Course Catalog

College of Computing and Digital Media Undergraduate Studies

Winter/Spring 2009-2010
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General Information

Please use the menu items to the left for current catalog navigation. Access archived catalogs by choosing the link to the right.
College of Computing and Digital Media (CDM)

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

Advising Staff

JOHN GLATZ
Director of Advising

CARRIE JODELKA
Academic Advisor
Facilities

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

Admission

First Year Student Applicants

Deadlines And Requirements

1. 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
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 De Paul, 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 De Paul.

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 De Paul 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.
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 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 7-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.

**IPD 392  Telecommunications Program**
An 11-week intensive program focusing on the configuration, implementation and ongoing support of telecommunications systems and networks.

**IPD 394  Java EE Developer Program**
A 10-week in-depth program covering enterprise-wide applications development using Java EE.

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**Transfer Credit**

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, 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.
CDM Minor Requirements

Animation Minor

ANI 101  
or ANI 201 (not both)
ANI 230  
ANI 231  
ANI 206
3 courses from the following list: (at least 1 must be ANI)
DC 201  
DC 210  
DC 220
Any ANI course

Computer Graphics Software Development Minor

Liberal Studies
GPH 211  
GPH 212
Course Requirements
CSC 261  
CSC 262  
CSC 393  
GPH 329  
GPH 339  
GPH 372

Computer Science Minor
CSC 241  
and CSC 242  
and CSC 224
or
CSC 211  
and CSC 212  
and CSC 309
or
CSC 261  
and CSC 262  
and CSC 224  
CSC 393  
or CSC 383  
MAT 140  
CSC 373  
CSC 374

Data Analysis and Data Mining Minor
IT 240  
IT 223
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
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>CSC 212</td>
<td>Programming in Java II</td>
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<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>
<tr>
<td></td>
<td>1 course from the following list:</td>
</tr>
<tr>
<td>ECT 355</td>
<td>Internet Systems: Collaboration, Commerce, and Media</td>
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<td>ECT 360</td>
<td>Introduction to XML</td>
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<td>ECT 365</td>
<td>Web Server Operations</td>
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**Game Design Minor**

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<th>Course Code</th>
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<tr>
<td>DC 201</td>
<td>Introduction to Screenwriting</td>
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<tr>
<td>ANI 105</td>
<td>Intro to Visual Design</td>
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<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 Modeling</td>
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<tr>
<td>GAM 224</td>
<td>Introduction to Game Design</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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<td>Introduction to Game Design</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>
<tr>
<td></td>
<td>2 courses from the following list:</td>
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<td>ANI 230</td>
<td>3D 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>
<tr>
<td></td>
<td>Any other 300-Level GAM or GPH course</td>
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**Interactive Media Minor**

**Required Courses**

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<th>Course Code</th>
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<td>IM 210</td>
<td>Introduction to Human-Computer Interaction</td>
</tr>
<tr>
<td>IM 220</td>
<td>Interactive Media I</td>
</tr>
<tr>
<td>IM 230</td>
<td>Scripting for Interactive Media</td>
</tr>
<tr>
<td>IM 270</td>
<td>User-centered Web Design</td>
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<tr>
<td></td>
<td>3 courses from the following list:</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>IM 360</td>
<td>User-Centered Evaluation</td>
</tr>
<tr>
<td>ANI 101</td>
<td>Animation for Non-Majors</td>
</tr>
<tr>
<td>ANI 105</td>
<td>Intro to Visual Design</td>
</tr>
<tr>
<td>ART 260</td>
<td>Art and Design I: History, Concept, Structure</td>
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<td>ART 264</td>
<td>Typography I</td>
</tr>
<tr>
<td>DC 205</td>
<td>Foundations of Cinema</td>
</tr>
<tr>
<td>GAM 244</td>
<td>Game Development I</td>
</tr>
<tr>
<td>IT 130</td>
<td>The Internet and the Web</td>
</tr>
<tr>
<td>IT 230</td>
<td>Building Internet Applications</td>
</tr>
</tbody>
</table>
**Information Systems Minor**

- **CSC 211** Programming in Java I
- **IT 230** Building Internet Applications
- **IT 240** Introduction to Desktop Databases
- **IT 130** The Internet and the Web
- **IT 201** Introduction to Information Systems
- **IT 215** Analysis and Design Techniques
- **IM 210** Introduction to Human-Computer Interaction

1 course from the following list:
- **IS 371** Introduction to L.T. System Management
- **IS 372** Fundamentals of Software Project Management
- **IS 373** Introduction to Large Systems Implementation
- **IS 374** Management Support Systems

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**Information Technology Minor**

- **IT 130** The Internet and the Web
- **IT 130** Building Internet Applications
- **IT 240** Introduction to Desktop Databases
- **TDC 361** Basic Communication Systems
- **or IT 263** Applied Networks and Security
- **IT 215** Analysis and Design Techniques

1 CDM Elective

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**Network Technology Minor**

- **CSC 211** Programming in Java I
- **or CSC 261** Programming Languages I: C/C++
- **CSC 212** Programming in Java II
- **or CSC 262** Programming Language II: C/C++
- **IT 201** Introduction to Information Systems
- **IT 263** Applied Networks and Security
- **TDC 362** Principles of Data Communication
- **TDC 363** Introduction to Local Area Networks
- **TDC 365** Network Interconnection Technologies

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**Screenwriting**

- **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

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**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++
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<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>

**Software Engineering Minor**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</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>
</tr>
<tr>
<td>or 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>
<tr>
<td>or 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>
<tr>
<td>CSC 383</td>
<td>Principles and Practices of Software Engineering</td>
</tr>
<tr>
<td>SE 325</td>
<td>Object-Oriented Modeling</td>
</tr>
<tr>
<td>SE 330</td>
<td>Object-Oriented Software Development</td>
</tr>
</tbody>
</table>

**Visual Computing Minor**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<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</td>
<td>(Prerequisite for CSC 381)</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>CSC 384</td>
<td>Introduction to Computer Vision</td>
</tr>
<tr>
<td>CSC 367</td>
<td>Introduction to Data Mining (IT 223 requirement)</td>
</tr>
</tbody>
</table>
Programs in CDM

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.

EHAB AL-SHAER, Ph.D.
Associate Professor
Old Dominican University

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

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.
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GERALD GORDON, Ph.D.
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PETER HASTINGS, Ph.D.
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University of Michigan, Ann Arbor

HENRY HARR, Ph.D.
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Illinois Institute of Technology

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University of Illinois at Chicago

LOUIS IBARRA, Ph.D.
Assistant Professor
University of Victoria

RADHA JAGADEESAN, Ph.D.
Professor
Cornell University

XIAOPING JIA, Ph.D.
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STEVE JOST, Ph.D.
Associate Professor
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MARTIN KALIN, Ph.D.
Professor and Associate Dean
Northwestern University

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

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EVELYN LULIS, Ph.D.
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Associate Professor
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CRAIG MILLER, Ph.D.
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University of Michigan

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Associate Professor
The University of Arizona

BAMSHAD MOBASHER, Ph.D.
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Iowa State University

THOMAS MUSCARELLO, Ph.D.
Associate Professor
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MAKOTO NAKAYAMA, Ph.D.
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University of North Carolina at Chapel Hill

JOHN ROGERS, Ph.D.
Associate Professor
University of Chicago

MARCUS SCHAEFER, Ph.D.
Associate Professor
University of Chicago

ERIC SCHWABE, Ph.D.
Associate Professor
Massachusetts Institute of Technology

ERIC SEDGWICK, Ph.D.
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University of Texas

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Associate Professor
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Concordia University

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DePaul University

HAROLD STREETER, M.S.
Instructor
Brown University

NORMA SUTCLIFFE, Ph.D.
Associate Professor
University of California at Los Angeles

NORIKO TOMURO, Ph.D.
Associate Professor
DePaul University

CURT WHITE, Ph.D.
Associate Professor
Wayne State University
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

Have you ever been interested in learning how to create interactive web environments, put together computer animation, or do you want to know more about codes and ciphers as featured in the movies Enigma or Windtalkers? Then CDM has some great courses for you! CDM offers dozens of courses in many domains of the Liberal Studies Program. You can experiment with computer graphics, programming and e-commerce technology and fulfill a requirement at the same time. Many of these courses also serve as gateway courses into more advanced CDM courses. Who knows, you might just like it and want to come back for more!

If you have a specific interest, in something like how the Internet functions, you can click here for a list of courses by topic.

CDM Liberal Studies Courses for CDM students

- Rule 1 -
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:

1. The course is NOT required as part of the students major

EXAMPLES:
• A Computer Graphics and Motion Technology (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 E-Commerce Technology (ECT) major CAN take GPH 211 to satisfy the arts and literature requirement of the LSP.

2. The course qualifies for a liberal studies program domain that IS required by the students major.
   EXAMPLES:
   • A Computer Science (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.
   • Any CDM 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 CTI students.

Rule 2:
No double counting allowed for CDM classes by CDM students.
EXAMPLES:
• 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.

CDM Liberal Studies Courses by Liberal Studies Area

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 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: Elective**

**CSC 200 Survey of Computing**
Learn about careers using computers and pick up some skills to help you manage your own
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 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.

**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/Quantitative**

**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.

**Scientific Inquiry: Quantitative**

**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 250 Computers and Human Intelligence**
Study how computers are designed to think like people.

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

**IT 223 Data Analysis**

**Self, Society, and the Modern World**
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 discussed.

**CDM Liberal Studies Courses by Course 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.

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**Computer Graphics and Motion Technology**

**ANI 101 Animation for Non-Majors**  
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**ANI 206 History of Animation**  
History of Animation: This course is an introduction to the history and development of the field of animation.

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**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 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.

**Design your own Web Site**

**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**

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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.

**GAM 206 History of Games**
This class 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.

**Combined Bachelor/Master Degrees**

The Combined Degree Programs at CDM are designed to allow academically gifted students to complete both a bachelor and master’s degree in a shorter amount of time than by taking each degree separately.

Please note: This version of the degree replaces all previous combinations and current students will be migrated to this plan.

**Combined Degree Program Structure**

The shortened structure of combined degree programs is accomplished by students taking three Master’s level courses in their junior and senior year that count toward both their bachelor and masters degree requirements at the same time. Students in this program will receive both a bachelor degree, after 192 undergraduate credit hours, and a masters degree after 10 more graduate courses (40 hours), instead of the standard 13 (52 hours).

**How to apply:**

In order to apply for the BS/MS program, your faculty advisor must send an e-mail recommendation to Becky Krochmal at bkrochmal@cdm.depaul.edu. The recommendation should include, the student full name, id number and the BS and MS degrees you wish to apply for.

Admission criteria are as follows:

- Minimum of 6 course/24 credit hours completed
- GPA of 3.3 or higher
- Endorsement of faculty advisor this should be sent via e-mail to bkrochmal@cdm.depaul.edu

**Maintaining Good Standing**

- Student GPAs and grades will be reviewed after Autumn, Winter, and Spring Quarter
- 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)

**Dismissal Policy**

If a student's cumulative GPA falls below 3.3, the student must attain 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.
It is important to note:

**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 admissions procedures, but will still be required to take 13 graduate courses for a MS degree.**

**BA/BS-MA/MS Transition**

If, upon completion of the BA/BS Degree, the student did not meet all prerequisites for the MA/MS Degree, then the student will need to complete (course, test or waiver) the missing prerequisites for the chosen MA/MS 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 MA/MS 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.

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**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 Systems
- Information Technology
- Network Technologies
CDM Minor Requirements

Animation Minor

ANI 101  Animation for Non-Majors
or ANI 201 (not both)  Animation I
ANI 230  3D 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 240</td>
<td>Introduction to Desktop Databases</td>
</tr>
<tr>
<td>IT 223</td>
<td>Data Analysis</td>
</tr>
<tr>
<td>CSC 324</td>
<td>Data Analysis and Statistical Software II</td>
</tr>
<tr>
<td>CSC 367</td>
<td>Introduction to Data Mining</td>
</tr>
<tr>
<td>CSC 334</td>
<td>Advanced Data Analysis</td>
</tr>
<tr>
<td>2 CDM Electives</td>
<td></td>
</tr>
</tbody>
</table>

## Database Minor

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</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>
</tr>
<tr>
<td>IT 223</td>
<td>Data Analysis</td>
</tr>
<tr>
<td>IT 240</td>
<td>Introduction to Desktop Databases</td>
</tr>
<tr>
<td>CSC 352</td>
<td>Database Programming</td>
</tr>
<tr>
<td>CSC 367</td>
<td>Introduction to Data Mining</td>
</tr>
<tr>
<td>1 CDM Elective</td>
<td></td>
</tr>
</tbody>
</table>

## Data Visualization Development Minor

### Liberal Studies

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

### Course Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<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>CSC 323</td>
<td>Data Analysis</td>
</tr>
<tr>
<td>CSC 393</td>
<td>Data Structures in C++</td>
</tr>
<tr>
<td>GPH 329</td>
<td>Computer Graphics Development II</td>
</tr>
<tr>
<td>GPH 372</td>
<td>Principles of Computer Animation</td>
</tr>
<tr>
<td>GPH 380</td>
<td>Visualization</td>
</tr>
</tbody>
</table>

## Digital Cinema Minor

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC 205</td>
<td>Foundations of Cinema</td>
</tr>
<tr>
<td>DC 225</td>
<td>Digital Still Photography</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>3 courses from the following list:</td>
<td></td>
</tr>
<tr>
<td>ANI 101</td>
<td>Animation for Non-Majors</td>
</tr>
<tr>
<td>DC 210</td>
<td>Digital Cinema Production I</td>
</tr>
<tr>
<td>DC 270</td>
<td>Topics in Digital Cinema</td>
</tr>
<tr>
<td>GAM 224</td>
<td>Introduction to Game Design</td>
</tr>
<tr>
<td>DC 215</td>
<td>Digital Sound Design</td>
</tr>
<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</th>
<th>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>
<tr>
<td></td>
<td>1 course from the following list:</td>
</tr>
<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</th>
<th>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 Modeling</td>
</tr>
<tr>
<td>GAM 224</td>
<td>Introduction to Game Design</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</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAM 224</td>
<td>Introduction to Game Design</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>
<tr>
<td></td>
<td>2 courses from the following list:</td>
</tr>
<tr>
<td>ANI 230</td>
<td>3D 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>
<tr>
<td></td>
<td>Any other 300-Level GAM or GPH course</td>
</tr>
</tbody>
</table>

