quantitative Reasoning &amp; Technological Literacy</td>
<td>Not Required</td>
</tr>
<tr>
<td>Sophomore Year</td>
<td></td>
</tr>
<tr>
<td>Multiculturalism in the US</td>
<td>LSP 200</td>
</tr>
<tr>
<td>Junior Year</td>
<td></td>
</tr>
<tr>
<td>Experiential Learning</td>
<td>Required</td>
</tr>
<tr>
<td>Senior Year</td>
<td></td>
</tr>
<tr>
<td>Capstone</td>
<td>GAM 395</td>
</tr>
</tbody>
</table>

**Learning Domains**

<table>
<thead>
<tr>
<th>Arts and Literature (AL)</th>
<th>3 courses required:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- DC 201</td>
</tr>
<tr>
<td></td>
<td>- 2 Additional Courses</td>
</tr>
<tr>
<td>Philosophical Inquiry (PI)</td>
<td>2 Courses Required:</td>
</tr>
<tr>
<td></td>
<td>- DC 228/IT 228</td>
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<tr>
<td></td>
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<tr>
<td>Scientific Inquiry (SI)</td>
<td>1 SI Lab Course Required</td>
</tr>
<tr>
<td>Self, Society and the Modern World (SSMW)</td>
<td>3 Courses Required</td>
</tr>
<tr>
<td>Understanding the Past (UP)</td>
<td>2 Courses Required</td>
</tr>
</tbody>
</table>

- **Note:** Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the JYEL requirement.

- **Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.**

The representation of the following **Course Requirements** on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

**First Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAM 226</td>
<td>Game Design for Majors</td>
</tr>
<tr>
<td>GAM 244</td>
<td>Game Development I</td>
</tr>
<tr>
<td>GAM 245</td>
<td>Game Development II</td>
</tr>
<tr>
<td>ANI 101</td>
<td>Animation for Non-Majors</td>
</tr>
<tr>
<td>or ANI 201</td>
<td>Animation I</td>
</tr>
<tr>
<td>ANI 105</td>
<td>Intro to Visual Design</td>
</tr>
</tbody>
</table>

7 Liberal Studies

**Second Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 150</td>
<td>Calculus I</td>
</tr>
<tr>
<td>GAM 341</td>
<td>Introduction to Level Design</td>
</tr>
<tr>
<td>ANI 230</td>
<td>3D Design &amp; Modeling</td>
</tr>
<tr>
<td>CSC 261</td>
<td>Programming Languages I: C/C++</td>
</tr>
<tr>
<td>CSC 262</td>
<td>Programming Languages II: C/C++</td>
</tr>
<tr>
<td>GAM 230</td>
<td>Intro to Game Production</td>
</tr>
</tbody>
</table>

5 Liberal Studies

1 Major Elective
Major Electives can be chosen from the following list:
- **200 level ANI, DC, GAM, GPH, or IM courses**
- **300 level CDM courses**

Students must earn a grade of C- or higher in all major elective courses.

Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a **CDM minor or other minors** are normally credited as open electives.

**Degree Requirements**

Students in this degree must meet the following requirements:
- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:
- between 3.500 and 3.699 will be graduated cum laude
- between 3.700 and 3.849 will be graduated magna cum laude
- of at least 3.850 will be graduated summa cum laude

For DePaul's policy on repeat courses and a complete list of academic policies see the **DePaul Undergraduate Handbook**.

**Game Programming Concentration**

The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BS in Computer Games Development (Game Programming Concentration):
First Year Program

<table>
<thead>
<tr>
<th>Chicago Quarter</th>
<th>LSP 110 or LSP 111</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focal Point</td>
<td>LSP 112</td>
</tr>
<tr>
<td>Writing</td>
<td>WRD 103 and WRD 104</td>
</tr>
<tr>
<td>Quantitative Reasoning &amp; Technological Literacy</td>
<td>Not Required</td>
</tr>
</tbody>
</table>

Sophomore Year

| Multiculturalism in the US | LSP 200 |

Junior Year

| Experiential Learning | Required |

Senior Year

| Capstone | GAM 395 |

Learning Domains

<table>
<thead>
<tr>
<th>Arts and Literature (AL)</th>
<th>3 courses required:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- DC 201</td>
</tr>
<tr>
<td></td>
<td>- ANI 101</td>
</tr>
<tr>
<td></td>
<td>- 1 Additional Course</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Philosophical Inquiry (PI)</th>
<th>2 courses required:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- DC 228/IT 228</td>
</tr>
<tr>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Religious Dimensions (RD)</th>
<th>2 Courses Required</th>
</tr>
</thead>
</table>

| Scientific Inquiry (SI) | 1 SI Lab Course Required |

| Self, Society and the Modern World (SSMW) | 3 Courses Required |

| Understanding the Past (UP) | 2 Courses Required |

Note: Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the JYEL requirement.

Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.

The representation of the following Course Requirements on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

First Year

| ANI 105 | Intro to Visual Design |
| GAM 226 | Game Design For Majors |
| GAM 244 | Game Development I |
| MAT 150 | Calculus I |
| MAT 151 | Calculus II |
| 7 Liberal Studies |

Second Year

| CSC 261 | Programming Languages I: C/C++ |
| CSC 262 | Programming Languages II: C/C++ |
| CSC 393 | Data Structures in C++ |
| GAM 245 | Game Development II |
| ANI 230 | 3D Design & Modeling |
| 5 Liberal Studies |
| 2 Major Electives |
Third Year
CSC 373 Computer Systems I
CSC 374 Computer Systems II
GPH 321 Computer Graphics Development I
GPH 329 Computer Graphics Development II
GAM 350 Physics for Game Developers
GAM 374 Action Games Programming
4 Liberal Studies
2 Major Electives

Fourth Year
GPH 389 Real-Time Graphics Techniques
GAM 376 Artificial Intelligence for Computer Games
GAM 392 Game Modification Workshop
GAM 394 Game Development Project I
GAM 395 Game Development Project II (Capstone)
3 Liberal Studies
1 Major Elective
3 Open Electives

Major Electives
Major electives can be chosen from the following list
200 level ANI, DC, GAM, GPH, or IM courses
300 level CDM courses
Students must earn a grade of C- or higher in all major elective courses.