## Interactive Media Minor

### Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM 210</td>
<td>Introduction to Human-Computer Interaction</td>
</tr>
<tr>
<td>IM 220</td>
<td>Interactive Media I</td>
</tr>
<tr>
<td>IM 230</td>
<td>Scripting for Interactive Media</td>
</tr>
<tr>
<td>IM 270</td>
<td>User-centered Web Design</td>
</tr>
<tr>
<td></td>
<td>3 courses from the following list:</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>IM 360</td>
<td>User-Centered Evaluation</td>
</tr>
<tr>
<td>ANI 101</td>
<td>Animation for Non-Majors</td>
</tr>
<tr>
<td>ANI 105</td>
<td>Intro to Visual Design</td>
</tr>
<tr>
<td>ART 260</td>
<td>Art and Design I: History,Concept,Structure</td>
</tr>
<tr>
<td>ART 264</td>
<td>Typography I</td>
</tr>
</tbody>
</table>
DC 205     Foundations of Cinema
GM 244     Game Development I
IT 130     The Internet and the Web
IT 230     Building Internet Applications

Information Systems Minor

CSC 211     Programming in Java I
IT 230     Building Internet Applications
IT 240     Introduction to Desktop Databases
IT 130     The Internet and the Web
IT 201     Introduction to Information Systems
IT 215     Analysis and Design Techniques
IM 210     Introduction to Human-Computer Interaction
1 course from the following list:
IS 371     Introduction to L.T. System Management
IS 372     Fundamentals of Software Project Management
IS 373     Introduction to Large Systems Implementation
IS 374     Management Support Systems

Information Technology Minor

IT 130     The Internet and the Web
IT 130     Building Internet Applications
IT 240     Introduction to Desktop Databases
TDC 361     Basic Communication Systems
or IT 263     Applied Networks and Security
IT 215     Analysis and Design Techniques
1 CDM Elective

Network Technology Minor

CSC 211     Programming in Java I
or CSC 261     Programming Languages I:C/C++
CSC 212     Programming in Java II
or CSC 262     Programming Language II:C/C++
IT 201     Introduction to Information Systems
IT 263     Applied Networks and Security
TDC 362     Principles of Data Communication
TDC 363     Introduction to Local Area Networks
TDC 365     Network Interconnection Technologies

Screenwriting

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

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

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
CSC 384 Introduction to Computer Vision
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 Bachelor of Arts in Computing is offered jointly by the College of Computing and Digital Media and the School for New Learning. This degree is designed for working adults at least 24 years of age, who wish to obtain credit for their careers as technology professionals, and gain new skills in
problem-solving, design, testing and communicating. The BA in Computing differs from the BS in Computer Science in that the BS places heavier emphasis on traditional programming and formal algorithmic analysis. The BA in computing program focuses on relating program design and computing to organizational dynamics and human relations. It helps to prepare students to analyze and negotiate the social, ethical, and technological systems of a business and to act as a liaison between the technical and non-technical sides of a company.

The computer competences in the BA in Computing program cover a variety of topics directly related to current industry practice. These competences include skills and knowledge in information systems, data communications, databases, software engineering, and the design and evaluation of user interfaces. In the general studies area of the program, competences are tied to the humanities, the natural sciences and the social sciences. Students may select competences in the arts, design, ecology, human biology, multicultural relations, and politics and so on that are tailored to their individual goals and interests. The BA in Computing is completed by satisfying a total of fifty (50) competences; this amounts to the equivalent of 140 quarter hours. Typically these competences are satisfied through course work or equivalent work experience.

For a copy of the Program Guide for the Bachelor of Arts in Computing or to make reservations for a BA in Computing Information Session, please call either the College of Computing and Digital Media at (312)362-8381 or the School for New Learning at (312)362-8001.

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Information Technology

The Bachelor of Arts degree 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. They will acquire:

- 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.

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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.

### BA in Information Technology

<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>
### Junior Year

<table>
<thead>
<tr>
<th>Experiential Learning</th>
<th>Required</th>
</tr>
</thead>
</table>

### Senior Year

<table>
<thead>
<tr>
<th>Capstone</th>
<th>Required</th>
</tr>
</thead>
</table>

### Learning Domains

<table>
<thead>
<tr>
<th>Arts and Literature (AL) (not more than 2 courses from the same department/program)</th>
<th>3 courses required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophical Inquiry (PI)</td>
<td>2 courses required</td>
</tr>
</tbody>
</table>
| Religious Dimensions (RD) | 1 Religious and Ethical Questions  
| | 1 Religious Traditions |
| Scientific Inquiry (SI) | 1 SI Lab or SI Quantitative-Lab required |
| Self, Society and the Modern World (SSMW) (not more than 2 courses from the same department/program) | 3 courses required |
| Understanding the Past (UP) | 2 courses required (each from a different category) |
| Other | 1 of the PI or RD courses must be an ethics course  
| | CSC 208 strongly recommended, PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD) recommended |

**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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. [Click here](#) to view the CDM courses that qualify for Liberal Studies credit.

### Four-year schedule of courses:

#### First Year

**Major Field Courses (4)**

- **IT 130** The Internet and the Web [Self Placement Test](#)
- **IT 201** Introduction to Information Systems
- **IT 240** Introduction to Desktop Databases [Self Placement Test](#)
- **ICS 200** Introduction to Business

**Liberal Studies (7)**

- Open Elective (1)

#### Second Year

**Major Field Courses (7)**

- **CSC 223** The Impact of Computing Technology On Our Lives
- **IM 210** Introduction to Human-Computer Interaction
- **IT 231** Web Development I
- **IT 232** Web Development II
IT 223  Data Analysis  **Self Placement Test**
or CSC 239  Personal Computing
IT 263  Applied Networks and Security
or TDC 361  Basic Communication Systems
CMNS 212  Small Group Communication
or CMNS 220  Public Speaking

*Liberal Studies* (5)

**Third Year**

**Major Field Courses** (4)

WRD 204  Technical Writing
or WRD 301  Writing in Workplace Contexts

3 Technical Grounding Courses from this list:

IT 330  User Interface Development for Interactive Systems
IT 320  Content Management Systems
IT 215  Analysis and Design Techniques  **Self Placement Test**
CSC211  Programming in Java I  **Self Placement Test**
CSC212  Programming in Java II
CSC261  Programming Languages I: C/C++
CSC262  Programming Languages II: C/C++
ECT 330  Advanced Internet Application Development
TDC363  Introduction to Local Area Networks
GPH211  Perceptual Principles for Digital Environments I
GPH212  Perceptual Principles for Digital Environments II
GAM244  Game Development I
GAM245  Game Development II
SE 325  Principles and Practices of Software Engineering  **Self Placement Test**

300-Level CDM Electives (1)
Any DePaul Class 200-level and higher (2)
*Liberal Studies* (5)

**Fourth Year**

**Major Field Courses** (1)

CSC 378  Software Projects for Community Clients*
CSC 399  Independent Study*

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

Any 200-level or higher DePaul Elective (3)
300-level CDM Electives (1)
*Liberal Studies* (1)
Open Electives
Open Electives may be taken from any department or program. These are the only courses that may be taken under the pass/fail option (see the undergraduate Bulletin for details). If you wish to pursue a minor, most minor field courses will be credited as open electives.

*Note:* Grades for all courses in the students major (i.e. non-Liberal Studies and non-Open Elective) must be ‘C’ or better. Grades of ‘C-' may be accepted provided the overall grade point average in the major is 2.0 or better.

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 Bachelor of Science in Computer Games Development is ideal for creative-minded and technically adept individuals with a passion for crafting interactive experiences. It offers career opportunities for skilled, creative programmers, designers, and animators.

The BS in Computer Games 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 Games 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.

The BS in Computer Games Development offers a Production & Design concentration and a concentration in Game Programming.

What students will learn from this degree program:

- game programming
- game physics and game engines
- computer graphics and rendering
- 3D modeling and animation
- game design and level design

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>
</tbody>
</table>

**Sophomore Year**

| Multiculturalism in the US | LSP 200 |

**Junior Year**

| Experiential Learning | Required |

**Senior Year**

| Capstone                  | GAM 395 Game Development Project II |

**Learning Domains**

<table>
<thead>
<tr>
<th>Arts and Literature (AL) (not more than 2 courses from the same department/program)</th>
<th>3 courses required</th>
<th>One of the courses must be DC 201</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophical Inquiry (PI)</td>
<td>2 courses required</td>
<td>One course must be DC 228/IT 228</td>
</tr>
<tr>
<td>Religious Dimensions (RD)</td>
<td>1 Religious and Ethical Questions</td>
<td>1 Religious Traditions</td>
</tr>
<tr>
<td>Scientific Inquiry (SI)</td>
<td>One SI Lab or SI Quantitative-Lab required</td>
<td></td>
</tr>
<tr>
<td>Self, Society and the Modern World (SSMW) (not more than 2 courses from the same department/program)</td>
<td>3 courses required</td>
<td></td>
</tr>
<tr>
<td>Understanding the Past (UP)</td>
<td>2 courses required (each from a different category)</td>
<td></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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

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### Four-year schedule of courses for the Production & Design Concentration First Year

#### Major Field Courses (5)

- GAM 224 Introduction to Game Design
- 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

#### Liberal Studies (7) (DC 201 required as one of the Liberal Studies courses)

#### Second Year

#### Major Field Courses (6)

- MAT 150 Calculus I
- GAM 341 Introduction to Level Design
ANI 230 3D Modeling
CSC 261 Programming Languages I: C/C++
CSC 262 Programming Languages II: C/C++
GAM 230 Intro to Game Production

Gaming Elective (1)
Liberal Studies (5)

**Third Year**

**Major Field Courses (4)**

ANI 231 3D Animation
GAM 374 Action Games Programming
IM 220 Interactive Media I
WRD 204 Technical Writing

Gaming Electives (4)
Liberal Studies (4) - (GAM 228 or IT 228 Required as one of the Liberal Studies courses)

**Fourth Year**

**Major Field Courses (4)**

GAM 333 The Business of Games
GAM 392 Game Modification Workshop
GAM 394 Game Development Project I
GAM 395 Game Development Project II

Gaming Electives (1)
Liberal Studies (3)
Open Electives (4)

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**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).

<table>
<thead>
<tr>
<th>BS in Computer Games Development</th>
<th>Game Programming Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**First Year Program**

<table>
<thead>
<tr>
<th>Chicago Quarter</th>
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</thead>
<tbody>
<tr>
<td>Focal Point</td>
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</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**
Four-year schedule of courses for the **Game Programming Concentration**:

**First Year**

**Major Field Courses (5)**

ANI 105  Intro to Visual Design  
GAM 224  Introduction to Game Design  
GAM 244  Game Development I  
MAT 150  Calculus I  
MAT 151  Calculus II

**Liberal Studies (7)** - (DC 201 and ANI 101 Required as two of the Liberal Studies courses)

**Second Year**

**Major Field Courses (5)**

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 Modeling

**Gaming Electives (2)**

**Liberal Studies (5)**

**Third Year**

**Major Field Courses (6)**
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

Gaming Electives (2)

*Liberal Studies* (4) - (GAM 228 or IT 228 required as one of the Liberal Studies courses)

**Fourth Year**

*Major Field Courses* (5)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPH 389</td>
<td>Real-Time Graphics Techniques</td>
</tr>
<tr>
<td>GAM 376</td>
<td>Artificial Intelligence for Computer Games</td>
</tr>
<tr>
<td>GAM 392</td>
<td>Game Modification Workshop</td>
</tr>
<tr>
<td>GAM 394</td>
<td>Game Development Project I</td>
</tr>
<tr>
<td>GAM 395</td>
<td>Game Development Project II</td>
</tr>
</tbody>
</table>

Gaming Electives (1)

*Liberal Studies* (3)

Open Electives (3)

**Gaming Electives**

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

**Open Electives**

Open Electives may be taken from any department or program. These are the only courses that may be taken under the pass/fail option (see the undergraduate Bulletin for details). If you wish to pursue a minor, most minor field courses will be credited as open electives.

**Note:** Grades for all courses in the students major (i.e. non-Liberal Studies and non-Open Elective) must be 'C' or better. Grades of 'C-' may be accepted provided the overall grade point average in the major is 2.0 or better.

---

**Computer Graphics and Motion Technology (Joint with CIM)**

The *Bachelor of Science in Computer Graphics and Motion Technology* unites the technical and aesthetic principals of digitally created motion graphics and animation. Graduates of the program may find opportunities in diverse fields, from motion pictures or architecture to computer gaming or medicine.

The *BS in Computer Graphics and Motion Technology* provides DePaul students with an interest in mathematics/computer science as well as visual design, an academic foundation in both the technical and aesthetic elements of computer graphics.

The Bachelor of Science degree program offers two options of study:

- The Developer concentration is geared toward students who are considering careers in graphic software development, with course work focused in programming languages.
graphic software development, with course work focused in programming languages (C/C++) and mathematics (calculus and algebra), in addition to animation and computer graphics.

- The Technical Designer concentration is geared toward students interested in the visual aspects, including lighting setup, shader development and character rigging.

What students learn is this degree program:

- Design and analysis of mathematics/computer science principals for computer graphic design.
- Beginning and advance digital photography.
- History and theory of graphic design (color theory, perception).
- Usability and human-computer interaction.

---

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).

BS in Computer Graphics and Motion Technology
Developer Concentration

<table>
<thead>
<tr>
<th>First Year Program</th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Chicago Quarter</strong></td>
<td>LSP 110 or LSP 111</td>
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</tr>
<tr>
<td><strong>Quantitative Reasoning &amp; Technological Literacy</strong></td>
<td>Not Required</td>
</tr>
</tbody>
</table>

**Sophomore Year**

| **Multiculturalism in the US** | LSP 200 |

**Junior Year**

| **Experiential Learning** | Required |

**Senior Year**

| **Capstone** | Required |

<table>
<thead>
<tr>
<th>Learning Domains</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arts and Literature (AL)</strong> (not more than 2 courses from the same department/program)</td>
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<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>1 Religious and Ethical Questions 1 Religious Traditions</td>
</tr>
<tr>
<td><strong>Scientific Inquiry (SI)</strong></td>
<td>One SI Lab or SI Quantitative-Lab required</td>
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<td><strong>Self, Society and the Modern World (SSMW)</strong> (not more than 2 courses from the same department/program)</td>
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</tr>
<tr>
<td><strong>Understanding the Past (UP)</strong></td>
<td>2 Courses Required (each from a different category)</td>
</tr>
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<td><strong>Other</strong></td>
<td>1 of the PI or RD courses must be an ethics course CSC 208 strongly recommended, PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD) recommended</td>
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(C/C++) and mathematics (calculus and algebra), in addition to animation and computer graphics.