Open Electives
Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a CDM minor or other minors are normally credited as open electives.

Degree Requirements
Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
- between 3.700 and 3.849 will be graduated magna cum laude
- of at least 3.850 will be graduated summa cum laude

For DePaul's policy on repeat courses and a complete list of academic policies see the DePaul Undergraduate Handbook.
Computer Graphics and Motion Technology (Joint with SoC)

The BS in Computer Graphics and Motion Technology prepares students who have a passion for art, math or technology for a multitude of career paths in computer graphics animation. Graduates from this major create visuals for video games, scientific and aerospace visualization, movies, television, and advertising. Students in this program will learn

- Design and analysis of mathematics/computer science programming principles for computer graphic design.
- History and theory of graphic design (color theory, perception).
- Usability and human-computer interaction.
- Hands-on, practical knowledge of digital photography, 3D animation, 3D modeling, texturing and rendering.
- Visual communication techniques.
- Real world experience working in a group as a contributing team member.
- Creating animation in a production pipeline environment.

Concentrations

Developer Concentration
This concentration prepares students for careers in graphics software development, with courses in programming languages (C/C++) and mathematics (calculus and algebra), in addition to animation and computer graphics.

Technical Designer Concentration
This concentration prepares students interested in visual aspects, including lighting setup, shader development, scripting and character rigging.

Online Learning Options

Some courses are available for review and playback via the CDM Course Online playback system (COL). If a course is COL-enabled, any student registered in the course has access to the course playback. Students are strongly encouraged to utilize the COL resource wherever available. Some undergraduate courses are offered online. However, CDM currently does not offer any undergraduate program completely online. For more information on online learning at CDM visit the Online Learning page.

Developer Concentration

The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BS degree in Computer Graphics and Motion Technology (Developer Concentration):

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<thead>
<tr>
<th>First Year Program</th>
<th>LSP 110 or LSP 111</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago Quarter</td>
<td>LSP 112</td>
</tr>
<tr>
<td>Focal Point</td>
<td>WRD 103 and WRD 104</td>
</tr>
<tr>
<td>Writing</td>
<td>Not Required</td>
</tr>
<tr>
<td>Quantitative Reasoning</td>
<td>Not Required</td>
</tr>
<tr>
<td>&amp; Technological Literacy</td>
<td></td>
</tr>
</tbody>
</table>

| Sophomore Year           | LSP 200             |

| Multiculturalism in the  |                     |


### US

#### Junior Year

<table>
<thead>
<tr>
<th>Experiential Learning</th>
<th>Required</th>
</tr>
</thead>
</table>

#### Senior Year

<table>
<thead>
<tr>
<th>Capstone</th>
<th>GPH 395</th>
</tr>
</thead>
</table>

#### Learning Domains

<table>
<thead>
<tr>
<th>Learning Domain</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arts and Literature (AL)</strong></td>
<td>3 Courses Required</td>
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<tr>
<td><strong>Philosophical Inquiry (PI)</strong></td>
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<td><strong>Scientific Inquiry (SI)</strong></td>
<td>1 SI Lab Course Required</td>
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<td>2 Courses Required</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>1 of the PI or RD courses must be an ethics course: Recommended choices are CSC 208 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)</td>
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</tbody>
</table>

**Note:** Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the JYEL requirement.

*Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.*

---

The representation of the following **Course Requirements** on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

#### First Year

- **CSC 261** Programming Languages I: C/C++
- **CSC 262** Programming Languages II: C/C++
- **CSC 393** Data Structures in C++
- **GPH 211** Perceptual Principles for Digital Environments I
- **GPH 212** Perceptual Principles for Digital Environments II
- **ANI 201** Animation I
- **MAT 140** Discrete Mathematics I

One of the following two-course sequences

**Calculus Sequence (option 1)**

- **MAT 150** Calculus I
- **MAT 151** Calculus II

**Calculus for Mathematics and Science Majors Sequence (option 2)**

- **MAT 160** Calculus for Mathematics and Science Majors I
- **MAT 161** Calculus for Mathematics and Science Majors II

**Calculus with Scientific Applications Sequence (option 3) Recommended**

- **MAT 170** Calculus I with Scientific Applications
- **MAT 171** Calculus II with Scientific Applications

3 Liberal Studies

#### Second Year
GPH 325  Survey of Computer Graphics
GPH 329  Computer Graphics Development II
GPH 339  Advanced Rendering Techniques
GPH 321  Computer Graphics Development I
or MAT 220  Linear Algebra with Applications
CMNS 220  Public Speaking
7 Liberal Studies

Third Year
GPH 372  Principles of Computer Animation
CSC 321  Design and Analysis of Algorithms
IM 315  Theory and Perception of Color
WRD 204  Technical Writing
5 Liberal Studies
3 Major Electives

Fourth Year
GPH 375  Advanced Graphics Development
GPH 388  Production Pipeline Techniques
GPH 389  Real-Time Graphics Techniques
GPH 395  Computer Graphics Senior Project (Capstone)
4 Liberal Studies
1 Major Elective
3 Open Electives

Major Electives

Students must earn a grade of C- or higher in all major elective courses.

Students can take any of the following courses, as long as it was not previously used to satisfy a major requirement.

ANI 300  3D Character Animation
ANI 310  Motion Capture Workshop
ART 225  Beginning Photography
ART 329  Advanced Digital Photography
ART 360  Illustration
ART 373  History of Design
IT 223  Data Analysis Self Placement Test
IT 236  User Interface Development
GPH 336  Smooth Surface Modeling for Graphics and Animation
GPH 340  Procedural Shading
GPH 341  Advanced Lighting Techniques
GPH 348  Rigging for Animation
GPH 376  Artificial Intelligence in Computer Games
GPH 380  Visualization
GPH 389  Real-Time Graphics Techniques
GPH 345  Digital Surface Modeling
GPH 259  Design Geometry
GPH 329  Computer Graphics Development II
GPH 350  Digital Modeling II
GPH 360  Modeling Spaces
GPH 374  Computer Games
GPH 375  Advanced Graphics Development
IM 270  User-Centered Web Design
* Students who take CSC 261 and CSC 262 may take IM 330 or IM 336 as an elective. Only one of the two would count as an elective.