- The Technical Designer concentration is geared toward students interested in the visual aspects, including lighting setup, shader development and character rigging.

What students learn is this degree program:

- Design and analysis of mathematics/computer science principals for computer graphic design.
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- History and theory of graphic design (color theory, perception).
- Usability and human-computer interaction.

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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).

BS in Computer Graphics and Motion Technology
Developer Concentration

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**Sophomore Year**

| **Multiculturalism in the US** | LSP 200 |

**Junior Year**

| **Experiential Learning** | Required |

**Senior Year**

| **Capstone** | Required |

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<td>One SI Lab or SI Quantitative-Lab required</td>
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</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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

Four-year schedule of courses for the

Developer Concentration:

First Year

Major Field Courses (9)

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
MAT 150 Calculus I
or MAT 160 Calculus for Mathematics and Science Majors I
or MAT 170 Calculus I with Scientific Applications (Recommended)
MAT 151 Calculus II

Liberal Studies (3)

Second Year

Major Field Courses (5)

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

Liberal Studies (7)

Third Year

Major Field Courses (4)

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

Graphics Electives (3) - from the list at the bottom of the page.
Liberal Studies (5)

Fourth Year

Major Field Courses (4)
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).

BS in Computer Graphics and Motion Technology
Technical Designer Concentration

<table>
<thead>
<tr>
<th>First Year Program</th>
<th></th>
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<tbody>
<tr>
<td>Chicago Quarter</td>
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<table>
<thead>
<tr>
<th>Junior Year</th>
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</thead>
<tbody>
<tr>
<td>Experiential Learning</td>
<td>Required</td>
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</table>

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

<table>
<thead>
<tr>
<th>Learning Domains</th>
<th></th>
</tr>
</thead>
</table>
| **Arts and Literature (AL)** (not more than 2 courses from the same department/program) | 3 courses required  
Two of the courses must be ART 102 and ART 106 |
| **Philosophical Inquiry (PI)** | 2 courses required |
| **Religious Dimensions (RD)** | 1 Religious and Ethical Questions  
1 Religious Traditions |
| **Scientific Inquiry (SI)** | 1 SI Lab or SI Quantitative-Lab required |
| **Self, Society and the Modern World (SSMW)** (not more than 2 courses from the same department/program) | 3 courses required |
| **Understanding the Past (UP)** | 2 courses required (each from a different category) |
| **Other** | 1 of the PI or RD courses must be an ethics course  
CSC 208 strongly recommended, PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD) recommended |

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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

Four-year schedule of courses for the **Technical Designer Concentration**

**First Year**

*Major Field Courses* (6)

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

*Liberal Studies* (4) - ART 102 and ART 106 are required.

**Second Year**

*Major Field Courses* (7)

GPH 250  Digital Modeling I
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

*Liberal Studies* (5)

**Third Year**

*Major Field Courses* (5)

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

*Graphics Electives* (1) - from the list at the bottom of the page.

*Liberal Studies* (6)

**Fourth Year**

*Major Field Courses* (2)

GPH 395  Computer Graphics Senior Project
GPH 388  Production Pipeline Techniques

*Graphics Electives* (4) - from the list at the bottom of the page.
Graphics Electives List
Students may take any of the following courses as long as they were not previously used to satisfy the computer graphics and animation core:

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 250 Digital Modeling I
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 department or program. These are the only courses that may be taken under the pass/fail option (see the undergraduate Bulletin for details). If you wish to pursue a minor, most minor field courses will be credited as open electives.

Note: Grades for all courses in the students major (i.e. non-Liberal Studies and non-Open...
Elective) must be 'C' or better. Grades of 'C-' may be accepted provided the overall grade point average in the major is 2.0 or better.

Computer Science

Graduates of the Bachelor of Science in Computer Science program are skilled problem solvers, sought-after programmers and software developers, and computer systems experts. They use their skills to improve or develop computer applications in a wide variety of areas.

Computer Science is a field that spans diverse areas including:

- Security and Cryptography
- Robotics
- Data Mining and Databases
- Distributed and Mobile Systems
- Intelligent Systems and gaming
- Computation Biology, and more

The BS in Computer Science at DePaul provides essential training in the foundations of computing, data storage and information processing. With this foundation, graduates of the program can easily adapt to and create new information technologies, new computing paradigms, and new ideas for applying computer systems.

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

What students learn in the BS in Computer Science program:

- Programming and software development skills, the technical tools of the IT trade
- An understanding of modern Computer Systems, which you will use 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.

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.

<table>
<thead>
<tr>
<th>BS in Computer Science</th>
<th>Standard Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Year Program</strong></td>
<td></td>
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<tr>
<td>Chicago Quarter</td>
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<td>WRD 103 and WRD 104</td>
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<td>Quantitative Reasoning &amp; Technological Literacy</td>
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<tr>
<td><strong>Sophomore Year</strong></td>
<td></td>
</tr>
</tbody>
</table>
Multiculturalism in the US  

LSP 200

Junior Year

Experiential Learning  
Required

Senior Year

Capstone  
CSC 394

Learning Domains

| Arts and Literature (AL)  
| (not more than 2 courses from the same department/ program) | 3 courses required |
| Philosophical Inquiry (PI) | 2 courses required  
| One of the courses must be CSC 208 |
| Religious Dimensions (RD) | 1 Religious and Ethical Questions  
| 1 Religious Traditions |
| Scientific Inquiry (SI) | 1 SI Lab or SI Quantitative-Lab required |
| Self, Society and the Modern World (SSMW) (not more than 2 courses from the same department/ program) | 3 courses required |
| Understanding the Past (UP) | 2 courses required (each from a different category) |

**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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

The coursework for the B.S. in Computer Science consists of:

- **The DePaul University Liberal Studies Program** : (19 courses, not including the Senior Capstone),
- **Major Field courses** (24 courses or 96 credits, including the Senior Capstone), and
- **Open Elective courses** (5 courses or 20 credits).

**Note:** CSC 208 The Computer and Social Responsibility must be taken to satisfy the Philosophical Inquiry Liberal Studies requirement.

The **18 required courses** provide training in the following fundamental areas:

A. mathematical tools  
B. problem solving, algorithms, and structured programming  
C. modeling and object-oriented programming  
D. computer systems

They also include:

E. the senior capstone course  
F. the communication requirement

**A. Mathematical Tools (3 Courses)**

MAT 140  
Discrete Mathematics I

MAT 141  
Discrete Mathematics II

IT 223  
Data Analysis
### B. Problem Solving, algorithms, and structured programming (3 Courses):

<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>CSC 242</td>
<td>Introduction to Computer Science II</td>
</tr>
<tr>
<td>CSC 321</td>
<td>Design and Analysis of Algorithms</td>
</tr>
</tbody>
</table>

### C. Modeling and Object-Oriented Programming (4 courses):

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 224</td>
<td>Java for Programmers <strong>Self Placement Test</strong></td>
</tr>
<tr>
<td>CSC 309</td>
<td>Object-Oriented Programming in C++</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>
<tr>
<td>SE 350</td>
<td>Object-Oriented Software Development</td>
</tr>
</tbody>
</table>

### D. Computer Systems (5 courses):

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 348</td>
<td>Introduction to Compiler Design</td>
</tr>
<tr>
<td>CSC 355</td>
<td>Database Systems</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 376</td>
<td>Distributed Systems</td>
</tr>
</tbody>
</table>

### E. Capstone (1 course):

<table>
<thead>
<tr>
<th>Course</th>
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</tr>
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<tbody>
<tr>
<td>CSC 394</td>
<td>Software Projects</td>
</tr>
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</table>

### F. Communication (2 courses):

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>WRD 204</td>
<td>Technical Writing</td>
</tr>
<tr>
<td>CMNS 220</td>
<td>Public Speaking</td>
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</table>

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**Major Field Courses (6)**

At least 4 of the 6 Major Field courses (i.e. 16 out of 24 credits) must be taken from the list of "**ADVANCED MAJOR FIELD COURSES**" (see below).

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**Major Field Courses**

**Introductory Major Field Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</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
The courses are listed by area; there is NO requirement that the 4 courses must be from the same or from different areas.

Artificial Intelligence

CSC 357  Expert Systems
CSC 358  Symbolic Programming
CSC 389  Foundations of Artificial Intelligence

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

Data Storage
CSC 352  Database Programming
CSC 353  Advanced Database Concepts

Human-Computer Interaction
CSC 305  Graphical User Interface Implementation
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  Principles and Practices of 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
ECT 365  Web Server Operations
Open Electives (5 courses)

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

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.

### BS in Computer Science
Software Engineering Concentrations

<table>
<thead>
<tr>
<th><strong>First Year Program</strong></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><strong>Sophomore Year</strong></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><strong>Junior Year</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experiential Learning</strong></td>
<td>Required</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Senior Year</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capstone</strong></td>
<td>CSC 394</td>
</tr>
</tbody>
</table>

### Learning Domains

<table>
<thead>
<tr>
<th><strong>Arts and Literature (AL)</strong> (not more than 2 courses from the same department/ program)</th>
<th>3 courses required</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Philosophical Inquiry (PI)</strong></td>
<td>2 courses required</td>
</tr>
<tr>
<td><em>One of the courses must be CSC 208</em></td>
<td></td>
</tr>
<tr>
<td><strong>Religious Dimensions (RD)</strong></td>
<td>1 Religious and Ethical Questions</td>
</tr>
<tr>
<td><strong>Scientific Inquiry (SI)</strong></td>
<td>1 Religious Traditions</td>
</tr>
<tr>
<td><strong>Self, Society and the Modern World (SSMW)</strong> (not more than 2 courses from the same department/ program)</td>
<td>3 courses required</td>
</tr>
<tr>
<td><strong>Understanding the Past (UP)</strong></td>
<td>2 courses required (each from a different category)</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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

Program Requirements
The coursework for the BS in CS: SE Concentration consists of the DePaul University Liberal Studies Program (19 courses), Major Field courses (24 courses or 96 credits), and Open Elective courses (5 courses or 20 credits).

Note: CSC 208 The Computer and Social Responsibility must be taken to satisfy the Philosophical Inquiry Liberal Studies requirement.

The Major Field courses for the BS in CS Software Engineering (SE) Concentration consists of 21 required (4 credit) courses and 3 SE Concentration elective courses (or 12 credits). The 21 required courses include the 18 courses required for the BS in Computer Science (see above) together with an additional 3 required SE courses and 3 SE concentration electives courses.

The three required SE courses are:

SE 325 Principles and Practices of Software Engineering
SE 330 Object Oriented Modeling
SE 352 Object-Oriented Enterprise Application Development

SE Concentration Elective courses (3 courses or 12 credits):

CNS 340 Fundamentals of Information Assurance
CSC 305 Graphical User Interface Implementation
SE 333 Software Testing
SE 368 Software Measurement and Project Estimation

Open Electives may be taken from any department or program. These are the only courses that may be taken under the pass/fail option. If you wish to pursue a minor, most minor field courses will be credited as open electives.

Note: Grades for all courses in the students major (i.e. non-Liberal Studies and non-Open Elective) must be 'C' or better. Grades of 'C-' may be accepted provided the overall grade point average in the major is 2.0 or better.

Information Assurance and Security Engineering

The Bachelor of Science in Information Assurance and Security Engineering prepares students to evaluate and manage an organization's computer, information and network security, as well as develop a solid information technology infrastructure.

A student in the BS in Information Assurance and Security Program will learn the fundamentals of information security and security engineering, security infrastructure design and implementation as well as the impact of security requirements on a business operation.

The BS in IASE program also emphasizes hands-on experience. IASE students learn to design, implement and manage various security infrastructure components 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.

What students learn from this program:
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:

**BS in Information Assurance and Security Engineering**

<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>
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</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>CNS 395</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning Domains</th>
<th></th>
</tr>
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<tbody>
<tr>
<td>Arts and Literature (AL)</td>
<td>3 courses required</td>
</tr>
<tr>
<td>(not more than 2 courses from the same department/program)</td>
<td></td>
</tr>
<tr>
<td>Philosophical Inquiry (PI)</td>
<td>2 courses required</td>
</tr>
<tr>
<td>Religious Dimensions (RD)</td>
<td>1 Religious and Ethical Questions</td>
</tr>
<tr>
<td></td>
<td>1 Religious Traditions</td>
</tr>
<tr>
<td>Scientific Inquiry (SI)</td>
<td>1 SI Lab or SI Quantitative-Lab required</td>
</tr>
<tr>
<td>Self, Society and the Modern World (SSMW)</td>
<td>3 courses required</td>
</tr>
<tr>
<td>(not more than 2 courses from the same department/program)</td>
<td></td>
</tr>
<tr>
<td>Understanding the Past (UP)</td>
<td>2 courses required (each from a different category)</td>
</tr>
<tr>
<td>Other</td>
<td>1 of the PI or RD courses must be an ethics course</td>
</tr>
<tr>
<td></td>
<td>CSC 208 strongly recommended, PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD) recommended</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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.
Four-year schedule of courses:

**First Year**

**Major Field Courses (6)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Self Placement Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 130</td>
<td>The Internet and the Web</td>
<td></td>
</tr>
<tr>
<td>IT 240</td>
<td>Introduction to Desktop Databases</td>
<td></td>
</tr>
<tr>
<td>IT 263</td>
<td>Applied Networks and Security</td>
<td></td>
</tr>
<tr>
<td>IT 231</td>
<td>Web Development I</td>
<td></td>
</tr>
<tr>
<td>CSC 233</td>
<td>Codes and Ciphers</td>
<td></td>
</tr>
<tr>
<td>MAT 140</td>
<td>Discrete Mathematics I</td>
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</tr>
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</table>

**Liberal Studies (6)**

**Second Year**

**Major Field Courses (7)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Self Placement Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 211</td>
<td>Programming in Java I</td>
<td></td>
</tr>
<tr>
<td>and</td>
<td>CSC 212 Programming in Java II</td>
<td></td>
</tr>
<tr>
<td>or</td>
<td>CSC 261 Programming Languages I: C/C++</td>
<td></td>
</tr>
<tr>
<td>and</td>
<td>CSC 262 Programming Languages II: C/C++</td>
<td></td>
</tr>
<tr>
<td>CSC 373</td>
<td>Computer Systems I</td>
<td></td>
</tr>
<tr>
<td>CNS 340</td>
<td>Fundamentals of Information Assurance (ex CSC 390)</td>
<td></td>
</tr>
<tr>
<td>TDC 375</td>
<td>Network Protocols</td>
<td></td>
</tr>
<tr>
<td>TDC 365</td>
<td>Network Interconnection Technologies</td>
<td></td>
</tr>
<tr>
<td>WRD 204</td>
<td>Technical Writing</td>
<td></td>
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</table>

**Liberal Studies (5)**

**Third Year**

**Major Field Courses (4)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDC 377</td>
<td>Fundamentals of Network Security</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>CMNS 212</td>
<td>Small Group Communication</td>
</tr>
<tr>
<td>or CMNS 220</td>
<td>Public Speaking</td>
</tr>
</tbody>
</table>

300-level CDM elective (1) -chosen in consultation with student's advisor.