**Open Electives**

Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a **CDM minor or other minors** are normally credited as open electives.

**Degree Requirements**

Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

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- of at least 3.850 will be graduated summa cum laude

For DePaul’s policy on repeat courses and a complete list of academic policies see the [DePaul Undergraduate Handbook](#).

**Technical Designer Concentration**

The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BS degree in Computer Graphics and Motion Technology (Technical Designer Concentration):

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<thead>
<tr>
<th>First Year Program</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chicago Quarter</strong></td>
<td>LSP 110 or LSP 111</td>
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<td>LSP 112</td>
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<td><strong>Writing</strong></td>
<td>WRD 103 and WRD 104</td>
</tr>
<tr>
<td><strong>Quantitative Reasoning &amp; Technological Literacy</strong></td>
<td>Not Required</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Multiculturalism in the US</strong></td>
<td>LSP 200</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junior Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experiential Learning</strong></td>
<td>Required</td>
</tr>
</tbody>
</table>


### Senior Year

| Capstone       | GPH 395 |

### Learning Domains

<table>
<thead>
<tr>
<th>Learning Domain</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arts and Literature (AL)</strong></td>
<td>3 Courses Required:</td>
</tr>
<tr>
<td></td>
<td>- HAA 130</td>
</tr>
<tr>
<td></td>
<td>- ART 106</td>
</tr>
<tr>
<td></td>
<td>- 1 Additional Course</td>
</tr>
<tr>
<td><strong>Philosophical Inquiry (PI)</strong></td>
<td>2 Courses Required</td>
</tr>
<tr>
<td></td>
<td><em>(See note below)</em></td>
</tr>
<tr>
<td><strong>Religious Dimensions (RD)</strong></td>
<td>2 Courses Required</td>
</tr>
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<td></td>
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The representation of the following **Course Requirements** on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

### First Year

- IM 230  
  Scripting for Interactive Media
- **and** IM 330  
  Advanced Scripting for Interactive Media
- or CSC 261  
  Programming Language I: C/C++
- **and** CSC 262  
  Programming Language II: C/C++
- GPH 211  
  Perceptual Principles for Digital Environments I
- GPH 212  
  Perceptual Principles for Digital Environments II
- ANI 201  
  Animation I
- MAT 140  
  Discrete Mathematics I
- 4 Liberal Studies

### Second Year

- GPH 345  
  Digital Surface Modeling
- GPH 325  
  Survey of Computer Graphics
- IT 236  
  User Interface Development
- ART 242  
  Principles of Asian Art
- IM 210  
  Introduction to Human-Computer Interaction
- CMNS 220  
  Public Speaking
- GPH 255  
  Hand Prototyping for Graphic Visualization
- 5 Liberal Studies

### Third Year
ART 322  Modernism to Postmodernism
IM 315  Theory and Perception of Color
GPH 338  Survey of 3-D Animation
GPH 339  Advanced Rendering Techniques
WRD 204  Technical Writing

6 Liberal Studies
1 Major Elective

**Fourth Year**

GPH 395  Computer Graphics Senior Project (Capstone)
GPH 388  Production Pipeline Techniques

4 Liberal Studies
4 Major Electives
4 Open Electives

**Major Electives**

Students must earn a grade of C- or higher in all major elective courses.

Students can take any of the following courses, as long as it was not previously used to satisfy a major requirement.

ANI 300  3D Character Animation
ANI 310  Motion Capture Workshop
ART 225  Beginning Photography
ART 329  Advanced Digital Photography
ART 360  Illustration
ART 373  History of Design
IT 223  Data Analysis [Self Placement Test]
IT 236  User Interface Development
GPH 336  Smooth Surface Modeling for Graphics and Animation
GPH 340  Procedural Shading
GPH 341  Advanced Lighting Techniques
GPH 348  Rigging for Animation
GPH 376  Artificial Intelligence in Computer Games
GPH 380  Visualization
GPH 389  Real-Time Graphics Techniques
GPH 345  Digital Surface Modeling
GPH 259  Design Geometry
GPH 329  Computer Graphics Development II
GPH 350  Digital Modeling II
GPH 360  Modeling Spaces
GPH 374  Computer Games
GPH 375  Advanced Graphics Development
IM 270  User-Centered Web Design
IM 210  Introduction to Human-Computer Interaction
IM 322  Multimedia
IM 330  Advanced Scripting for Interactive Media
or IM 336  Interactive Media Scripting for Programmers *
MAT 150  Calculus I
MAT 151  Calculus II
MAT 152  Calculus III

* Students who take CSC 261 and CSC 262 may take IM 330 or IM 336 as an elective. Only one of the two would count as an elective.
Open Electives

Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a CDM minor or other minors are normally credited as open electives.

Degree Requirements

Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
- between 3.700 and 3.849 will be graduated magna cum laude
- of at least 3.850 will be graduated summa cum laude

For DePaul's policy on repeat courses and a complete list of academic policies see the DePaul Undergraduate Handbook.

Digital Cinema

The BS in Digital Cinema at DePaul CDM is an innovative program that seeks to define and to develop the evolving relationship between cinema production technologies and creative artistic expression. The intensive technical emphasis of the Bachelor of Science degree prepares students for work in live-action special effects, 3-D animation, and game development. Students receive hands-on experience with the latest production equipment in the first year and get an insider's view of the industry from experienced faculty. Students in this program will gain practical production experience through classes, internships and the Project Bluelight program working under a group of professionals in a full-length feature film, or working in an all-student independent short productions.

Online Learning Options

A few courses are available for review and playback via the CDM Course Online playback system (COL). If a course is COL-enabled, any student registered in the course has access to the course playback. Students are strongly encouraged to utilize the COL resource wherever available. Some undergraduate courses are offered online. However, CDM currently does not offer any undergraduate program completely online. For more information on online learning at CDM visit the Online Learning page.