**Liberal Studies (7)**

**Fourth Year**

**Major Field Courses (6)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Self Placement Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE 325</td>
<td>Principles and Practices of Software Engineering</td>
<td></td>
</tr>
<tr>
<td>TDC 379</td>
<td>Telecommunication and Network Security Practicum</td>
<td></td>
</tr>
<tr>
<td>CNS 228</td>
<td>Legal, Ethical and Social Issues in Information Security</td>
<td></td>
</tr>
<tr>
<td>CNS 394</td>
<td>Information Systems Security Engineering I</td>
<td></td>
</tr>
<tr>
<td>CNS 395</td>
<td>Information Systems Security Engineering II</td>
<td></td>
</tr>
<tr>
<td>ACC 101</td>
<td>Introduction to Accounting I</td>
<td></td>
</tr>
<tr>
<td>or FIN290</td>
<td>Finance for Non-Commerce Majors</td>
<td></td>
</tr>
</tbody>
</table>

300-level CDM elective (1) -chosen in consultation with student's advisor.

**Liberal Studies (1)**
Open Electives may be taken from any department or program. These are the only courses that may be taken under the pass/fail option (see the undergraduate Bulletin for details). If you wish to pursue a minor, most minor field courses will be credited as open electives.

**Note:** Grades for all courses in the students major (i.e. non-Liberal Studies and non-Open Elective) must be 'C' or better. Grades of 'C-' may be accepted provided the overall grade point average in the major is 2.0 or better.

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Information Systems

The Bachelor of Science in Information Systems program emphasizes both technical and managerial expertise. Its graduates start their careers in IT project management, systems analysis & design, database administration, helpdesk, enterprise systems administration, and user training.

DePaul’s BS in Information Systems provides students with a solid and diverse foundation in information technology, preparing for the changing technology demands of the business world.

The program is focused on the organizational and business application of computers and related technologies. Students within the IS program apply their knowledge of hardware, software, business processes and procedures to help organizations improve their performance and meet tactical and strategic goals.

Concentrations:

The BS in Information Systems offers two concentrations:

- Business Analysis
- Application Development

What students learn from this program:

- Systems analysis and design skills
- IT project management skills
- Supply chain management (SCM) and customer relationship management (CRM)
- Knowledge of enterprise systems
- Knowledge of systems architecture and design

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Concentration in Business Analysis

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 (Business Analyst Concentration):

---

First Year Program
Chicago Quarter
LSP 110 or LSP 111
Focal Point
LSP 112
Writing
WRD 103 and WRD 104
Quantitative Reasoning & Technological Literacy
Not Required

Sophomores Year
Multiculturalism in the US
LSP 200

Junior Year
Experiential Learning
Required

Senior Year
Capstone
Required

Learning Domains

<table>
<thead>
<tr>
<th>Category</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Literature (AL)</td>
<td>3 courses required</td>
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<td>2 courses required</td>
</tr>
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<td>Religious Dimensions (RD)</td>
<td>1 Religious and Ethical Questions</td>
</tr>
<tr>
<td></td>
<td>1 Religious Traditions</td>
</tr>
<tr>
<td>Scientific Inquiry (SI)</td>
<td>1 SI Lab or SI Quantitative-Lab required</td>
</tr>
<tr>
<td>Self, Society and the Modern World (SSMW)</td>
<td>3 courses required</td>
</tr>
<tr>
<td>(not more than 2 courses from the same department/ program)</td>
<td></td>
</tr>
<tr>
<td>Understanding the Past (UP)</td>
<td>2 courses required (each from a different category)</td>
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<tr>
<td>Other</td>
<td>1 of the PI or RD courses must be an ethics course</td>
</tr>
<tr>
<td></td>
<td>CSC 208 strongly recommended, PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD) recommended</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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

Four-year schedule of courses:

**First Year**

**Major Field Courses (5)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 201</td>
<td>Introduction to Information Systems</td>
</tr>
<tr>
<td>IT 130</td>
<td>The Internet and the Web <em>Self Placement Test</em></td>
</tr>
<tr>
<td>IT 240</td>
<td>Introduction to Desktop Databases <em>Self Placement Test</em></td>
</tr>
<tr>
<td>IT 263</td>
<td>Applied Networks and Security</td>
</tr>
<tr>
<td>IM 210</td>
<td>Introduction to Human-Computer Interaction</td>
</tr>
</tbody>
</table>

**Liberal Studies (7)**

**Second Year**
Major Field Courses (7)

IT 215 Analysis and Design Techniques Self Placement Test
IS 371 Introduction to I.T. System Management
IT 223 Data Analysis Self Placement Test
CMNS 212 Small Group Communication
or CMNS 220 Public Speaking
WRD 204 Technical Writing
or WRD 301 Writing in Workplace Contexts
IT 320 Content Management Systems
ACC 101 Introduction to Accounting I
or MKT 301 Principles of Marketing
or a Psychology Course
or a Management Course

Liberal Studies (5)

Third Year

Major Field Courses (4)

IS 372 Fundamentals of Software Project Management
IS 373 Introduction to Large Systems Implementation
IM 360 User-Centered Evaluation
IT 231 Web Development I
or CSC 211 Programming in Java I Self Placement Test

Liberal Studies (4)
Open Electives (4)

Fourth Year

Major Field Courses (4)

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

300-Level CDM electives (2) - chosen in consultation with your advisor.
Liberal Studies (3)
Open Electives (3)

Concentration in Application Development

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):

BS in Information Systems
Analyst and Developer Concentrations
First Year Program

Chicago Quarter
LSP 110 or LSP 111

Focal Point
LSP 112

Writing
WRD 103 and WRD 104

Quantitative Reasoning & Technological Literacy
Not Required

Sophomore Year

Multiculturalism in the US
LSP 200

Junior Year

Experiential Learning
Required

Senior Year

Capstone
Required

Learning Domains

Arts and Literature (AL)
(not more than 2 courses from the same department/program)
3 courses required

Philosophical Inquiry (PI)
2 courses required

Religious Dimensions (RD)
1 Religious and Ethical Questions
1 Religious Traditions

Scientific Inquiry (SI)
1 SI Lab or SI Quantitative-Lab required

Self, Society and the Modern World (SSMW)
(not more than 2 courses from the same department/program)
3 courses required

Understanding the Past (UP)
2 courses required (each from a different category)

Other
1 of the PI or RD courses must be an ethics course
CSC 208 strongly recommended, PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD) recommended

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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

Four-year schedule of courses:

First Year

Major Field Courses (5)

IT 201 Introduction to Information Systems
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

Liberal Studies (7)

Second Year
Major Field Courses (7)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 215</td>
<td>Analysis and Design Techniques Self Placement Test</td>
<td></td>
</tr>
<tr>
<td>CSC 211</td>
<td>Programming in Java I Self Placement Test</td>
<td></td>
</tr>
<tr>
<td>or CSC 261</td>
<td>Programming Languages I: C/C++</td>
<td></td>
</tr>
<tr>
<td>IM 210</td>
<td>Introduction to Human-Computer Interaction</td>
<td></td>
</tr>
<tr>
<td>CSC 212</td>
<td>Programming in Java II</td>
<td></td>
</tr>
<tr>
<td>or CSC 262</td>
<td>Programming Languages II: C/C++</td>
<td></td>
</tr>
<tr>
<td>IT 223</td>
<td>Data Analysis Self Placement Test</td>
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<tr>
<td>CSC 283</td>
<td>Data Structures and Algorithms in Java</td>
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<tr>
<td>WRD 204</td>
<td>Technical Writing</td>
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<tr>
<td>or WRD 301</td>
<td>Writing in Workplace Contexts</td>
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</table>

Liberal Studies (5)

Third Year

Major Field Courses (5)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECT 330</td>
<td>Advanced Internet Application Development</td>
<td></td>
</tr>
<tr>
<td>IS 372</td>
<td>Fundamentals of Software Project Management</td>
<td></td>
</tr>
<tr>
<td>ECT 355</td>
<td>Internet Systems: Collaboration, Commerce and Media</td>
<td></td>
</tr>
<tr>
<td>ECT 360</td>
<td>Introduction to XML</td>
<td></td>
</tr>
<tr>
<td>CMNS 212</td>
<td>Small Group Communication</td>
<td></td>
</tr>
<tr>
<td>or CMNS 220</td>
<td>Public Speaking</td>
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</table>

Liberal Studies (4)

Open Electives (3)

Fourth Year

Major Field Courses (4)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>CNS 340</td>
<td>Fundamentals of Information Assurance</td>
<td></td>
</tr>
<tr>
<td>IS 375</td>
<td>Object-Oriented Analysis and Design</td>
<td></td>
</tr>
<tr>
<td>SE 352</td>
<td>Object-Oriented Enterprise Application Development</td>
<td></td>
</tr>
<tr>
<td>IS 376</td>
<td>Information Systems Project</td>
<td></td>
</tr>
</tbody>
</table>

300-Level CDM electives (2) - chosen in consultation with your advisor.

Liberal Studies (3)

Open Electives (3)

Open Electives

Open Electives may be taken from any department or program. These are the only courses that may be taken under the pass/fail option (see the undergraduate Bulletin for details). If you wish to pursue a minor, most minor field courses will be credited as open electives.

Note: Grades for all courses in the students major (i.e. non-Liberal Studies and non-Open Elective) must be 'C' or better. Grades of 'C-' may be accepted provided the overall grade point average in the major is 2.0 or better.
Information Technology

The Bachelor of Science 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.

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>BS in Information Technology</th>
</tr>
</thead>
</table>

### First Year Program

<table>
<thead>
<tr>
<th></th>
<th>LSP 110 or LSP 111</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>

### Sophomore Year

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

### Junior Year

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

### Senior Year

<table>
<thead>
<tr>
<th></th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capstone</td>
<td>Required</td>
</tr>
</tbody>
</table>

(Any CDM-based Capstone)

### Learning Domains

<table>
<thead>
<tr>
<th>Learning Domains</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Literature (AL)</td>
<td>3 courses required</td>
</tr>
<tr>
<td>(not more than 2 courses from the same department/program)</td>
<td></td>
</tr>
<tr>
<td>Philosophical Inquiry (PI)</td>
<td>2 courses required</td>
</tr>
<tr>
<td>Religious Dimensions (RD)</td>
<td>1 Religious and Ethical Questions</td>
</tr>
<tr>
<td></td>
<td>1 Religious Traditions</td>
</tr>
<tr>
<td>Scientific Inquiry (SI)</td>
<td>1 SI Lab or SI Quantitative-Lab required</td>
</tr>
<tr>
<td>Self, Society and the Modern World (SSMW)</td>
<td>3 courses required</td>
</tr>
<tr>
<td>(not more than 2 courses from the same department/program)</td>
<td>One of the courses must be ECO 105</td>
</tr>
<tr>
<td>Understanding the Past (UP)</td>
<td>2 courses required (each from a different category)</td>
</tr>
<tr>
<td>Other</td>
<td>1 of the PI or RD courses must be an ethics course</td>
</tr>
<tr>
<td></td>
<td>CSC 208 strongly recommended, PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD) recommended</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.
Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

Four-year schedule of courses:

**First Year**

*Major Field Courses (6)*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Self Placement Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 130</td>
<td>The Internet and the Web</td>
<td></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></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>
</tbody>
</table>

*Liberal Studies (6)*

**Second Year**

*Major Field Courses (7)*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Self Placement Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 224</td>
<td>Java for Programmers</td>
<td></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></td>
</tr>
<tr>
<td>IT 223</td>
<td>Data Analysis</td>
<td></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>
<tr>
<td>or WRD 301</td>
<td>Writing in Workplace Contexts</td>
<td></td>
</tr>
</tbody>
</table>

*Liberal Studies (5)*

**Third Year**

*Major Field Courses (5)*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNS 378</td>
<td>Host and Information Security</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>

1 of the 4 CDM Electives of which at least 3 must be 300-level and at most one may be chosen from the restricted list below

*Liberal Studies (5) Required: ECO 105 Principles of Microeconomics*  

**Fourth Year**

*Major Field Courses (2)*
ACC 101  Introduction to Accounting I
or FIN 290  Finance for Non-Commerce Majors
Capstone  (Any CDM Capstone)

3 of the 4 CDM Electives of which at least 3 must be 300-level and at most one may be chosen from the restricted list below.

Liberal Studies (3)
Open Electives (5)

Restricted List of CDM Electives
(Only 1 CDM Elective may come from this list):

ANI 201  Animation I
ANI 230  3D Modeling
ANI 231  3D Animation
ANI 240  Animation Production I
GAM 244  Game Development I
GAM 245  Game Development II
GPH 211  Perceptual Principles for Digital Environments I
GPH 212  Perceptual Principles for Digital Environments II
GPH 213  Perceptual Principles for Digital Environments III
GPH 250  Digital Modeling I
GPH 259  Design Geometry
IM 210  Introduction to Human-Computer Interaction
IM 270  User-Centered Web Design
IT 320  Content Management Systems

Open Electives
Open Electives may be taken from any department or program. These are the only courses that may be taken under the pass/fail option (see the undergraduate Bulletin for details). If you wish to pursue a minor, most minor field courses will be credited as open electives.

Note: Grades for all courses in the students major (i.e. non-Liberal Studies and non-Open Elective) must be 'C' or better. Grades of 'C-' may be accepted provided the overall grade point average in the major is 2.0 or better.
- 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

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:

### BS in Interactive Media

#### 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>
</tbody>
</table>

#### Sophomore Year

| Multiculturalism in the US | LSP 200 |

#### Junior Year

| Experiential Learning | Required |

#### Senior Year

| Capstone | Required |

#### Learning Domains

- **Arts and Literature (AL)**
  - (not more than 2 courses from the same department/program)
  - 3 courses required
  - One of the courses must be DC 205

- **Philosophical Inquiry (PI)**
  - 2 courses required
  - One of the courses must be CSC 208 or IT 228

- **Religious Dimensions (RD)**
  - 1 Religious and Ethical Questions
  - 1 Religious Traditions

- **Scientific Inquiry (SI)**
  - 1 SI Lab or SI Quantitative-Lab required

- **Self, Society and the Modern World (SSMW)**
  - (not more than 2 courses from the same department/program)
  - 3 courses required
  - One of the courses must be PSY 105

- **Understanding the Past (UP)**
  - 2 courses required (each from a different category)

**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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot
Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

### Four-year schedule of courses:

**First Year**

**Major Field Courses (6)**

<table>
<thead>
<tr>
<th>Course</th>
<th>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>

**Liberal Studies (6)** - Required: PSY 105 Introductory Psychology I and DC 205 Foundations of Cinema

**Second Year**

**Major Field Courses (7)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 223</td>
<td>Data Analysis</td>
</tr>
<tr>
<td>IT 231</td>
<td>Web Development I</td>
</tr>
<tr>
<td>IM 210</td>
<td>Introduction to Human-Computer Interaction</td>
</tr>
<tr>
<td>IM 220</td>
<td>Interactive Media I</td>
</tr>
<tr>
<td>IM 230</td>
<td>Scripting for Interactive Media</td>
</tr>
<tr>
<td>ART 264</td>
<td>Typography I</td>
</tr>
<tr>
<td>ANI 230</td>
<td>3D Modeling</td>
</tr>
</tbody>
</table>

**Liberal Studies (5)** - Required: CSC 208 Computers and Social Responsibility or IT 228 Ethics in Computer Games and Cinema

**Third Year**

**Major Field Courses (5)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</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>
</tbody>
</table>

**IM Electives (3)**

**Liberal Studies (4)**

**Fourth Year**

**Major Field Courses (1)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM 394</td>
<td>Human-Computer Interaction Capstone Course</td>
</tr>
<tr>
<td>or CSC 394</td>
<td>Software Projects</td>
</tr>
</tbody>
</table>

**IM Electives (2)** - chosen in consultation with student's advisor

**Liberal Studies (4)**

**Open Electives (5)**
**IM Electives**
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

**Open Electives**
Open Electives may be taken from any department or program. These are the only courses that may be taken under the pass/fail option (see the undergraduate Bulletin for details). If you wish to pursue a minor, most minor field courses will be credited as open electives.

*Note:* Grades for all courses in the students major (i.e. non-Liberal Studies and non-Open Elective) must be 'C' or better. Grades of 'C-' may be accepted provided the overall grade point average in the major is 2.0 or better.

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**Mathematics / Computer Science (Joint with LA&S)**

Exceptional students with an interest in the highly theoretical nexus of math and computer science will find challenging opportunities from the **BS in Math and Computer Science** degree.

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 joint major 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.

What students learn from the program:

- 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.

The BS in Math and Computer Science consists of five parts:

- The DePaul Liberal Studies program (19 courses, not including the capstone course).
- Core Classes (14 courses)
- Advanced Classes (7 courses)
- Capstone (1 course)
- Open Electives (7 courses)

The courses in the Core build the necessary foundation in discrete and continuous mathematics, problem solving, algorithmic thinking and programming. The Advanced Classes allow the student to explore the different areas of mathematics and computer science in more depth.

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 Math and Computer Science.

### BS in Math and Computer Science

<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>

### Sophomore Year

| Multiculturalism in the US | LSP 200 |

### Junior Year

| Experiential Learning | Required |

### Senior Year

| Capstone | Required |

### Learning Domains

<table>
<thead>
<tr>
<th>Arts and Literature (AL) (not more than 2 courses from the same department/ program)</th>
<th>3 courses required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophical Inquiry (PI)</td>
<td>2 courses required</td>
</tr>
</tbody>
</table>
| Religious Dimensions (RD) | 1 Religious and Ethical Questions  
1 Religious Traditions |
| Scientific Inquiry (SI) | 1 SI Lab or SI Quantitative-Lab required |
| Self, Society and the Modern World (SSMW) (not more than 2 courses from the same department/ program) | 3 courses required |
| Understanding the Past (UP) | 2 courses required (each from a different category) |
1 of the PI or RD courses must be an ethics course
CSC 208 strongly recommended, PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD) recommended

**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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

---

**CORE CLASSES (14 courses)**

**Mathematical Foundations**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 140</td>
<td>Discrete Mathematics I</td>
</tr>
<tr>
<td>MAT 141</td>
<td>Discrete Mathematics II</td>
</tr>
<tr>
<td>MAT 260</td>
<td>Multivariable Calculus I</td>
</tr>
<tr>
<td>MAT 262</td>
<td>Linear Algebra</td>
</tr>
</tbody>
</table>

In addition, students must complete one of the following three-course sequences:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 150</td>
<td>Calculus I</td>
</tr>
<tr>
<td>and MAT 151</td>
<td>Calculus II</td>
</tr>
<tr>
<td>and MAT 152</td>
<td>Calculus III</td>
</tr>
<tr>
<td>or MAT 160</td>
<td>Calculus for Mathematics and Science Majors I</td>
</tr>
<tr>
<td>and MAT 161</td>
<td>Calculus for Mathematics and Science Majors II</td>
</tr>
<tr>
<td>and MAT 162</td>
<td>Calculus for Mathematics and Science Majors II</td>
</tr>
<tr>
<td>or MAT 170</td>
<td>Calculus I with Scientific Applications</td>
</tr>
<tr>
<td>and MAT 171</td>
<td>Calculus II with Scientific Applications</td>
</tr>
<tr>
<td>and MAT 172</td>
<td>Calculus III with Differential Equations</td>
</tr>
</tbody>
</table>

(MAT 147, MAT 148 and MAT 149 may also be used to satisfy this requirement)

**Problem Solving, algorithms, and structured programming**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 241</td>
<td>Introduction to Computer Science I</td>
</tr>
<tr>
<td>CSC 242</td>
<td>Introduction to Computer Science II</td>
</tr>
<tr>
<td>CSC 321</td>
<td>Design and Analysis of Algorithms</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>

**Object-Oriented Programming**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 224</td>
<td>Java for Programmers</td>
</tr>
<tr>
<td>or CSC 309</td>
<td>Object-Oriented Programming in C++</td>
</tr>
</tbody>
</table>

**Computer Systems**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 373</td>
<td>Computer Systems I</td>
</tr>
<tr>
<td>CSC 374</td>
<td>Computer Systems II</td>
</tr>
</tbody>
</table>
ADVANCED CLASSES (7 Courses)

Students can choose advanced computer science and mathematics classes from different areas including theory of computation, computational mathematics, artificial intelligence, data analysis, graphics, and computer vision. 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 choose seven courses from the following area lists. At least three of the courses have to be in computer science (or graphics) and at least three in mathematics. Courses not on this list need to be approved by an advisor. In particular, 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 Area**
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 |
| CSC 358 | Symbolic Programming |

**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 | Mathematica Modeling |

**Artificial Intelligence Area**
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
MAT 370 Advanced Linear Algebra
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
**CAPSTONE COURSES** (1 course)

Students can choose from several capstone courses, depending on their interest and coursework:

- **CSC 378** Software Projects for Community Clients
- **CSC 394** Software Projects
- **GPH 395** Computer Graphics Senior Project
- **MAT 398** Senior Capstone Seminar

Students need to make sure that they cover all prerequisites of their respective capstone (possibly using open electives).

---

**OPEN ELECTIVES** (7 courses)

Students choose seven (7) open electives. Open Electives may be taken from any department or program. These are the only courses that may be taken under the pass/fail option (see the undergraduate Bulletin for details). If you wish to pursue a minor, most minor field courses will be credited as open electives.

*Note:* Grades for all courses in the students major (i.e. non-Liberal Studies and non-Open Elective) must be 'C' or better. Grades of 'C-' may be accepted provided the overall grade point average in the major is 2.0 or better.

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Network Technologies

The **BS degree in Network Technology** trains professionals who meet the current industry demands for innovative network designs, and develop network applications and services for business enterprises and the network providers that serve them.

Students in DePaul’s **Network Technology Program** 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.

**Concentrations**

The degree features a **Standard Concentration**, as well as concentrations in **Network Security** and **Application Development**.

**What students learn from the program:**

- 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

**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 Concentration)

BS in Network Technology
Standard, Network Security, and Application Development Concentrations

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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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. [Click here](#) to view the CDM courses that qualify for Liberal Studies credit.
Four-year schedule of courses for the Standard Concentration:

**First Year**

*Major Field Courses (6)*

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

*Liberal Studies (6)*

**Second Year**

*Major Field Courses (6)*

- IT 223 Data Analysis Self Placement Test
- 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 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++

*Liberal Studies (6)*

**Third Year**

*Major Field Courses (4)*

- 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

(1) 300-level TDC elective chosen in consultation with student's advisor.

*Liberal Studies (4)*

*Open Electives (3)*

**Fourth Year**

*Major Field Courses (1)*

- TDC 376 Network Project

(2) 300-level TDC electives chosen in consultation with student's advisor.

*Liberal Studies (3)*

*Open Electives (6)*
Network Security 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 (Network Security Concentration)

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Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

Four-year schedule of courses for the **Network Security Concentration**.

This concentration is designed to provide focused coursework in network security.
This concentration is designed to provide focused coursework in network security technologies, including detailed instruction in security infrastructure design, deployment, configuration and support.

While this concentration is designed for students that are planning to start their career as network security engineers, security administrators, security auditors and security infrastructure designers, it is also appropriate for any student that wants to integrate security practice within their career.

**First Year**

*Major Field Courses (6)*

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

*Liberal Studies (6)*

**Second Year**

*Major Field Courses (6)*

- CSC 261 Programming Languages I: C/C++
- CSC 262 Programming Languages II: C/C++
- TDC 311 Computers in Telecommunications Systems
- TDC 362 Principles of Data Communications
- CNS 340 Fundamentals of Information Assurance
- WRD 204 Technical Writing
  or WRD 301 Writing in Workplace Contexts

*Liberal Studies (6)*

**Third Year**

*Major Field Courses (4)*

- TDC 363 Introduction to Local Area Networks
- TDC 365 Network Interconnection Technologies
- TDC 377 Fundamentals of Network Security
- CMNS 212 Small Group Communication
  or CMNS 220 Public Speaking

(1) 300-level TDC elective chosen in consultation with student's advisor.

*Liberal Studies (7)*

**Fourth Year**

*Major Field Courses (5)*

- CNS 378 Host and Information Security
- TDC 379 Telecommunication and Network Security Practicum
- TDC 375 Network Protocols
- TDC 368 Network Programming
(1) 300-level TDC elective chosen in consultation with student's advisor.
Open Electives (6)

**Application Development**

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 (Application Development Concentration)

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**Sophomore Year**

| Multiculturalism in the US | LSP 200 |

**Junior Year**

| Experiential Learning      | Required |

**Senior Year**

| Capstone                   | Required |

**Learning Domains**

| Arts and Literature (AL)   | 3 courses required |
| (not more than 2 courses from the same department/ program) | |
| Philosophical Inquiry (PI) | 2 courses required |
| Religious Dimensions (RD)  | 1 Religious and Ethical Questions  
|                           | 1 Religious Traditions |
| Scientific Inquiry (SI)    | 1 SI Lab or SI Quantitative-Lab required |
| Self, Society and the Modern World (SSMW) | 3 courses required |
| (not more than 2 courses from the same department/ program) | |
| Understanding the Past (UP)| 2 courses required (each from a different category) |
| Other                      | 1 of the PI or RD courses must be an ethics course  
|                           | CSC 208 strongly recommended, PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD) recommended |

**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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot
Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

Four-year schedule of courses for the Application Development Concentration:

**First Year**

**Major Field Courses (6)**

- IT 130  The Internet and the Web  Self Placement Test
- IT 201  Introduction to Information Systems
- IT 240  Introduction to Desktop Databases  Self Placement Test
- IT 263  Applied Networks and Security
- IT 231  Web Development I
- MAT140  Discrete Mathematics I

**Liberal Studies (6)**

**Second Year**

**Major Field Courses (6)**

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

**Liberal Studies (6)**

**Third Year**

**Major Field Courses (6)**

- 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  Self Placement Test
- 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

(1) 300-level TDC elective chosen in consultation with student's advisor.

**Liberal Studies (4)**

**Open Electives (1)**

**Fourth Year**

**Major Field Courses (2)**

- TDC 375  Network Protocols
- TDC 376  Network Project
(1) 300-level TDC elective chosen in consultation with student's advisor.

*Liberal Studies (3)*

*Open Electives (6)*

**Open Electives**
Open Electives may be taken from any department or program. These are the only courses that may be taken under the pass/fail option (see the undergraduate Bulletin for details). If you wish to pursue a minor, most minor field courses will be credited as open electives.