The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BS degree in Digital Cinema:
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<table>
<thead>
<tr>
<th>Chicago Quarter</th>
<th>LSP 110 or LSP 111</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focal Point</td>
<td>LSP 112</td>
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<tr>
<td>Writing</td>
<td>WRD 103 and WRD 104</td>
</tr>
<tr>
<td>Quantitative Reasoning &amp; Technological Literacy</td>
<td>LSP 120 &amp; LSP 121</td>
</tr>
<tr>
<td>Note</td>
<td>This proficiency can be met through exams at QRC. Please see QRC note below for more information.</td>
</tr>
</tbody>
</table>

### Sophomore Year

| Multiculturalism in the US | LSP 200 |

### Junior Year

| Experiential Learning | Required |

### Senior Year

| Capstone | DC 398 |

### Learning Domains

<table>
<thead>
<tr>
<th>Arts and Literature (AL)</th>
<th>3 Courses Required:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 2 Courses Chosen from MCS 207, MCS 208, MCS 209, ANI 206</td>
<td></td>
</tr>
<tr>
<td>- 1 Additional Course</td>
<td></td>
</tr>
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<table>
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<th>2 Courses Required</th>
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<td>(See note below)</td>
<td></td>
</tr>
</tbody>
</table>

| Scientific Inquiry (SI) | 1 SI Lab Course Required |

| Self, Society and the Modern World (SSMW) | 3 Courses Required |

<table>
<thead>
<tr>
<th>Understanding the Past (UP)</th>
<th>2 Courses Required</th>
</tr>
</thead>
</table>

| Other | 1 of the PI or RD courses must be an ethics course. Recommended choices are DC/GAM/IT 228 (PI), PHL 248/MGT 248 (PI) or REL228/MGT 228 (RD) |

**Quantitative Reasoning and Technological Literacy:** All CDM students must complete the placement exam for Quantitative Reasoning and Technological Literacy. Students must complete the one course into which they place (LSP 120 or LSP 121). Students who complete both LSP 120 and LSP 121 take one less Domain course. Students may not apply the course reduction to any Domain where only one course is required, and if taken within the SI Domain, the reduction cannot be applied to the SI Lab requirement.

**Note:** Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the JYEL requirement.

**Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.**

The representation of the following **Course Requirements** on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

### First Year

<table>
<thead>
<tr>
<th>ANI 105</th>
<th>Intro to Visual Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC 101</td>
<td>Screenwriting for Majors</td>
</tr>
<tr>
<td>DC 110</td>
<td>Foundation of Cinema for Majors</td>
</tr>
</tbody>
</table>
DC 225  Digital Still Photography
DC 220  Editing I
6 Liberal Studies
1 Open Elective

**Second Year**
ANI 201  Animation I
VFX 200  Introduction to Visual Effects
DC 215  Digital Sound Design
ANI 230  3D Design & Modeling
DC 275  Cinematography
DC 210  Digital Cinema Production I
DC 222  Story Structure in Cinema
5 Liberal Studies

**Third Year**
VFX 278  Digital Compositing I
DC 315  Advanced Sound Design
ANI 260  Motion Graphics
ANI 231  3D Animation
DC 375  Advanced Cinematography
DC 310  Digital Cinema Production II
5 Liberal Studies
1 Open Elective

**Fourth Year**
VFX 378  Digital Compositing II
DC 320  Editing II
DC 325  Color Correction
ANI 310  Motion Capture Workshop
DC 398  Digital Cinema Capstone
4 Liberal Studies
3 Open Elective

---

**Major Electives**

No major elective is required

---

**Open Electives**

Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a **CDM minor or other minors** are normally credited as open electives.

---

**Degree Requirements**

Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
between 3.700 and 3.849 will be graduated magna cum laude
of at least 3.850 will be graduated summa cum laude

For DePaul's policy on repeat courses and a complete list of academic policies see the DePaul Undergraduate Handbook.

Interactive Media (Joint with SoC)

The BS in Interactive Media degree prepares students for the expanding field of interaction design and its application to multimedia and web development. The base program integrates technical and artistic disciplines. Technical concepts and skills involve web markup languages, interactive scripting and human-centered design. The student also explores artistic areas of study such as communication design, animation, game design and cinema. A major in interactive media provides students with broad skills and expertise including:

- Develop well-designed web pages, sites, and interactive applications
- Design, code and create content for casual games
- Conduct usability tests for interactive web sites
- Employ visual design principles to express ideas and concepts
- Create prototypes for interactive displays

Online Learning Options

Many courses are available for review and playback via the CDM Course Online playback system (COL). If a course is COL-enabled, any student registered in the course has access to the course playback. Students are strongly encouraged to utilize the COL resource wherever available. Some undergraduate courses are offered online. However, CDM currently does not offer any undergraduate program completely online. For more information on online learning at CDM visit the Online Learning page.

The Liberal Studies program is the general education portion of the curriculum at DePaul University. Students must earn a grade of D or better in all courses taken to satisfy these requirements. The only exceptions are WRD 103, WRD 104 and the capstone course (which is also considered a major field requirement) in which students need to earn a C- or better. Following are the specific requirements for the BS degree in Interactive Media:

<table>
<thead>
<tr>
<th>First Year Program</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chicago Quarter</strong></td>
</tr>
<tr>
<td><strong>Focal Point</strong></td>
</tr>
<tr>
<td><strong>Writing</strong></td>
</tr>
<tr>
<td><strong>Quantitative Reasoning &amp; Technological Literacy</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Multiculturalism in the US</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Junior Year</th>
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<tbody>
<tr>
<td><strong>Experiential Learning</strong></td>
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</tbody>
</table>

**Note:** Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the JYEL requirement.

*Effective Summer 2010, changes were made to the liberal studies domain requirements allowing for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.*

The representation of these course requirements on a year-by-year basis is just a suggestion. Students are free to take these courses in any order they choose, provided they have mastered the course-specific prerequisites.