**Note:** Grades for all courses in the students major (i.e. non-Liberal Studies and non-Open Elective) must be 'C' or better. Grades of 'C-' may be accepted provided the overall grade point average in the major is 2.0 or better.
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

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

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

DANA HODGDON, M.A.
Visiting Professor
Northwestern University

MATT IRVINE, M.F.A.
Assistant 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

DANIEL KLEIN, B.F.A.
Instructor
New York University
MIKAEL KREUZRIEGLER, M.F.A.
Visiting Assistant Professor
University of Southern California

JOSEPH LINHOFF, J.D.
Assistant Professor
University of Colorado at Boulder School of Law

WILLIAM MUEHL, B.A.
Instructor
University of Wisconsin

THOMAS MUSCARELLO, Ph.D.
Associate Professor
University of Illinois at Chicago

GARY NOVAK, M.F.A.
Assistant Professor
American Film Institute

SCOTT ROBERTS, M.F.A., M.A.
Associate Professor
University of Wisconsin - Madison

ERIC SEDGWICK, Ph.D.
Associate Professor
University of Texas

ROBERT STEEL, M.A.
Instructor
Northwestern University

ALEXANDER STEWART, M.F.A.
Instructor
School of the Art Institute of Chicago

JOSE ZAGAL, Ph.D.
Assistant Professor
Georgia Institute of Technology

JONAH ZEIGER, M.F.A.
Assistant Professor
New York University

JOANNE ZIELINSKI, M.F.A.
Associate Professor
Rutgers University

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.

CDM Liberal Studies Courses

Have you ever been interested in learning how to create interactive web environments, put together computer animation, or do you want to know more about codes and ciphers as featured in the movies Enigma or Windtalkers? Then CDM has some great courses for you! CDM offers dozens of courses in many domains of the Liberal Studies Program. You can experiment with computer graphics, programming and e-commerce technology and fulfill a requirement at the same time. Many of these courses also serve as gateway courses into more advanced CDM courses. Who knows, you might just like it and want to come back for more!

If you have a specific interest, in something like how the Internet functions, you can click here for a list of courses by topic.

CDM Liberal Studies Courses for CDM students

-Rule 1-
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:

1. The course is NOT required as part of the students major
   EXAMPLES:
   • a Computer Graphics and Motion Technology (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 E-Commerce Technology (ECT) major CAN take GPH 211 to satisfy the arts and literature requirement of the LSP

2. The course qualifies for a liberal studies program domain that IS required by the students major
   EXAMPLES:
   • a Computer Science (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.
   • any CDM 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 CTI students

-Rule 2-
No double counting allowed for CDM classes by CDM students.
EXAMPLES:

• 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

CDM Liberal Studies Courses by Liberal Studies Area

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 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: Elective**

**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 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

**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/Quantitative

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.

Scientific Inquiry: Quantitative

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 250 Computers and Human Intelligence
Study how computers are designed to think like people.

HCI 201 Multimedia and the World Wide Web
Overview of the Web, its origins and capabilities. Create your own sample web page.

IT 223 Data Analysis

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
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 discussed.

**CDM Liberal Studies Courses by Course 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 Social Responsibility

**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 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.

**Design your own Web Site**

**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 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 class 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.

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**Combined Bachelor/Master Degrees**

The Combined Degree Programs at CDM are designed to allow academically gifted students to complete both a bachelor and master's degree in a shorter amount of time than by taking each degree separately.

Please note: This version of the degree replaces all previous combinations and current students will be migrated to this plan.

**Combined Degree Program Structure**

The shortened structure of combined degree programs is accomplished by students taking three Masters level courses in their junior and senior year that count toward both their bachelor and masters degree requirements at the same time. Students in this program will receive both a bachelor degree, after 192 undergraduate credit hours, and a masters degree after 10 more graduate courses (40 hours), instead of the standard 13 (52 hours).

**How to apply:**

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

Admission criteria are as follows:

- Minimum of 6 course/24 credit hours completed
- GPA of 3.3 or higher
- Endorsement of faculty advisor, this should be sent via e-mail to bkrochmal@cdm.depaul.edu

**Maintaining Good Standing**

- Student GPAs and grades will be reviewed after Autumn, Winter, and Spring Quarter
- 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)

**Dismissal Policy**

If a student's cumulative GPA falls below 3.3, the student must attain 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.

It is important to note:

**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 admissions procedures, but will still be required to take 13 graduate courses for a MS degree.**

**BA/BS-MA/MS Transition**

If, upon completion of the BA/BS Degree, the student did not meet all prerequisites for the MA/MS Degree, then the student will need to complete (course, test, or waiver) the missing prerequisites for the chosen MA/MS 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 MA/MS 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.
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 Systems
- Information Technology
- Network Technologies
- Security
- Software Engineering
- Visual Computing

CDM Minor Requirements

Animation Minor

ANI 101 Animation for Non-Majors
or ANI 201 (not both) Animation I
ANI 230 3D 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
### 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 220**  
  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 220**  
  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
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
- ANI 201 Animation I
- ANI 230 3D Modeling
- GAM 224 Introduction to Game Design
- GAM 244 Game Development I
- GAM 245 Game Development II

Game Programming Minor

- GAM 224 Introduction to Game Design
- GAM 244 Game Development I
- GAM 245 Game Development II
- GAM 374 Action Games Programming

2 courses from the following list:
- ANI 230 3D Modeling
Interactive Media Minor

Required Courses
- IM 210 Introduction to Human-Computer Interaction
- IM 220 Interactive Media I
- IM 230 Scripting for Interactive Media
- IM 270 User-centered Web Design
- 3 courses from the following list:
  - IM 320 Interactive Media II
  - IM 330 Advanced Scripting for Interactive Media
  - IM 360 User-Centered Evaluation
  - ANI 101 Animation for Non-Majors
  - ANI 105 Intro to Visual Design
  - ART 260 Art and Design I: History,Concept,Structure
  - ART 264 Typography I
  - DC 205 Foundations of Cinema
  - GAM 244 Game Development I
  - IT 130 The Internet and the Web
  - IT 230 Building Internet Applications

Information Systems Minor

- CSC 211 Programming in Java I
- IT 230 Building Internet Applications
- IT 240 Introduction to Desktop Databases
- IT 130 The Internet and the Web
- IT 201 Introduction to Information Systems
- IT 215 Analysis and Design Techniques
- IM 210 Introduction to Human-Computer Interaction
- 1 course from the following list:
  - IS 371 Introduction to L.T. System Management
  - IS 372 Fundamentals of Software Project Management
  - IS 373 Introduction to Large Systems Implementation
  - IS 374 Management Support Systems

Information Technology Minor

- IT 130 The Internet and the Web
- IT 230 Building Internet Applications
- IT 240 Introduction to Desktop Databases
- TDC 361 Basic Communication Systems
  - or IT 263 Applied Networks and Security
- IT 215 Analysis and Design Techniques
- 1 CDM Elective

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

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<th>Course Code</th>
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<tr>
<td>DC 201</td>
<td>Introduction to Screenwriting</td>
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<td>DC 205</td>
<td>Foundations of Cinema</td>
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<td>DC 301</td>
<td>Advanced Screenwriting I</td>
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<td>DC 302</td>
<td>Advanced Screenwriting II</td>
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<td>DC 303</td>
<td>Advanced Screenwriting III</td>
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<td>DC 304</td>
<td>Topics in Screenwriting</td>
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**Security Minor**

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

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

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<th>Course Code</th>
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<tr>
<td>MAT 140</td>
<td>Discrete Mathematics I</td>
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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 and prepare for the future under the guidance of faculty with professional experience in television, film, art and interactive media.

What students get from this program:

- A faculty body of experienced animators and working professionals.
- Education in the foundations of cinema, as well as in the important skills of drawing and design.
- Access to the latest in animation technology, computing systems, and software.
- Valuable production experience both in class and through internships.
- The benefit of industry connections through CIMs relationship with Chicagos many animation and production studios.

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.

**BA in Animation**

<table>
<thead>
<tr>
<th>First Year Program</th>
<th>LSP 110 or LSP 111</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><strong>Note</strong>: This proficiency can be met through exams at QRC. Please see below for more information.</td>
<td></td>
</tr>
</tbody>
</table>
### Sophomore Year

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

### Junior Year

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

### Senior Year

<table>
<thead>
<tr>
<th>Subject</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capstone</td>
<td>Required</td>
</tr>
</tbody>
</table>

### Learning Domains

<table>
<thead>
<tr>
<th>Domain</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Literature (AL) (not more than 2 courses from the same department/program)</td>
<td>3 courses required. Two of the courses must be ART 106 and either DC 233 or ART 200</td>
</tr>
<tr>
<td>Philosophical Inquiry (PI)</td>
<td>2 courses required</td>
</tr>
<tr>
<td>Religious Dimensions (RD)</td>
<td>1 Religious and Ethical Questions, 1 Religious Traditions</td>
</tr>
<tr>
<td>Scientific Inquiry (SI)</td>
<td>1 SI Lab or SI Quantitative-Lab required</td>
</tr>
<tr>
<td>Self, Society and the Modern World (SSMW) (not more than 2 courses from the same department/program)</td>
<td>3 courses required</td>
</tr>
<tr>
<td>Understanding the Past (UP)</td>
<td>2 courses required (each from a different category)</td>
</tr>
<tr>
<td>Other</td>
<td>1 of the PI or RD courses must be an ethics course. DC/GAM/IT 228 (PI) strongly recommended. PHL/MGT 248 (PI) or REL/MGT 228 (RD) recommended</td>
</tr>
</tbody>
</table>

**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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

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

**Major Field Courses (6)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course 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>

**Liberal Studies Courses (6) (Required: ART 106 Beginning Drawing and either DC 233 Cinema)**
and Art or ART 200 Art and Artists in Contemporary Culture)

*ANI 101 Animation for Non-Majors allowed for students transferring into the major.

**Second Year**

**Major Field Courses (6)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANI 220</td>
<td>Pre-Production Art</td>
</tr>
<tr>
<td>ANI 230</td>
<td>3D 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>ART 218</td>
<td>Advanced Figure Drawing</td>
</tr>
</tbody>
</table>

**Liberal Studies Courses (6)**

**Third Year**

**Major Field Courses (5)**

<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</td>
</tr>
<tr>
<td>or MCS 209</td>
<td>History of Cinema III, 1975-Present</td>
</tr>
</tbody>
</table>

*Animation Electives (2) Any ANI, ART, DC, GAM, GPH or IM course EXCEPT: ART 102, ART 104, ART 105, DC 120 or GPH 211

**Liberal Studies Courses (3)**

**Open Electives (2)**

**Fourth Year**

**Major Field Courses (3)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANI 260</td>
<td>Motion Graphics</td>
</tr>
<tr>
<td>ANI 394</td>
<td>Animation Project I</td>
</tr>
<tr>
<td>ANI 395</td>
<td>Animation Project II</td>
</tr>
</tbody>
</table>

*Animation Electives (2) Any ANI, ART, DC, GAM, GPH or IM course EXCEPT: ART 102, ART 104, ART 105, DC 120 or GPH 211

**Liberal Studies Courses (5)**

**Open Electives (2)**

---

**Open Electives:**
Open Electives may be taken from any department or program. These are the only courses that may be taken under the pass/fail option (see the undergraduate Bulletin for details). If you wish to pursue a minor, most minor field courses will be credited as open electives.

**Note:** Grades for all courses in the students major (i.e. non-Liberal Studies and non-Open Elective) must be 'C' or better. Grades of 'C-' may be accepted provided the overall grade point average in the major is 2.0 or better.
Digital Cinema

The Bachelor of Arts program in Digital Cinema teaches the fundamentals of motion picture theory and history along with technical production skills, using state-of-the-art digital technology.

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 insiders view of the industry from experienced faculty.

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

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

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 BA degree in Digital Cinema (Standard concentration):

<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>
<tr>
<td>Note: This proficiency can be met through exams at QRC. Please see below for more information.</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>
<tr>
<td>Learning Domains</td>
</tr>
<tr>
<td>--------------------------</td>
</tr>
<tr>
<td><strong>Arts and Literature (AL)</strong></td>
</tr>
<tr>
<td><strong>Philosophical Inquiry (PI)</strong></td>
</tr>
</tbody>
</table>
| **Religious Dimensions (RD)** | 1 Religious and Ethical Questions  
  | 1 Religious Traditions |
| **Scientific Inquiry (SI)** | 1 SI Lab or SI Quantitative-Lab required |
| **Self, Society and the Modern World (SSMW)** | (not more than 2 courses from the same department/program) | 3 courses required |
| **Understanding the Past (UP)** | 2 courses required (each from a different category) |
| **Other** | 1 of the PI or RD courses must be an ethics course  
  | DC/GAM/IT 228 strongly recommended, PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD) recommended |

**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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

---

**Four-year schedule of courses for the Standard Concentration:**

**First Year**

**Major Field Courses (6)**

<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>DC 110</td>
<td>Foundations of Cinema for Majors</td>
</tr>
<tr>
<td>DC 220</td>
<td>Editing I</td>
</tr>
<tr>
<td>MCS 207</td>
<td>History of Cinema I, 1890-1945</td>
</tr>
<tr>
<td>MCS 208</td>
<td>History of Cinema II</td>
</tr>
<tr>
<td>MCS 209</td>
<td>History of Cinema III, 1975-Present</td>
</tr>
</tbody>
</table>

**Liberal Studies (5)**

**Open Electives (1)**

**Second Year**

**Major Field Courses (6)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<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>
DC 210  Digital Cinema Production I
DC 211  Pre-Production for Cinema
DC 215  Digital Sound Design
DC 225  Digital Still Photography
DC 275  Cinematography

Liberal Studies (6)

Third Year

Major Field Courses (5)

DC 270  Topics in Digital Cinema
VFX 278  Digital Compositing I
DC 310  Digital Cinema Production II
DC 315  Advanced Digital Sound Design
DC 320  Editing II

CIM Electives (1) Any 200-level or above ANI, GPH, DC, GAM or IM course
Liberal Studies (5)
Open Electives (1)

Fourth Year

Major Field Courses (4)

DC 371  Documentary Production
DC 376  Visual Design
DC 389  The Big Picture: The Entertainment Industry
DC 398  Digital Cinema Capstone

CIM Electives (1) Any 200-level or above ANI, GPH, DC, GAM or IM course
Liberal Studies (4)
Open Electives (3)

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):