**First Year**
- IT 130 The Internet and the Web
- ANI 105 Intro to Visual Design
- IM 270 User-Centered Web Design
- ART 260 Art and Design I: History, Concept, Structure
- IT 240 Introduction to Desktop Databases
- ANI 101 Animation for Non-Majors
  or ANI 201 Animation I
6 Liberal Studies

**Second Year**
- IT 223 Data Analysis
- IT 231 Web Development I
- IM 210 Introduction to Human-Computer Interaction
- IM 220 Interactive Media I
- IM 230 Scripting for Interactive Media
- ART 264 Typography I
- ANI 230 3D Design & Modeling
5 Liberal Studies
**Third Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>IM 360</td>
<td>User-Centered Evaluation</td>
</tr>
<tr>
<td>IM 320</td>
<td>Interactive Media II</td>
</tr>
<tr>
<td>IM 330</td>
<td>Advanced Scripting for Interactive Media</td>
</tr>
<tr>
<td>WRD 204</td>
<td>Technical Writing</td>
</tr>
<tr>
<td>GAM 244</td>
<td>Game Development I</td>
</tr>
<tr>
<td></td>
<td>4 Liberal Studies</td>
</tr>
<tr>
<td></td>
<td>3 Major Electives</td>
</tr>
</tbody>
</table>

**Fourth Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM 394</td>
<td>Human-Computer Interaction Capstone</td>
</tr>
<tr>
<td>or CSC 394</td>
<td>Software Projects (Capstone)</td>
</tr>
<tr>
<td></td>
<td>4 Liberal Studies</td>
</tr>
<tr>
<td></td>
<td>2 Major Elective</td>
</tr>
<tr>
<td></td>
<td>5 Open Electives</td>
</tr>
</tbody>
</table>

**Major Electives**

Major electives can be chosen from the following list
Any 200- or 300-level CDM, ART or CMN course.

Any of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY 360</td>
<td>Theories of Learning and Cognition</td>
</tr>
<tr>
<td>PSY 375</td>
<td>Sensation and Perception</td>
</tr>
<tr>
<td>PSY 380</td>
<td>Industrial and Organizational Psychology</td>
</tr>
<tr>
<td>PSY 383</td>
<td>Psychology of Design</td>
</tr>
<tr>
<td>PSY 241</td>
<td>Research Methods I</td>
</tr>
<tr>
<td>PSY 242</td>
<td>Research Methods II</td>
</tr>
</tbody>
</table>

Students must earn a grade of C- or higher in all major elective courses.

**Open Electives**

Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. (Click here for details). Students must earn a grade of D or higher in all open elective courses. Courses that satisfy a CDM minor or other minors are normally credited as open electives.

**Degree Requirements**

Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)
- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude
- between 3.700 and 3.849 will be graduated magna cum laude
- of at least 3.850 will be graduated summa cum laude

For DePaul's policy on repeat courses and a complete list of academic policies see the [DePaul Undergraduate Handbook](#).
Minors

A minor is a combination of courses that provides a cohesive introduction to an area of study. Typically, courses taken to satisfy minor field requirements are credited as open electives; however, there are some instances where minor field courses may be used for credit in other areas of the students' curriculum. Grades for all courses, taken to fulfill a minor field requirement must be C or above. Grades of C- may be accepted for credit in the minor provided the minor GPA is 2.0 or above. A minimum of one-half of the courses required for a minor must be completed at DePaul University.

MINORS IN THE COLLEGE OF COMMERCE

Students enrolled in the College of Computing and Digital Media (CDM) may obtain a minor in Accounting, Business Administration, E-Business, Economics, Management, MIS, Marketing, and Pre-MBA. Please see the College of Commerce Section for Minor Requirements.

MINORS IN THE COLLEGE OF LIBERAL ARTS AND SCIENCES

Students enrolled in the College of Computing and Digital Media (CDM) may obtain a minor through the College of Liberal Arts and Sciences. Most Liberal Arts and Science departments offer minor concentrations of study. In general, a minor in a Liberal Arts and Sciences discipline consists of a set of introductory courses plus another set of more specialized courses. Most minors require six courses, some of which may also be used for credit in the Liberal Studies Program. For a complete list of minors offered through the College of Liberal Arts and Sciences, please consult that section of this online Bulletin.

MINORS IN THE COLLEGE OF COMPUTING AND DIGITAL MEDIA

Computer technology is an omnipresent part of our world, used in academic disciplines from physics to history to geography. **CDM offers several minors that will appeal to all DePaul University students.**

*Political science* and *geography* majors can pursue a minor in Data Analysis, Databases, or Data Visualization, which is important to understanding how to analyze census or GPS data.

*Communications* majors may be interested in Digital Cinema which will give you skills in creating videos for advertising.

Art majors interested in a career in graphics programming, animation or design may be interested in CDM's tech-focused minors in Animation or Computer Graphics Software Development.

An academic foundation in E-Commerce Technology, Networks or Information Systems can give *Commerce* students an edge in a tough job market.

There are other examples too numerous to mention. So if you have questions or want advice on what minor is best for you, can email our CDM Undergraduate Services team: gocdm@cdm.depaul.edu or call them at: 312-362-8714.

Policies for Academic Minors

Students must:

1. earn at least a grade of C- in each minor course and a GPA of no less than 2.0 for all courses in the minor;
2. earn at least a cumulative GPA of 2.0 for all courses applied to the minor;
3. not select the pass/fail option for courses in the minor;
4. meet the following residency requirement: no more than 50% of the requirements of a
minor may be fulfilled by transfer credits, AP credit, IB credit of CLEP credit.

Finally, students cannot earn a minor in their major program. Courses required to fulfill a minor are determined by the unit in which the minor resides.

CDM Minors for CDM Students

To obtain a minor in CDM when the major is also in CDM:

1. Satisfy all requirements for the major
2. Satisfy all requirements for the minor
3. Students must take at least 6 courses in the minor area that do not count towards their CDM major

Note: If you have already taken some of the courses listed under your minor on this page, work with your advisor to choose other courses within the same program area, ie. NT minor would look under NT major courses and Computer Graphics Software Development would look under Computer Graphics Courses, in order to have 6 distinct courses.

- Animation Minor
- Computer Graphics Software Development
- Computer Science
- Data Analysis and Data Mining
- Database
- Data Visualization Development
- Digital Cinema
- E-Commerce Technology
- Game Design
- Game Programming
- Interactive Media
- Information and Computing in the Modern World
- Information Systems
- Information Technology
- Network Technologies
- Screenwriting
- Security
- Security in the Electronic World
- Software Engineering
- Sound Design
- Visual Computing
- Visual Effects

CDM Minor Requirements

Animation Minor

ANI 101 Animation for Non-Majors
or ANI 201 (not both) Animation I
ANI 230 3D Design & Modeling
ANI 231 3D Animation
ANI 206 History of Animation

3 courses from the following list: (at least 1 must be ANI)
DC 201 Introduction to Screenwriting
DC 210 Digital Cinema Production I
DC 220 Editing I
Any ANI course
## Computer Graphics Software Development Minor

**Liberal Studies**
- GPH 211  Perceptual Principles for Digital Environments I
- GPH 212  Perceptual Principles for Digital Environments II

**Course Requirements**
- CSC 261  Programming Languages I: C/C++
- CSC 262  Programming Languages II: C/C++
- CSC 393  Data Structures in C++
- GPH 329  Computer Graphics Development II
- GPH 339  Advanced Rendering Techniques
- GPH 372  Principles of Computer Animation

## Computer Science Minor

- CSC 241  Introduction to Computer Science I
  and CSC 242  Introduction to Computer Science II
  and CSC 224  Java for Programmers
  or
  - CSC 211  Programming in Java I
  - CSC 212  Programming in Java II
  - CSC 309  Object-Oriented Programming in C++
  or
  - CSC 261  Programming Languages I: C/C++
  - CSC 262  Programming Languages II: C/C++
  - CSC 224  Java for Programmers
- CSC 393  Data Structures in C++
  or CSC 383  Data Structures and Algorithms in Java
- MAT 140  Discrete Mathematics I
- CSC 373  Computer Systems I
- CSC 374  Computer Systems II

## Data Analysis and Data Mining Minor

- IT 240  Introduction to Desktop Databases
- IT 223  Data Analysis
- CSC 324  Data Analysis and Statistical Software II
- CSC 367  Introduction to Data Mining
- CSC 334  Advanced Data Analysis
- 2 CDM Electives

## Database Minor

- CSC 211  Programming in Java I
  and CSC 212  Programming in Java II
- IT 223  Data Analysis
- IT 240  Introduction to Desktop Databases
- CSC 352  Database Programming
- CSC 367  Introduction to Data Mining
- 1 CDM Elective
Data Visualization Development Minor

**Liberal Studies**
GPH 211  Perceptual Principles for Digital Environments I
GPH 212  Perceptual Principles for Digital Environments II

**Course Requirements**
CSC 261  Programming Languages I: C/C++
CSC 262  Programming Languages II: C/C++
CSC 323  Data Analysis
CSC 393  Data Structures in C++
GPH 329  Computer Graphics Development II
GPH 372  Principles of Computer Animation
GPH 380  Visualization

Digital Cinema Minor

DC 205  Foundations of Cinema
DC 225  Digital Still Photography
DC 201  Introduction to Screenwriting
DC 220  Editing I
3 courses from the following list:
ANI 101  Animation for Non-Majors
DC 210  Digital Cinema Production I
DC 270  Topics in Digital Cinema
GAM 224  Introduction to Game Design
DC 215  Digital Sound Design
DC 275  Cinematography
DC 310  Digital Cinema Production II
DC 320  Editing II
DC 389  The Big Picture: The Entertainment Industry

E-Commerce Technology Minor

IT 130  The Internet and the Web
CSC 211  Programming in Java I
CSC 212  Programming in Java II
IT 230  Building Internet Applications
ECT 330  Advanced Internet Application Development
IM 210  Introduction to Human-Computer Interaction
1 course from the following list:
ECT 355  Internet Systems: Collaboration, Commerce, and Media
ECT 360  Introduction to XML
ECT 365  Web Server Operations

Game Design Minor

DC 201  Introduction to Screenwriting
ANI 105  Intro to Visual Design
ANI 101  Animation for Non-Majors
or ANI 201  Animation I
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANI 230</td>
<td>3D Design &amp; Modeling</td>
</tr>
<tr>
<td>GAM 224</td>
<td>Introduction to Game Design</td>
</tr>
<tr>
<td>or GAM 226</td>
<td>Game Design for Majors</td>
</tr>
<tr>
<td>GAM 244</td>
<td>Game Development I</td>
</tr>
<tr>
<td>GAM 245</td>
<td>Game Development II</td>
</tr>
</tbody>
</table>

**Game Programming Minor**

- GAM 224 Introduction to Game Design
- or GAM 226 Game Design for Majors
- GAM 244 Game Development I
- GAM 245 Game Development II
- GAM 374 Action Games Programming

2 courses from the following list:

- ANI 230 3D Design & Modeling
- GPH 321 Computer Graphics Development I
- GPH 329 Computer Graphics Development II
- GPH 350 Digital Modeling II

Any other 300-Level GAM or GPH course

**Information and Computing in the Modern World Minor**

- ECT 350 Internet, Commerce and Society
- HCI 201 Multimedia and the World Wide Web
- IT 201 Introduction to Information Systems
- IT 215 Analysis and Design Techniques
- CSC 223 The Impact of Computing Technology on Our Lives
- or IT 228 Ethics in Computer Games and Cinema
- or CSC 208 The Computer and Social Responsibility
- or IS 208 Information Technology, Economy and Society
- IS 356 Knowledge Management Systems
- or IS 374 Management Support Systems
- or IT 398 Topics in Global Information Technology

**Interactive Media Minor**

**Required Courses**

- HCI 201 Multimedia and the World Wide Web
- or IT 130 The Internet and the Web
- IM 210 Introduction to Human-Computer Interaction
- ANI 105 Intro to Visual Design
- or GPH 211 Perceptual Principles for Digital Environments
- IM 220 Interactive Media I
- IM 270 User-centered Web Design

2 courses from the following list:

- IM 222 Information Visualization
- IM 208 Virtual Worlds and Online Communities
- IM 230 Scripting for Interactive Media
- IM 320 Interactive Media II
- IM 330 Advanced Scripting for Interactive Media
- IT 231 Web Development I
- IM 320 Interactive Media II
<table>
<thead>
<tr>
<th><strong>Information Systems Minor</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 240 Introduction to Desktop Databases</td>
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<tr>
<td>IT 201 Introduction to Information Systems</td>
</tr>
<tr>
<td>IT 215 Analysis and Design Techniques</td>
</tr>
<tr>
<td>IS 372 Fundamentals of Software Project Management</td>
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<tr>
<td>IS 373 Introduction to Large Systems Implementation</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Information Technology Minor</strong></th>
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</thead>
<tbody>
<tr>
<td>IT 130 The Internet and the Web</td>
</tr>
<tr>
<td>IT 231 Web Development I</td>
</tr>
<tr>
<td>IT 240 Introduction to Desktop Databases</td>
</tr>
<tr>
<td>IT 263 Applied Networks and Security</td>
</tr>
<tr>
<td>or TDC 261 Basic Communication Systems</td>
</tr>
<tr>
<td>IT 215 Analysis and Design Techniques</td>
</tr>
<tr>
<td>1 CDM Elective</td>
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</tbody>
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<table>
<thead>
<tr>
<th><strong>Network Technology Minor</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 211 Programming in Java I</td>
</tr>
<tr>
<td>or CSC 261 Programming Languages I:C/C++</td>
</tr>
<tr>
<td>CSC 212 Programming in Java II</td>
</tr>
<tr>
<td>or CSC 262 Programming Language II:C/C++</td>
</tr>
<tr>
<td>IT 201 Introduction to Information Systems</td>
</tr>
<tr>
<td>IT 263 Applied Networks and Security</td>
</tr>
<tr>
<td>TDC 362 Principles of Data Communication</td>
</tr>
<tr>
<td>TDC 363 Introduction to Local Area Networks</td>
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<td>TDC 365 Network Interconnection Technologies</td>
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<thead>
<tr>
<th><strong>Screenwriting Minor</strong></th>
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</thead>
<tbody>
<tr>
<td>DC 201 Introduction to Screenwriting</td>
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<tr>
<td>DC 205 Foundations of Cinema</td>
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<tr>
<td>DC 301 Advanced Screenwriting I</td>
</tr>
<tr>
<td>DC 302 Advanced Screenwriting II</td>
</tr>
<tr>
<td>DC 303 Advanced Screenwriting III</td>
</tr>
<tr>
<td>DC 304 Topics in Screenwriting</td>
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</tbody>
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<thead>
<tr>
<th><strong>Security Minor</strong></th>
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<tbody>
<tr>
<td>CSC 211 Programming in Java I</td>
</tr>
<tr>
<td>and CSC 212 Programming in Java II</td>
</tr>
<tr>
<td>or CSC 261 Programming Language I: C/C++</td>
</tr>
<tr>
<td>and CSC 262 Programming Language II:C/C++</td>
</tr>
<tr>
<td>CSC 233 Codes and Cyphers</td>
</tr>
<tr>
<td>or CSC 333 Cryptology</td>
</tr>
<tr>
<td>CNS 378 Host and Information Security</td>
</tr>
<tr>
<td>CNS 320 Computer Forensic and Incident Response</td>
</tr>
<tr>
<td>CNS 228 Legal, Ethical and Social Issues in Information Security</td>
</tr>
<tr>
<td>CNS 340 Fundamentals of Information Assurance</td>
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</tbody>
</table>
## Security in the Electronic World Minor

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 130</td>
<td>The Internet and the Web</td>
</tr>
<tr>
<td>and IT 231</td>
<td>Web Development I</td>
</tr>
<tr>
<td>and IT 232</td>
<td>Web Development II</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 261</td>
<td>Programming Language I: C/C++</td>
</tr>
<tr>
<td>and CSC 262</td>
<td>Programming Language II: C/C++</td>
</tr>
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</table>

or

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 241</td>
<td>Introduction to Computer Science I</td>
</tr>
<tr>
<td>and CSC 242</td>
<td>Introduction to Computer Science II</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 211</td>
<td>Programming in Java I</td>
</tr>
<tr>
<td>and CSC 212</td>
<td>Programming in Java II</td>
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</table>

## Software Engineering Minor

<table>
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<tr>
<th>Course</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>CSC 261</td>
<td>Programming Languages I: C/C++</td>
</tr>
<tr>
<td>and CSC 262</td>
<td>Programming Languages II: C/C++</td>
</tr>
<tr>
<td>and CSC 224</td>
<td>Java for Programmers</td>
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</table>

or

<table>
<thead>
<tr>
<th>Course</th>
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</tr>
</thead>
<tbody>
<tr>
<td>CSC 241</td>
<td>Introduction to Computer Science I</td>
</tr>
<tr>
<td>and CSC 242</td>
<td>Introduction to Computer Science II</td>
</tr>
<tr>
<td>and CSC 224</td>
<td>Java for Programmers</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 211</td>
<td>Programming in Java I</td>
</tr>
<tr>
<td>CSC 212</td>
<td>Programming in Java II</td>
</tr>
<tr>
<td>and then</td>
<td>Data Structures and Algorithms in Java</td>
</tr>
</tbody>
</table>

## Sound Design Minor

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC 215</td>
<td>Digital Sound Design</td>
</tr>
<tr>
<td>DC 312</td>
<td>Music for Film and Video</td>
</tr>
<tr>
<td>DC 313</td>
<td>Production Sound</td>
</tr>
<tr>
<td>DC 315</td>
<td>Advanced Digital Sound Design</td>
</tr>
</tbody>
</table>

3 courses from the following list

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAM 250</td>
<td>Digital Sound for Computer Games</td>
</tr>
<tr>
<td>DC 317</td>
<td>Advanced Sound Mixing for Cinema</td>
</tr>
<tr>
<td>DC 318</td>
<td>Advanced Dialogue Recording and Editing</td>
</tr>
<tr>
<td>DC 319</td>
<td>Advanced Sound Effects Recording and Editing</td>
</tr>
<tr>
<td>DC 313</td>
<td>Sound for Multimedia</td>
</tr>
<tr>
<td>DC 203</td>
<td>History of Motion Picture Sound</td>
</tr>
</tbody>
</table>

## Visual Effects Minor

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANI 230</td>
<td>3D Design &amp; Modeling</td>
</tr>
<tr>
<td>ANI 379</td>
<td>Advanced 3D Compositing</td>
</tr>
</tbody>
</table>
Visual Computing Minor

MAT 140 Discrete Mathematics I  
**or** MAT 220 Linear Algebra with Applications  
**or** 1 quarter of Calculus (Prerequisite for CSC 381)  
IT 223 Data Analysis (Prerequisite for CSC 367)  
CSC 381 Introduction to Digital Image Processing  
CSC 382 Applied Image Analysis  
IT 300 Research Experience  
CSC 367 Introduction to Data Mining (IT 223 requirement)

Professional Development

The College of Computing and Digital Media established the Institute for Professional Development in 1985 to offer certificate programs designed to meet the needs of both individuals and businesses in the Chicagoland area. These non-degree offerings provide intensive training in a wide variety of areas, with each standalone certificate program addressing a different set of theoretical concepts and practical skills. Emphasis is placed on gaining practical experience through a combination of lectures and demonstrations complemented by laboratory exercises and homework assignments. Certificate programs are typically taught by a team of instructors, that includes both full-time faculty and part-time instructors from industry. The programs require a substantial commitment of time, as most meet two nights per week and in the morning on approximately half of the Saturdays during the program.