BA 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; 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 below for more information.</td>
<td></td>
</tr>
</tbody>
</table>

| Sophomore Year |
|----------------|------------------|


Multiculturalism in the US  
LSP 200

Junior Year

Experiential Learning  
Required

Senior Year

Capstone  
DC 398

Learning Domains

| Arts and Literature (AL)  
(not more than 2 courses from the same department/program) | 3 courses required |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophical Inquiry (PI)</td>
<td>2 courses required</td>
</tr>
</tbody>
</table>
| Religious Dimensions (RD) | 1 Religious and Ethical Questions  
1 Religious Traditions |
| Scientific Inquiry (SI) | 1 SI Lab or SI Quantitative-Lab required |
| Self, Society and the Modern World (SSMW)  
(not more than 2 courses from the same department/program) | 3 courses required |
| Understanding the Past (UP) | 2 courses required (each from a different category) |
| Other | 1 of the PI or RD courses must be an ethics course  
DC/GAM/IT 228 strongly recommended, PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD) recommended |

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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

Four-year schedule of courses for the Screenwriting Concentration:

**First Year**

**Major Field Courses (6)**

- DC 201  
  Introduction to Screenwriting
- DC 110  
  Foundations of Cinema for Majors
- DC 211  
  Pre-Production for Cinema
- MCS 207  
  History of Cinema I, 1890-1945
- MCS 208  
  History of Cinema II
- MCS 209  
  History of Cinema III, 1975-Present

Liberal Studies (5)

Open Electives (1)
Second Year

**Major Field Courses (5)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC 210</td>
<td>Digital Cinema Production I</td>
</tr>
<tr>
<td>DC 220</td>
<td>Editing I</td>
</tr>
<tr>
<td>DC 250</td>
<td>Working with Actors I</td>
</tr>
<tr>
<td>DC 270</td>
<td>Topics in Digital Cinema</td>
</tr>
<tr>
<td>THE 244</td>
<td>Dramatic Writing for Non-Majors</td>
</tr>
</tbody>
</table>

CIM Elective (1) Any 200-level or above ANI, GPH, DC, GAM or IM course

Liberal Studies(6)

Third Year

**Major Field Courses (4)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<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>
</tr>
</tbody>
</table>

CIM Elective (1) Any 200-level or above ANI, GPH, DC, GAM or IM course

English Course (1) - A 200-level or above English Literature Class

Liberal Studies(5)

Open Electives (1)

Fourth Year

**Major Field Courses (3)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC 235</td>
<td>Adaptation: The Cinematic Recrafting of Meaning</td>
</tr>
<tr>
<td>DC 389</td>
<td>The Big Picture: The Entertainment Industry</td>
</tr>
<tr>
<td>DC 398</td>
<td>Digital Cinema Capstone</td>
</tr>
</tbody>
</table>

CIM Elective (1) Any 200-level or above ANI, GPH, DC, GAM or IM course

English Course (1) - A 200-level or above English Literature Class

Liberal Studies(4)

Open Electives (3)

---

**Open Electives**

Open Electives may be taken from any department or program. These are the only courses that may be taken under the pass/fail option (see the undergraduate Bulletin for details). If you wish to pursue a minor, most minor field courses will be credited as open electives.

**Note:** Grades for all courses in the students major (i.e. non-Liberal Studies and non-Open Elective) must be 'C' or better. Grades of 'C-' may be accepted provided the overall grade point average in the major is 2.0 or better.

---

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.

What students get from this program:

- A faculty body of experienced animators and working professionals.
- Access to the latest in animation software, computing systems, and technology, including motion capture and green screen studios.
- Close cooperation with programming students in the Game Development program.
- Valuable production experience both in class and through internships.
- The benefits of industry connections through CDMs relationship with Chicagos largest game development and animation studios.

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>
<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>LSP 120 &amp; LSP 121</td>
</tr>
</tbody>
</table>

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

<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>

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

<table>
<thead>
<tr>
<th>Learning Domains</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arts and Literature (AL)</strong> (not more than 2 courses from the same department/ program)</td>
<td>3 courses required Two of the courses must be ART 106 and either DC 233 or ART 200 GAM 224 recommended</td>
</tr>
<tr>
<td><strong>Philosophical Inquiry (PI)</strong></td>
<td>2 courses required</td>
</tr>
</tbody>
</table>
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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major’s requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

Four-year schedule of courses:

First Year

Major Field Courses (6)

ANI 105 Intro to Visual Design  
ANI 201 Animation I *  
ANI 206 History of Animation  
ANI 230 3D Modeling  
DC 201 Introduction to Screenwriting  
ART 218 Figure Drawing

Liberal Studies Courses (6) (Required: ART 106 Beginning Drawing) and either DC 233 Cinema and Art or ART 200 Art and Artists in Contemporary Culture). GAM 224 is recommended.

* ANI 101 Animation for Non-Majors allowed for students transferring into the major.

Second Year

Major Field Courses (6)

ANI 220 Pre-Production Art  
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

Liberal Studies Courses (6)

**Third Year**

*Major Field Courses (6)*

- 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

*Animation Electives (2)* - Any ANI, ART, DC, GAM, GPH, or IM course **EXCEPT:** ART 102, ART 104, ART 105, DC 120 or GPH 211

*Liberal Studies Courses (3)*

*Open Electives (1)*

**Fourth Year**

*Major Field Courses (4)*

- MCS 207  History of Cinema I, 1890-1945
- or MCS 208  History of Cinema II
- 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

*Animation Electives (1)* - Any ANI, ART, DC, GAM, GPH, or IM course **EXCEPT:** ART 102, ART 104, ART 105, DC 120 or GPH 211

*Liberal Studies Courses (5)*

*Open Electives (1)*

---

**Open Electives:**

Open Electives may be taken from any department or program. These are the only courses that may be taken under the pass/fail option (see the undergraduate Bulletin for details). If you wish to pursue a minor, most minor field courses will be credited as open electives.

**Note:** Grades for all courses in the students major (i.e. non-Liberal Studies and non-Open Elective) must be 'C' or better. Grades of 'C-' may be accepted provided the overall grade point average in the major is 2.0 or better.
Computer Games Development (Joint with SoC)

The Bachelor of Science in Computer Games Development is ideal for creative-minded and technically adept individuals with a passion for crafting interactive experiences. It offers career opportunities for skilled, creative programmers, designers, and animators.

The BS in Computer Games 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 Games 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.

The BS in Computer Games Development offers a Production & Design concentration and a concentration in Game Programming.

What students will learn from this degree program:

- game programming
- game physics and game engines
- computer graphics and rendering
- 3D modeling and animation
- game design and level design

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 Games Development, Production and Design 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 Game Project Development |

### Learning Domains

| Arts and Literature (AL) (not more than 2 courses from the same department/program) | 3 courses required One of the courses must be DC 201 |
|--------------------------------------------------------------------------------------------|
| Philosophical Inquiry (PI)                                                               | 2 courses required One course must be DC 228/IT 228 |
| Religious Dimensions (RD)                                                                | 1 Religious and Ethical Questions |
Scientific Inquiry (SI) | 1 Religious Traditions
---|---
One SI Lab or SI Quantitative-Lab required

Self, Society and the Modern World (SSMW) (not more than 2 courses from the same department/program) | 3 courses required

Understanding the Past (UP) | 2 courses required (each from a different category)

**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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

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. Courses for the Production & Design Concentration

**First Year**

Major Field Courses (5)

<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>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>

Liberal Studies (7) (DC 201 required as one of the Liberal Studies courses)

**Second Year**

Major Field Courses (6)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</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 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>

Gaming Elective (1)
Liberal Studies (5)

**Third Year**

Major Field Courses (4)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANI 231</td>
<td>3D Animation</td>
</tr>
<tr>
<td>GAM 374</td>
<td>Action Games Programming</td>
</tr>
<tr>
<td>IM 220</td>
<td>Interactive Media I</td>
</tr>
<tr>
<td>WRD 204</td>
<td>Technical Writing</td>
</tr>
</tbody>
</table>

Gaming Electives (4)
Liberal Studies (4) - (DC 228 or IT 228 Required as one of the Liberal Studies courses)
Fourth Year

Major Field Courses (4)

GAM 333       The Business of Games
GAM 392       Game Modification Workshop
GAM 394       Game Development Project I
GAM 395       Game Development Project II

Gaming Electives (1)
Liberal Studies (3)
Open Electives (4)

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 Games Development, Game Programming Concentration.

<table>
<thead>
<tr>
<th>Learning Domains</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arts and Literature (AL)</strong></td>
<td>3 courses required&lt;br&gt;Two of the courses must be&lt;br&gt;<strong>DC 201</strong> and <strong>ANI 101</strong></td>
</tr>
<tr>
<td><strong>Philosophical Inquiry (PI)</strong></td>
<td>2 courses required&lt;br&gt;One of the courses must be&lt;br&gt;<strong>DC 228</strong> or <strong>IT 228</strong></td>
</tr>
<tr>
<td><strong>Religious Dimensions (RD)</strong></td>
<td>1 Religious and Ethical Questions&lt;br&gt;1 Religious Traditions</td>
</tr>
<tr>
<td><strong>Scientific Inquiry (SI)</strong></td>
<td>1 SI Lab or SI Quantitative-Lab 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 (each from a different category)</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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

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. Courses for the Game Programming Concentration

First Year

Major Field Courses (5)

- ANI 105 Intro to Visual Design
- GAM 224 Introduction to Game Design
- GAM 244 Game Development I
- MAT 150 Calculus I
- MAT 151 Calculus II

Liberal Studies (7) - (DC 201 and ANI 101 Required as two of the Liberal Studies courses)

Second Year

Major Field Courses (5)

- 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 Modeling

Gaming Electives (2)
Liberal Studies (5)

Third Year

Major Field Courses (6)

- 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

Gaming Electives (2)
Liberal Studies (4) - (DC 228 or IT 228 required as one of the Liberal Studies courses)

Fourth Year

Major Field Courses (5)

- 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

Gaming Electives (1)
Liberal Studies (3)
Open Electives (3)

Gaming Electives
Any 200-level ANI, DC, GAM, GPH or IM Course
Any 300-level CDM Course

Open Electives
Open Electives may be taken from any department or program. These are the only courses that may be taken under the pass/fail option (see the undergraduate Bulletin for details). If you wish to pursue a minor, most minor field courses will be credited as open electives.

Note: Grades for all courses in the students major (i.e. non-Liberal Studies and non-Open Elective) must be ‘C’ or better. Grades of ‘C-’ may be accepted provided the overall grade point average in the major is 2.0 or better.

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

Computer Graphics and Motion Technology (Joint with SoC)

The Bachelor of Science in Computer Graphics and Motion Technology unites the technical and aesthetic principals of digitally created motion graphics and animation. Graduates of the program may find opportunities in diverse fields, from motion pictures or architecture to computer gaming or medicine.

The BS in Computer Graphics and Motion Technology provides DePaul students with an interest in mathematics/computer science as well as visual design, an academic foundation in both the technical and aesthetic elements of computer graphics.

The Bachelor of Science degree program offers two options of study:

- The Developer concentration is geared toward students who are considering careers in graphic software development, with course work focused in programming languages (C/C++) and mathematics (calculus and algebra), in addition to animation and computer graphics.
- The Technical Designer concentration is geared toward students interested in the visual aspects, including lighting setup, shader development and character rigging.

What students learn is this degree program:

- Design and analysis of mathematics/computer science principals for computer graphic design.
- Beginning and advance digital photography.
- History and theory of graphic design (color theory, perception).
- Usability and human-computer interaction.

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).

BS in Computer Graphics and Motion Technology
Developer Concentration

<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>

Learning Domains

<table>
<thead>
<tr>
<th>Arts and Literature (AL) (not more than 2 courses from the same department/program)</th>
<th>3 Courses Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophical Inquiry (PI)</td>
<td>2 Courses Required</td>
</tr>
<tr>
<td>Religious Dimensions (RD)</td>
<td>1 Religious and Ethical Questions 1 Religious Traditions</td>
</tr>
<tr>
<td>Scientific Inquiry (SI)</td>
<td>One SI Lab or SI Quantitative-Lab required</td>
</tr>
<tr>
<td>Self, Society and the Modern World (SSMW) (not more than 2 courses from the same department/program)</td>
<td>3 courses required</td>
</tr>
<tr>
<td>Understanding the Past (UP)</td>
<td>2 Courses Required (each from a different category)</td>
</tr>
</tbody>
</table>
| Other | 1 of the PI or RD courses must be an ethics course  
CSC 208 strongly recommended, PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD) recommended |

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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

Four-year schedule of courses for the Developer Concentration:

First Year

Major Field Courses (9)

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
MAT 150 Calculus I
or MAT 160 Calculus for Mathematics and Science Majors I
or MAT 170 Calculus I with Scientific Applications (Recommended)
MAT 151 Calculus II

Liberal Studies (3)

Second Year

Major Field Courses (5)

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

Liberal Studies (7)

Third Year

Major Field Courses (4)

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

Graphics Electives (3) - from the list at the bottom of the page.

Liberal Studies (5)

Fourth Year

Major Field Courses (4)

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

Graphics Electives (1) - from the list at the bottom of the page.
Liberal Studies (4)
Open Electives (3)

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).
## BS in Computer Graphics and Motion Technology
### Technical Designer Concentration

### First Year Program

<table>
<thead>
<tr>
<th>Program</th>
<th>Courses</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>

### Sophomore Year

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

### Senior Year

<table>
<thead>
<tr>
<th>Program</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capstone</td>
<td>Required</td>
</tr>
</tbody>
</table>

### Learning Domains

<table>
<thead>
<tr>
<th>Domain</th>
<th>Courses/Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arts and Literature (AL)</strong></td>
<td>(not more than 2 courses from the same department/program) 3 courses required&lt;br&gt;Two of the courses must be ART 102 and ART 106</td>
</tr>
<tr>
<td><strong>Philosophical Inquiry (PI)</strong></td>
<td>2 courses required</td>
</tr>
<tr>
<td><strong>Religious Dimensions (RD)</strong></td>
<td>1 Religious and Ethical Questions&lt;br&gt;1 Religious Traditions</td>
</tr>
<tr>
<td><strong>Scientific Inquiry (SI)</strong></td>
<td>1 SI Lab or SI Quantitative-Lab required</td>
</tr>
<tr>
<td><strong>Self, Society and the Modern World (SSMW)</strong></td>
<td>(not more than 2 courses from the same department/program) 3 courses required</td>
</tr>
<tr>
<td><strong>Understanding the Past (UP)</strong></td>
<td>2 courses required (each from a different category)</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>1 of the PI or RD courses must be an ethics course&lt;br&gt;CSC 208 strongly recommended, PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD) recommended</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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

---

### Four-year schedule of courses for the Technical Designer Concentration:

#### First Year

**Major Field Courses (6)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM 230</td>
<td>Scripting for Interactive Media</td>
</tr>
<tr>
<td>and IM 330</td>
<td>Advanced Scripting for Interactive Media</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>GPH 211</td>
<td>Perceptual Principles for Digital Environments I</td>
</tr>
</tbody>
</table>
GPH 212    Perceptual Principles for Digital Environments II  
ANI 201    Animation I  
MAT 140    Discrete Mathematics I  

Liberal Studies (4) - ART 102 and ART 106 are required.  

Second Year  

Major Field Courses (7)  
GPH 250    Digital Modeling I  
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  

Liberal Studies (5)  

Third Year  

Major Field Courses (5)  
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  

Graphics Electives (1) - from the list at the bottom of the page.  
Liberal Studies (6)  

Fourth Year  

Major Field Courses (2)  
GPH 395    Computer Graphics Senior Project  
GPH 388    Production Pipeline Techniques  

Graphics Electives (4) - from the list at the button of the page.  
Liberal Studies (4)  
Open Electives (4)  

Graphics Electives List  
Students may take any of the following courses as long as they were not previously used to satisfy the computer graphics and animation core:  

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 250  Digital Modeling I
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 department or program. These are the only courses that may be taken under the pass/fail option (see the undergraduate Bulletin for details). If you wish to pursue a minor, most minor field courses will be credited as open electives.

Note: Grades for all courses in the students major (i.e. non-Liberal Studies and non-Open Elective) must be ‘C’ or better. Grades of ‘C-’ may be accepted provided the overall grade point average in the major is 2.0 or better.
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.

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

### BS in Digital Cinema

<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 below for more information.</td>
<td></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>DC 398</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning Domains</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Literature (AL) (not more than 2 courses from the same department/program)</td>
<td>3 courses required</td>
</tr>
<tr>
<td>At least two of the following courses must be taken: MCS 207, MCS 208, MCS 209, ANI 206</td>
<td></td>
</tr>
<tr>
<td>Philosophical Inquiry (PI)</td>
<td>2 courses required</td>
</tr>
<tr>
<td>Religious Dimensions (RD)</td>
<td>1 Religious and Ethical Questions</td>
</tr>
<tr>
<td>1 Religious Traditions</td>
<td></td>
</tr>
<tr>
<td>Scientific Inquiry (SI)</td>
<td>1 SI Lab or SI Quantitative-Lab required</td>
</tr>
<tr>
<td>Self, Society and the Modern World (SSMW) (not more than 2 courses from the same department/program)</td>
<td>3 courses required</td>
</tr>
<tr>
<td>Understanding the Past (UP)</td>
<td>2 courses required (each from a different category)</td>
</tr>
<tr>
<td>Other</td>
<td>1 of the PI or RD courses must be an ethics course</td>
</tr>
<tr>
<td>DC/GAM/IT 228 strongly recommended, PHL 248/MGT 248 (PI) or REL228/MGT 228 (RD) recommended</td>
<td></td>
</tr>
</tbody>
</table>

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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

Four-year schedule of courses:

**First Year**  Major Field Courses (5)

- ANI 105  Intro to Visual Design
- DC 201  Introduction to Screenwriting
- DC 110  Foundation of Cinema for Majors
- DC 225  Digital Still Photography
- DC 220  Editing I

*Liberal Studies (6 *)
*Open Electives (1)

**Second Year**

*Major Field Courses (7)*

- ANI 201  Animation I
- VFX 200  Introduction to Visual Effects
- DC 215  Digital Sound Design
- ANI 230  3D Modeling
- DC 275  Cinematography
- DC 210  Digital Cinema Production I
- DC 211  Pre-Production for Cinema

*Liberal Studies (5 *)

**Third Year**

*Major Field Courses (6)*

- VFX 278  Digital Compositing I
- ANI 220  Pre-Production Art
- ANI 260  Motion Graphics
- ANI 231  3D Animation
- DC 375  Advanced Cinematography
- DC 310  Digital Cinema Production II

*Liberal Studies (5 *)
*Open Electives (1)

**Fourth Year**

*Major Field Courses (5)*

- VFX 378  Digital Compositing II
- ANI 310  Motion Capture Workshop
- ANI 379  Advanced 3D Compositing
VFX 391  Virtual Cinema
DC 398  Digital Cinema Capstone

Liberal Studies (4 *)
Open Electives (3)

* Liberal Studies Arts & Literature Requirement must include at least TWO of the following:

MCS 207  History of Cinema I, 1890-1945
MCS 208  History of Cinema II
MCS 209  History of Cinema III, 1975-Present
ANI 206  History of Animation

Open Electives
Open Electives may be taken from any department or program. These are the only courses that may be taken under the pass/fail option (see the undergraduate Bulletin for details). If you wish to pursue a minor, most minor field courses will be credited as open electives.

Note: Grades for all courses in the students major (i.e. non-Liberal Studies and non-Open Elective) must be 'C' or better. Grades of 'C-' may be accepted provided the overall grade point average in the major is 2.0 or better.

Interactive Media (Joint with SoC)

A major in Interactive Media provides students with skills and expertise for designing and producing web applications, interactive presentations and user interfaces for computer applications and a variety of consumer devices.

The Bachelor of Science 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.

What students learn from this program:

- 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

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:
### 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 | Required |

### Learning Domains

<table>
<thead>
<tr>
<th>Arts and Literature (AL) (not more than 2 courses from the same department/ program)</th>
<th>3 courses required One of the courses must be DC 205</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophical Inquiry (PI)</td>
<td>2 courses required One of the courses must be CSC 208 or IT 228</td>
</tr>
</tbody>
</table>
| Religious Dimensions (RD)                                                       | 1 Religious and Ethical Questions  
|                                                                                | 1 Religious Traditions |
| Scientific Inquiry (SI)                                                         | 1 SI Lab or SI Quantitative-Lab required |
| Self, Society and the Modern World (SSMW) (not more than 2 courses from the same department/ program) | 3 courses required One of the courses must be PSY 105 |
| Understanding the Past (UP)                                                     | 2 courses required (each from a different category) |

**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.

Students may choose to take CDM courses that carry Liberal Studies credit but they cannot double count them if they are part of the primary major's requirements. Click here to view the CDM courses that qualify for Liberal Studies credit.

### Four-year schedule of courses:

#### First Year

**Major Field Courses (6)**

<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>
</tbody>
</table>
ANI 101  Animation for Non-Majors
or ANI 201  Animation I

*Liberal Studies* (6) - Required: PSY 105 Introductory Psychology I and DC 205 Foundations of Cinema

**Second Year**

*Major Field Courses* (7)

- 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 Modeling

*Liberal Studies* (5) - Required: CSC 208 Computers and Social Responsibility or IT 228 Ethics in Computer Games and Cinema

**Third Year**

*Major Field Courses* (5)

- 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

*IM Electives* (3)

*Liberal Studies* (4)

**Fourth Year**

*Major Field Courses* (1)

- IM 394  Human-Computer Interaction Capstone Course
  or CSC 394  Software Projects

*IM Electives* (2) - chosen in consultation with student's advisor

*Liberal Studies* (4)

*Open Electives* (5)

**IM Electives**

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
Open Electives
Open Electives may be taken from any department or program. These are the only courses that may be taken under the pass/fail option (see the undergraduate Bulletin for details). If you wish to pursue a minor, most minor field courses will be credited as open electives.

Note: Grades for all courses in the students major (i.e. non-Liberal Studies and non-Open Elective) must be ‘C’ or better. Grades of ‘C-’ may be accepted provided the overall grade point average in the major is 2.0 or better.
Special Programs

College of Computing and Digital Media - Undergraduate Studies | Special Programs

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 or 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 Systems
- Information Technology
- Network Technologies
- Security
- Software Engineering
- Visual Computing

---

**CDM Minor Requirements**

**Animation Minor**

<table>
<thead>
<tr>
<th>ANI 101</th>
<th>Animation for Non-Majors</th>
</tr>
</thead>
<tbody>
<tr>
<td>or ANI 201 (not both)</td>
<td>Animation I</td>
</tr>
<tr>
<td>ANI 230</td>
<td>3D Modeling</td>
</tr>
<tr>
<td>ANI 231</td>
<td>3D Animation</td>
</tr>
<tr>
<td>ANI 206</td>
<td>History of Animation</td>
</tr>
</tbody>
</table>

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 |
### Course Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<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>CSC 393</td>
<td>Data Structures in C++</td>
</tr>
<tr>
<td>GPH 329</td>
<td>Computer Graphics Development II</td>
</tr>
<tr>
<td>GPH 339</td>
<td>Advanced Rendering Techniques</td>
</tr>
<tr>
<td>GPH 372</td>
<td>Principles of Computer Animation</td>
</tr>
</tbody>
</table>

### Computer Science Minor

**Required Courses**

- **CSC 241**: Introduction to Computer Science I  
- **CSC 242**: Introduction to Computer Science II  
- **CSC 224**: Java for Programmers

**Alternatively**

- **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**

- **MAT 140**: Discrete Mathematics I

**Guided Electives**

- **CSC 373**: Computer Systems I  
- **CSC 374**: Computer Systems II

### Data Analysis and Data Mining Minor

**Required Courses**

- **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

**Guided Electives**

- **2 CDM Electives**

### Database Minor

**Required Courses**

- **CSC 211**: Programming in Java I  
- **CSC 212**: Programming in Java II  
- **IT 223**: Data Analysis  
- **IT 240**: Introduction to Desktop Databases

**Guided Electives**

- **CSC 352**: Database Programming  
- **CSC 367**: Introduction to Data Mining

**Guided Electives**

- **1 CDM Elective**

### Data Visualization Development Minor

**Guided Electives**

- **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 Modeling
GAM 224 Introduction to Game Design
GAM 244 Game Development I
GAM 245 Game Development II
**Game Programming Minor**

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

2 courses from the following list:  
**ANI 230**  3D 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

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**Interactive Media Minor**

**Required Courses**

**IM 210**  Introduction to Human-Computer Interaction  
**IM 220**  Interactive Media I  
**IM 230**  Scripting for Interactive Media  
**IM 270**  User-centered Web Design  

3 courses from the following list:  
**IM 320**  Interactive Media II  
**IM 330**  Advanced Scripting for Interactive Media  
**IM 360**  User-Centered Evaluation  
**ANI 101**  Animation for Non-Majors  
**ANI 105**  Intro to Visual Design  
**ART 260**  Art and Design I: History, Concept, Structure  
**ART 264**  Typography I  
**DC 205**  Foundations of Cinema  
**GAM 244**  Game Development I  
**IT 130**  The Internet and the Web  
**IT 230**  Building Internet Applications

---

**Information Systems Minor**

**CSC 211**  Programming in Java I  
**IT 230**  Building Internet Applications  
**IT 240**  Introduction to Desktop Databases  
**IT 130**  The Internet and the Web  
**IT 201**  Introduction to Information Systems  
**IT 215**  Analysis and Design Techniques  
**IM 210**  Introduction to Human-Computer Interaction  

1 course from the following list:  
**IS 371**  Introduction to L.T. System Management  
**IS 372**  Fundamentals of Software Project Management  
**IS 373**  Introduction to Large Systems Implementation  
**IS 374**  Management Support Systems

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**Information Technology Minor**

**IT 130**  The Internet and the Web  
**IT 130**  Building Internet Applications
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 240</td>
<td>Introduction to Desktop Databases</td>
</tr>
<tr>
<td>TDC 361</td>
<td>Basic Communication Systems</td>
</tr>
<tr>
<td>or IT 263</td>
<td>Applied Networks and Security</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</th>
<th>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>
<tr>
<td>TDC 365</td>
<td>Network Interconnection Technologies</td>
</tr>
</tbody>
</table>

**Screenwriting**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<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>
</tr>
</tbody>
</table>

**Security Minor**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</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>
</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>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>

**Software Engineering Minor**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</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>
</tr>
<tr>
<td>or 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>
<tr>
<td>or 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></td>
</tr>
</tbody>
</table>
Visual Computing Minor

MAT 140 Discrete Mathematics I  
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  
CSC 384 Introduction to Computer Vision  
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 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 7-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
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

IPD 392 Telecommunications Program
An 11-week intensive program focusing on the configuration, implementation and ongoing support of telecommunications systems and networks

IPD 394 Java EE Developer Program
A 10-week in-depth program covering enterprise-wide applications development using Java EE

Combined Bachelor/Master Degrees

The Combined Degree Programs at CDM are designed to allow academically gifted students to complete both a bachelor and master's degree in a shorter amount of time than by taking each degree separately.

Please note: This version of the degree replaces all previous combinations and current students will be migrated to this plan.

Combined Degree Program Structure

The shortened structure of combined degree programs is accomplished by students taking three Masters level courses in their junior and senior year that count toward both their bachelor and masters degree requirements at the same time. Students in this program will receive both a bachelor degree, after 192 undergraduate credit hours, and a masters degree after 10 more graduate courses (40 hours), instead of the standard 13 (52 hours).

How to apply:

In order to apply for the BS/MS program, your faculty advisor must send an e-mail recommendation to Becky Krochmal at bkrochmal@cdm.depaul.edu. The recommendation should include, the student full name, id number and the BS and MS degrees you wish to apply for.

Admission criteria are as follows:

- Minimum of 6 course/24 credit hours completed
- GPA of 3.3 or higher
- Endorsement of faculty advisor this should be sent via e-mail to bkrochmal@cdm.depaul.edu

Maintaining Good Standing

- Student GPAs and grades will be reviewed after Autumn, Winter, and Spring Quarter
- Student and Faulty 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)

Dismissal Policy

If a student's cumulative GPA falls below 3.3, the student must attain 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.

It is important to note:
**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 admissions procedures, but will still be required to take 13 graduate courses for a MS degree.

BA/BS-MA/MS Transition

If, upon completion of the BA/BS Degree, the student did not meet all prerequisites for the MA/MS Degree, then the student will need to complete (course, test or waiver) the missing prerequisites for the chosen MA/MS 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 MA/MS 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.
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.