For application and registration information pertaining to the certificate programs offered by the Institute for Professional Development, please call the Institute office at (312) 362-6282.

Current certificate program offerings include:

**IPD 356 Web Development with Ajax Technologies Program**  
A 7-week program covering Web development with Ajax technologies

**IPD 357 Wireless LAN Security Program**  
An 8-week program covering the latest solutions in wireless LAN security

**IPD 358 SharePoint Developer Program**  
A 10-week comprehensive program covering Microsoft SharePoint development

**IPD 359 Web Development with Python Program**  
A 5-week program covering Web development with the Python programming language.

**IPD 360/460 SQL Server Business Intelligence Program**  
An 11-week in-depth program covering SQL Server analysis services, integration services, and reporting services

**IPD 363 SQL Server Database Administration Program**
An 11-week in-depth program covering database administration using SQL Server

**IPD 364 Lightweight Java Web Development Program**
An 8-week comprehensive program covering open-source, lightweight Java enterprise Web development using POJOs (Plain Old Java Objects)

**IPD 365 Ruby on Rails Program**
A 8-week in-depth program covering Web development using Ruby on Rails

**IPD 366 Java Web Services Program**
A 7-week concentrated program covering service-oriented architecture and the development of Web services using Java

**IPD 370 Advanced SQL Program**
A 2-week program covering advanced Structured Query Language (SQL) features

**IPD 380 IT Project Management Program**
A 10-week comprehensive program covering best practices in IT project management

**IPD 382 Java Developer Program**
A 10-week comprehensive program covering object-oriented applications development using Java

**IPD 389 .NET Developer Program**
A 10-week comprehensive program covering .NET technologies

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**Combined Bachelor/Master Degrees**

Academically gifted students may choose to enroll in the combined degree program. This dual degree program allows students to combine any CDM bachelor's degree with any CDM master's degree following the structure outlined below.

**Program Structure**

Students in the combined degree program take a maximum of three graduate level courses that count toward both their bachelor's and master's degree requirements. Students may enroll in graduate level coursework in the junior and senior year only. Students in the combined degree program will receive the bachelor's degree after meeting all graduation requirements including the standard 192 undergraduate credit hours. The master's degree is awarded after the student completes 10 additional graduate courses (40 credit hours), instead of the standard 13 courses (52 credit hours).

**Admission Criteria**

- Minimum of 6 courses (24 credit hours) completed at DePaul
- GPA of 3.3 or higher in courses taken at DePaul
- Endorsement of faculty advisor

In order to apply for the BS/MS combined degree program, your faculty advisor must send an e-mail recommendation to Becky Krochmal. The recommendation should include your full name, student ID number, and the BS and MS degrees you wish to apply for.

Bachelor of Arts in Computing students who are enrolled via the School for New Learning are eligible for this program. Interested students who meet the admission criteria for a combined degree should contact Kenn Skorupa at SNL or Becky Krochmal at CDM for more information.

**Maintaining Good Standing**
- Each student's cumulative GPA and course grades will be reviewed after each Autumn, Winter, and Spring Quarter.
- The student and Faculty Advisor will be notified when the student's cumulative GPA falls below 3.3 or when the student receives less than a C- in graduate level course (X-course).
- If a student's cumulative GPA falls below 3.3, the student must earn a term GPA of 3.3 or above in the following quarter to stay active. If the student does not achieve a 3.3 term GPA, then the student will be dismissed from the combined program and resume the traditional BA/BS. As long as the student's cumulative GPA is below 3.3, the student must continue to achieve at least a 3.3 term GPA in all following quarters or face dismissal. If, at any point, the student's cumulative GPA is once again 3.3 or higher, term requirements no longer apply.
- If a student does not maintain good standing, they will be dismissed from the Combined Degree and returned to normal undergraduate degree seeking status. Any graduate courses passed before dismissal will not be counted toward graduate credit and may not be retaken (if the student does pursue graduate study, other graduate courses must be substituted). If dismissed students wish to apply to a CDM graduate degree program, they may do so following normal CDM Admission procedures, but will still be required to take 13 graduate courses for a MS degree.

**Bachelor's Degree to Master's Degree Transition**

If, upon completion of the bachelor's degree, the student did not meet all prerequisites for the master's degree, then the student will need to complete (course, test or waiver) the missing prerequisites for the chosen master's Degree. If, while still in the undergraduate degree phase, the student receives less than a C- in graduate level course (X-course), the X-course cannot count towards the MS/MA Degree.

**Designing a Course of Study**

It is extremely important that the student and faculty advisor work together on a course of study immediately upon admission to the Combined Degree Program.

This course of study may include which undergraduate classes to avoid taking in order to take the graduate version. Failure to put together a solid plan can lead to extra coursework and a lengthening of the Combined Degree program.

It is advisable for the student and advisor to enter the proposed plan of study in the student communication record on the CDM intranet so it is available to the student and CDM faculty and staff.

**Registering for Master's Degree Courses**

Students will register for "Combined Degree Course" each time they wish to take a Master's level course using the Combined Degree Registration Form which must be signed by their faculty advisor.
Courses

Please visit Campus Connection at https://campusconnect.depaul.edu for current course information. If you do not have a password for Campus Connection you may log on as a guest. Once you are on Campus Connection please select Course Catalog followed by the department.